Curriculum Associates' proposal to**:**

Arizona Department of Education

Arizona School Accountability Components and System
RFI #ADED16-0002

Deadline: July 15, 2016 3:00 P.M. Local

State of Arizona
Department of Education
1535 W. Jefferson Street
Phoenix, AZ 85007

Electronic

July 14, 2016

State of Arizona
Department of Education
1535 W. Jefferson Street
Phoenix, AZ 85007

Dear Reviewers:

Curriculum Associates, LLC (Curriculum Associates) respectfully submits this proposal to the Arizona Department of Education (ADE) in response to RFI # ADED16-0002 for Arizona School Accountability Components & System. We propose ADE select our award-winning, web-based ***i-Ready® Diagnostic***, an adaptive reading and math assessment for students in grades K–12. The *Diagnostic* is flexibly structured and positioned to support Arizona educators, students, and parents for optimal results. The *i-Ready* **suite of assessments** also includes—on the same platform—*Growth Monitoring* assessments (K–8) and *Standards Mastery* assessments (2–8), so teachers can monitor student learning progress.

Research-based and aligned to the Arizona College and Career Ready Standards, *i-Ready* combines these three powerful measures with immediate, comprehensive reports. The program provides actionable data and resources that will create individual instructional plans for all students, wherever they may be on their learning path.

The computer-adaptive nature of *i-Ready Diagnostic* makes our solution ideally suited for use with this initiative. The program's sophisticated algorithm pulls from thousands of test items to pinpoint each student's skills down to the sub-skill level within each domain. As a result, *i-Ready* covers a broad spectrum of student ability. The program's vertical scale equips educators with an effective measure for comparing changes in students' ability over their entire academic careers. *i-Ready's* continuum of scale scores across grades K–12 offers educators access to powerful longitudinal data by showing student progress within and across years—essential to differentiating instruction and supporting every learner in reaching his or her potential. *i-Ready's* reports also support intervention screening by providing data that maps student ability to intervention tiers and assigns students to appropriate instructional groups.

Internal and external research has shown that *i-Ready* is an effective solution for the full range of learning abilities—from students on grade level to those who are gifted and talented; from English Language Learners to those who are struggling (Title I, Response to Intervention Tiers 2 and 3, and students receiving Special Education services).

i-Ready promotes **thoughtful assessment** by eliminating the bridge that teachers must create between assessment from one source and instructional content from another source. Additionally, our solution alleviates test fatigue by dramatically reducing the total number of assessments administered.

Diagnosing student abilities, *i-Ready's* assessments will help Arizona educators:

- Identify grades/classes with high rates of students who are below level;
- Determine where additional resources are needed, and for which groups;
- Organize differentiated small-group instruction; and
- Identify appropriate instructional resources for each group.

Additionally, ***i-Ready's Growth Monitoring*** assessments offer a General Outcome Measure form of progress monitoring for students that can be used to project whether Arizona students are on track for appropriate growth. For students performing below grade level, *Growth Monitoring* can be used as a tool for intervention. The *Growth Monitoring* assessment is on the same vertical scale as the *Diagnostic*, for comparability.

i-Ready Standards Mastery mini-assessments are designed to be used as a mastery measurement form of progress monitoring. These tests may be administered individually or grouped together to assess mastery of an individual standard or a combination of standards, following the scope and sequence of standards taught within the classroom.

As an integrated assessment system, *i-Ready* can minimize the number of tests administered throughout Arizona districts, thus saving educators time and reducing test fatigue for students. In multiple client districts, implementation of *i-Ready* in reading and/or math has resulted in a dramatic reduction in the total number of assessments administered—effectively restoring that time to in-class instruction targeted to improving learning outcomes for students across the academic performance spectrum:

- Miami-Dade County Public Schools—one of the largest school districts in the U.S.—eliminated 24 assessments during the 2014–2015 school year. The District gained up to 260 minutes of instructional time per classroom.
- Vancouver Public Schools in Washington eliminated 105 tests in grades 1 through 9. By assessing with *i-Ready*, the District was able to restore an average of 900 instructional minutes back to each classroom across eight grade levels.
- Depending on grade level, Plain Local School District in Ohio was able to eliminate between four and nine categories of state- or district-required assessments, totaling 102 different assessments eliminated across K–8.

i-Ready is widely used; more than 3.2 million students across 2,000+ districts in 50 states and the District of Columbia are benefiting from the program.

At the state level, *i-Ready* has been reviewed and approved as an assessment, instructional resource, or intervention in California, Colorado, Georgia, Idaho, Indiana, Massachusetts, Oklahoma, Oregon, Tennessee, Utah, and Virginia.

The Colorado Department of Education approved *i-Ready* for use as a K–3 interim, diagnostic, and summative assessment to meet the requirements of the State's READ Act—the only program to be approved for use in all three categories. California uses *i-Ready* as a grade 2 diagnostic English language arts test; North Carolina has approved *i-Ready* as a Read to Achieve alternative assessment. Additionally, the New York State Education Department has approved *i-Ready* as a valid and reliable student growth measure, as have the states of Ohio and Virginia.

Furthermore, the National Center on Intensive Intervention (NCII) recently evaluated *i-Ready Diagnostic* as an Academic Progress Monitoring Tool. The program received the highest designation ("Convincing Evidence" rating or "Yes") for evidence of reliability of performance level score, reliability of slope, validity of performance level, predictive validity of slope improvement, disaggregated reliability and validity data, bias analyses, alternate form equivalence, end-of-year benchmarks, and rates of improvement. Full results are posted to their website (www.intensiveintervention.org).

In November 2015, we submitted *i-Ready* for National Center on Response to Intervention (NCRTI) review for the 2015 Call for Submissions of RTI Screening Tools. *i-Ready* for math and ELA/reading both received the highest designation for evidence of classification accuracy; reliability; validity; and disaggregated reliability, validity, and classification data for diverse populations. Full results will be posted to the NCRTI website later this summer.

Curriculum Associates has continued to evolve since our beginnings as a print publisher in 1969. While we have delivered excellent products to our customers for more than four decades, what really separates us from our competitors is our commitment to being the **best service provider in the publishing industry.** ADE and participating districts will have access to a dedicated Account Manager, Phoenix-based Educational Sales Consultant, and our responsive in-house Customer Service and Technical Support teams via toll-free telephone and email.

Curriculum Associates looks forward to partnering with the Arizona Department of Education to provide *i-Ready* to educators and students. For additional information about our proposed solution, please contact me by phone, (978) 901-6394; or email, vhurwitz@cainc.com.

On behalf of Curriculum Associates, thank you for your review of our submission.

Sincerely,

M. Vicky Hurwitz
Vice President, Strategic Planning

	Request for Information	**State of Arizona** **Department of Education** 1535 W. Jefferson Street Phoenix, AZ 85007
RFI No.: ADED16-0002 Description: **Arizona School Accountability Components & System**		

PLEASE COMPLETE THIS FORM AND SUBMIT THE COMPLETED FORM WITH YOUR RESPONSE TO THE RFI.

I/We M. Vicky Hurwitz, the undersigned, do hereby submit this response for information with regard to Arizona's Statewide School Accountability System in accordance with ARS §41-2555 Request for Information specification contained herein.

M. Vicky Hurwitz
Name

July 14, 2016
Date

Curriculum Associates, LLC
Company Name

Vice President of Strategic Planning
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(978) 901-6394
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EXECUTIVE SUMMARY

The challenges facing Arizona schools are significant. Administrators must find a way to do more with less, while fostering staff and community embracement of each new strategy. Educators are feeling the pressures of a growing focus on accountability and meeting the goals of the *Every Student Succeeds Act (ESSA)* and the *AZ Kids Can't Afford to Wait!* plan, while addressing the diverse instructional needs of students performing above, on, and below grade level.

As the disparity of educational needs in each classroom grows, how do teachers most effectively meet students where they are academically? How can educators maximize testing and instructional time while meeting the rigor of the new standards? How can they access the right data critical to guiding and differentiating instruction?

Designed to meet the rigor of the Common Core and aligned to the Arizona College and Career Ready Standards (AZCCRS), ***i-Ready Diagnostic*** for reading and mathematics addresses these challenges head-on by combining a web-based **suite of assessments**—diagnostic, growth , standards mastery—with instructional resources targeted to each child's specific academic needs. Decision-making at the student/group, class, school, and district levels is explicitly driven by comprehensive—actionable—reports. All components of *i-Ready* are provided on one platform.

> **The depth of the *Diagnostic* identifies specific areas of weakness, and the instructional components target those particular skills. *i-Ready* meets students in their zone of proximal development, providing the guidance and scaffolding they need to advance.**

i-Ready will help Arizona educators meet federal mandates and State goals for student achievement. Throughout this proposal, we feature how our suite of assessments aligns with the following:

Every Student Succeeds Act*:*

- Hold all students to high academic standards
- Prepare all students for success in college and career
- Guarantee steps are taken to help students, and their schools, improve
- Reduce the burden of testing while maintaining annual information for parents and students

***AZ Kids Can't Afford to Wait!* Plan**:

- Provide culturally inclusive education for all children
- Reduce standardized testing
- Strengthen student data protection
- Engage and support Arizona parents

- Support teachers in the classroom
- Deliver high-quality instructional support to all Arizona teachers
- Improve outcomes for minority students
- Expand support for English Language Learners
- Provide enhanced service to rural areas

Available for grades K–12, *i-Ready Diagnostic* provides intuitive reports that track student progress toward mastery of the new standards and explicitly inform instructional decision-making. The *Diagnostic's* ability to adapt across grade levels means that students experience both success and challenge, thereby maximizing their engagement, encouraging their best effort on the test, and yielding the most targeted prescription for instruction.

A continuum of scale scores from kindergarten through high school offers powerful longitudinal data by tracking student progress within and across years—essential to evaluating program efficacy, differentiating instruction, and supporting every learner in reaching his or her potential.

i-Ready Instruction, not included as a part of this assessment proposal but available for grades K–8, is also aligned to Arizona Standards and embeds engaging multimedia instruction and progress monitoring into every online lesson. We provide highlights of *i-Ready Instruction* so that reviewers may understand how the instructional modules work with *i-Ready Diagnostic* to differentiate instruction.

***i-Ready* embodies the philosophy that learning is a continuous cycle of assessment linked to instruction**:

- **Pinpointing Specific Student Needs with an Adaptive K–12 Diagnostic**—*i-Ready Diagnostic* automatically and accurately identifies each student's overall and sub-skill needs by domain in reading and math, providing a valid and reliable measure of student growth with detailed *Diagnostic* results and personalized next steps for instruction.

- **Providing Immediate, Prescriptive Reports that Inform Data-Driven Instructional Decisions**—From offering insight as to why students are struggling, to tracking their response to instruction and progress toward mastery of the AZCCRS, *i-Ready* presents all data in actionable, easy-to-read reports available as soon as students complete an activity in the program.
- **Monitoring Growth and *Standards Mastery* between Administrations of the Full Diagnostic to Inform Instructional Refinement and Remediation**
    - Monthly adaptive *Growth Monitoring* assessments inform ongoing teacher-led refinement of individual instructional paths for students in chronological grades K–8.
    - Available for grades 2–8, *i-Ready Standards Mastery* fixed-form assessments provide targeted, efficient assessment of specific grade-level standards—making it easy for teachers to obtain formative and benchmark information and quickly identify when re-teaching or remediation is needed as students progress throughout the year.
    - The quiz at the end of every K–8 *i-Ready Instruction* lesson serves as embedded progress monitoring, so teachers can track how well students are grasping skills taught online.
- **Connecting Valid and Reliable Data to Differentiated Instruction through Teacher-Led, Online, Mobile, and Supplemental Resources**
    - **Teacher-led instruction** is expertly and explicitly guided through *i-Ready Diagnostic's* real-time reports that detail each student's or instructional group's abilities and areas of need. The information in these reports provides teachers with a personalized action plan for individual and group instruction, as well as point-of-use tools to deliver that instruction in any style learning environment.
    - Based on the results of the *Diagnostic*, students are automatically placed into standards-based **online instruction** customized to their placement levels.

      Available for students performing at grade levels K–8, *i-Ready Instruction's* interactive modules provide a consistent best-practice lesson structure and build conceptual understanding, in addition to being engaging and relevant for learners of all levels.
    - *i-Ready's* reading and mathematics **practice apps for the iPad®** complement student and teacher-led instruction, providing fun but purposeful practice and challenge in reading vocabulary, fact fluency, and computational fluency—helping educators ensure long-term achievement gains and increase student performance and growth outcomes.
    - *i-Ready Diagnostic* reports also point to specific lessons within **supplemental Curriculum Associates' programs** (available as cost options)—such as *Ready®* print materials and/or the online *Ready Teacher Toolbox*—that provide additional support for students in bridging identified skill gaps.

As supported by internal and external research, *i-Ready* is an effective solution for the full range of learning abilities—from gifted and talented students, to English Language Learners, to those who are struggling (including Title I, Response to Intervention Tiers 2 and 3, and students receiving Special Education services).

> **"All of us—no matter where we are in our education, our professional learning—can always benefit and learn more and I really like how *i-Ready* does that for teachers on the reports. It says, "this is the problem, here's a solution."**
> **—Jane Priest, Literacy Coach**

Tour *i-Ready* online at www.i-ready.com/empower and www.i-ready.com/tour, where narrated program overviews, sample reports and lessons, research, client case studies, and customer testimonials are all available for review.

The Right Partner for the Journey: Proven Assessment and Superior Customer Service

Having a valid, reliable assessment directly linked to engaging, differentiated instruction that students AND teachers love is not enough to ensure the success of an Arizona district's implementation. The Arizona Department of Education (ADE) needs a qualified, dedicated, responsive, and—importantly—*flexible* partner for this journey. Curriculum Associates will support ADE and participating districts with a research-based, proven assessment enhanced by superior customer service.

Founded in 1969 by a group of educators, Curriculum Associates is a privately owned and socially responsible educational publishing company headquartered in Massachusetts, with satellite offices in **Arizona**, Illinois, and Iowa and local sales representation across the nation.

We publish reading/English language arts (ELA) and mathematics assessments for grades K–12; early childhood and Special Education screens and inventories for birth to grade 12; and core, supplemental instruction, and intervention resources for students in grades K–8. We also provide targeted, classroom-proven professional development to guide implementation of our programs.

Financially sound and nearly 600 personnel strong, Curriculum Associates is an agile ally committed to the actualization of an ideal that is well-aligned with the State's own mission: all students should have an equal opportunity to succeed in school, while actually engaging in their own achievement and enjoying the learning process. We believe so strongly in this ideal that we guarantee results.

> **Our products are fully guaranteed. If *i-Ready* does not meet the ADE's expectations, we will promptly issue a refund for the remaining license term.**

Our corporate focus on customer service requires deep understanding of the needs of the educators and students we serve. This focus, combined with our independent ownership, allows us to invest heavily in product development and to respond rapidly to changes in education.

In addition to the proposed *i-Ready Diagnostic & Instruction*, we are a sole source provider of the BRIGANCE® family of products for Early Childhood, Head Start, and Special Education and *Ready® Common Core* for reading, writing, and mathematics. For a full list of our programs, go to our website at www.curriculumassociates.com).

In tandem with our dedication to designing and developing high-quality assessment and instructional programs that drive measurable student achievement, what really separates us from our competitors is our commitment to being the best *service* provider in the publishing industry.

Beginning with Arizona's first contact with Curriculum Associates through setting up and implementing the program, our staff will be here to ensure the success of State educators and students.

Throughout nearly 47 years in business, Curriculum Associates has built a reputation for outstanding post-sale service and support. At no additional cost to ADE and participating districts, the *i-Ready* license fee includes program upgrades and maintenance, plus unlimited access to our U.S.-based Customer Service and Technical Support teams via toll-free telephone and email during business hours. Inquiries received after business hours will receive priority attention the next business day.

> **"Great and consistent work over the years celebrating and supporting the differentiated needs of learners across the States. We appreciate the skill and professionalism of Curriculum Associates and their teams!"—Administrator**

For this Arizona initiative, Curriculum Associates will designate **Regina McCarthy** as Account Manager. Regina will be available to answer Arizona user questions and provide other technical and account-related support. She will be the primary point-of-contact for participating districts, so users will always know who to contact. Arizona implementations will also be supported by an experienced Educational Sales Consultant, **Robin McMath**.

Experienced, Creative Professionals to Support Arizona Implementations

To provide the highest quality products and service, Curriculum Associates emphasizes a rigorous training program for all employees. In addition to extensive on-the-job training, each of our new employees undergoes thorough training in company practices and product knowledge.

Training and professional development for our employees is ongoing, and our personnel have unlimited access to recorded webinars and training videos posted online, are encouraged to attend regular live webinars, and frequently have the opportunity to participate in "lunch and learns" and other interactive knowledge-sharing events. These training activities ensure all employees have the most current product knowledge and are fully equipped to serve our customers.

ADE's implementation team will include the following key individuals.

- **Regina McCarthy, *i-Ready* Account Manager.** Regina will assist ADE and Arizona educators with the coordination and scheduling of all aspects of implementation, serve as the primary point-of-contact for school and district leadership teams, and provide direct support to educators as they use *i-Ready Diagnostic*. Regina joined Curriculum Associates in 2014 from Pearson, where as Director of Product Management, she managed the conceptualization and execution of user experience and instructional design for new products.

  Previously, she was Vice President, Editorial Director of World Languages, at McDougal Little. In that role, she created market-driven, cutting-edge technology products in CD-ROM and web-based environments. Regina also served as Development Editor, World Languages at Heinle & Heinle; and Senior Editor at Silver Burdett Ginn, where she directed the development of basal texts, technology, and support materials for Spanish bilingual and ESL markets. She earned a B.A. in Comparative Literature from Hamilton College.

- **Robin McMath, Educational Sales Consultant.** Prior to coming to Curriculum Associates in 2011, Robin taught elementary school in Arizona for 11 years. During that time, she provided training courses for the Professional Development department and was a professor at Northern Arizona University and Arizona State University.

  After serving as the District Language Arts Curriculum Specialist for Paradise Valley School District in Phoenix, Robin joined the publishing industry as a supplemental sales consultant. Based in Arizona, she holds a Masters in Educational Curriculum and Instruction from Arizona State University. She will collaborate with the Curriculum Associates implementation team, ADE, and participating districts to support a successful implementation.

- **John Sipe, Regional Vice President.** John joined Curriculum Associates in early 2014. Previously, he was with Houghton Mifflin Harcourt (HMH) for 12 years in a number of roles including Senior Vice President, National Sales Manager, and Senior Vice President for Business Development. In these roles, John worked to support educators and colleagues in utilizing technology to improve educational outcomes. Prior to his time at HMH, he was with Sadlier-Oxford for 12 years in various roles including Regional Manager for the West.

John earned a B.S. in Business Management & Organizational Leadership from St. John's University in Minnesota. He continues to focus on supporting educational technology in his personal time as the member of the Board of Directors on San Diego's Classroom of the Future Foundation. John will ensure the ADE initiative receives full corporate support and attention.

i-Ready: Implemented in More than 2,000 Districts Nationwide

i-Ready Diagnostic embodies our commitment to equitable education; our products have had a profound impact on student learning across the nation. Curriculum Associates' ability to provide a valid and reliable suite of assessments is best documented by the current use of the product across the country. Curriculum Associates released the award-winning[1] *i-Ready* in the summer of 2011. Since then, we have provided the program to urban, suburban, and rural schools in all 50 states and the District of Columbia.

More than 3.2 million students representing over 2,000 K–12 districts are now using *i-Ready* assessments and instruction. *i-Ready* is approved in many large, urban school districts, including Chicago, Cleveland, Dallas, Houston, and Newark.

Over the past three years, more than 150 educational entities in Arizona have implemented Curriculum Associates' products and services, and more than 110 Arizona schools, districts, and educational institutions have benefited from *i-Ready*.

Statewide Approvals

The program has been reviewed and approved at the state level as an assessment, instructional resource, or intervention in California, Colorado, Georgia, Idaho, Indiana, Massachusetts, Oklahoma, Oregon, Tennessee, Utah, and Virginia. The Colorado Department of Education approved *i-Ready* for use as a K–3 interim, diagnostic, and summative assessment to meet the requirements of the State's READ Act—the only program to be approved for use in all three categories. The Utah State Office of Education approved *i-Ready* as a K–8 STEM Action Center Math Instructional Learning Software and K–3 Early Intervention Literacy Instructional Software. California uses *i-Ready* as a grade 2 diagnostic English language arts test; North Carolina has approved *i-Ready* as a Read to Achieve alternative assessment. Further, the New York State Education Department has approved *i-Ready* as a valid and reliable student growth measure, as have the states of Ohio and Virginia.

[1] Awards include, among others: 2016 REVERE Award (Reading/Language Arts, Supplemental Resources category); 2016 CODiE Awards finalist for ***Best Student Assessment Solution***; *EdTech Digest* Cool Tool finalist; *THE Journal* 2015 Readers' Choice Awards (*i-Ready* received a gold medal in the interventions/remediation category and a silver in the Adaptive and Personalized Learning category); 2015 *Tech & Learning* Award of Excellence; *eSchool News'* 2014–15 Readers' Choice Awards; *District Administration* Readers' Choice Top 100 Product for 2014; and 2013 SIAA CODiE Award for *Best Student Assessment Solution*.

National Review

The **National Center on Intensive Intervention** (NCII) recently evaluated *i-Ready Diagnostic* as an Academic Progress Monitoring Tool. The program received the highest designation ("Convincing Evidence" rating or "Yes") for evidence of reliability of performance level score, reliability of slope, validity of performance level, predictive validity of slope improvement, disaggregated reliability and validity data, bias analyses, alternate form equivalence, end-of-year benchmarks, and rates of improvement. Full results are posted to their website (www.intensiveintervention.org).

In November 2015, we submitted *i-Ready* for **National Center on Response to Intervention** (NCRTI) review for the 2015 Call for Submissions of RTI Screening Tools. *i-Ready* for math and ELA/reading both received the highest designation for evidence of classification accuracy; reliability; validity; and disaggregated reliability, validity, and classification data for diverse populations. Full results will be posted to the NCRTI website later this summer.

OVERVIEW OF *i-READY DIAGNOSTIC*

Using *i-Ready Diagnostic* to Support MTSS and RTI

i-Ready provides explicit support for Multi-Tiered Systems of Support (MTSS) and Response to Intervention (RTI) initiatives. Aligned with MTSS guidelines, the program supports:

- Data-based problem-solving to implement and evaluate intervention implementation
- Placing students in Tiers, as well as determining the impact of instruction/intervention
- Skill-specific instructional guidance and resources targeted to the skills holding students back

The three components of *i-Ready* that match the MTSS Foundational Beliefs:

- **Diagnostic Assessment:** Valid, reliable, adaptive assessment that measures skill strengths and weaknesses, identifies skills in need of improvement, and assists in determining why a problem is occurring.
- **General Outcome Measure (GOM):** *Growth Monitoring* assessment conducted for the purposes of guiding instruction, monitoring student progress, and evaluating instruction/intervention effectiveness.
- **Teacher-Led and Online Interactive Instruction:** Instruction is differentiated to meet individual learning needs.

Diagnostic Assessment. *i-Ready Diagnostic* automatically places students into an individualized course of instruction targeted to the needs of each student. The program prioritizes instructional needs for individual students, which is consistent with MTSS. The *Diagnostic* assessment also groups students with similar abilities and needs for small-group instruction, and prioritizes the skills those children need to work on most. This is also consistent with MTSS guidelines, especially for Tiers 2 and 3 students.

Growth Monitoring Assessment (General Outcome Measure). *i-Ready Diagnostic* also uses a general outcome measure to track success of regular instruction as well as any additional intervention used with a student, as called for by MTSS. Curriculum Associates selected GOM because it:

- **Provides a holistic view** of students' performance versus other approaches.
- **Reflects an integrated view** of the skills so that teachers can address the full needs of each student rather than narrowly focusing on a single area of need.
- **Allows for measurement of growth over time**. *i-Ready Diagnostic's* GOM uses the same scale as the *Diagnostic* assessments. This allows educators to measure their students' growth throughout the year, as well as assessing Tiers 2 and 3 students on Tier 1 metrics, which is consistent with MTSS guidelines.
- **Increases efficiency for teachers.** *i-Ready Diagnostic* automatically prioritizes which domains/ lessons/skills to focus on for instruction based on the *Diagnostic* assessment, and then the *Growth Monitoring* assessments are able to capture overall growth.
- **Looks at performance versus targets** to allow teachers to quickly see whether students are on track relative to typical growth and relative to grade-level and district expectations.
- **Recommended by experts**. *i-Ready Diagnostic*'s assessments were developed in conjunction with experts in the field of psychometrics and Response to Intervention. Advisors included Dr. John Hintze, Professor at the University of Massachusetts Amherst School of Education—an advisor to the NCRTI—and Dr. Richard Brown, Psychometrician at the University of Southern California School of Education.

Reviewers may refer to the tables below for detailed information regarding how to leverage *i-Ready's* features and functionality to meet MTSS needs, particularly for Tiers 2 and 3 students.

Implementation for Tier 2

MTSS Guidance	What Features to Use within *i-Ready*
Frequency: Once a week to once a month	*Diagnostic* and GOM *Growth Monitoring* assessments
Answer the question: "Which students require supplemental instruction or practice based on an analysis of their current needs in relation to Tier 1 standards of performance?"	• Use *i-Ready Diagnostic* data to inform into which Tier students are initially placed. • Then use the Class *Growth Monitoring Report* to review which students still are not meeting targets over time.
Answer the question: "How should students receiving supplemental instruction be grouped together for small-group instruction (e.g., based on skill/content/subject area of need)?"	• Use the *Instructional Grouping Report* (based on *Diagnostic* data) three times per year to inform into which Tier students are placed.

MTSS Guidance	What Features to Use within *i-Ready*
Answer the question: "Which students will be provided with a standard protocol approach to address common and recurring concerns for which there are ample evidence-based options for intervention/instruction?"	• Use the *Class Growth Monitoring Report* to determine which students are on track to achieve targets.
Answer the question: "Which students will need modified interventions or more in-depth problem solving (particularly problem analysis) in order to ensure an appropriate match between the instruction/service supports and the students' needs?"	• Use the *Class Growth Monitoring Report* to determine which students are on track to achieve targets.
Answer the question: "Which students are demonstrating a positive response to the supplemental instruction/intervention being provided to them? Which are demonstrating moderate to poor responses to instruction/intervention (remember to check fidelity first for those not progressing)?"	• Look at the trend line on the *Student Growth Monitoring Report* to see which students are on track to meet goals/targets. • Target students who are not on track for goals/targets for additional intervention, using the instructional guidance and resources provided by the *i-Ready* program.
Answer the question: "Are the majority of students within a given supplemental instructional group demonstrating a positive response to the instruction (i.e., is Tier 2 effective)?"	• Use the *Class Growth Monitoring Report* to look at percent of students meeting goals/targets.
Answer the question: "Which students may need more intensive services? And, which students may be ready to either address other areas of need or transition back to receiving Tier 1 instruction only?"	• Look at trend line on *Student Growth Monitoring Report* to see which students are on track to meet goals/targets. • Target students who are not on track for goals/targets, using the instructional guidance and resources provided by the *i-Ready* program.
Answer the question: "Are students who are demonstrating progress at Tier 2 based on progress monitoring data also demonstrating progress on their Tier 1 assessments? If not, why not?"	• In *i-Ready*, all students receive the same type of assessments, both *Diagnostic* and *Growth Monitoring*. • The student's trend line on the *Student Growth Monitoring Report* should be used to adjust Tier placement.

Implementation for Tier 3

Many questions posed at Tier 2 are applicable to Tier 3. Additional questions to ask are listed below.

MTSS Guidance	What Features to Use within *i-Ready*
Frequency: very frequent, once a month at a minimum, depends on the student's specific needs	*Diagnostic* and GOM *Growth Monitoring* assessments
Answer the question: "Is the student appropriately matched to the intervention plan(s) developed for the student?"	• Use *Diagnostic* data to inform into which Tier students are initially placed.

MTSS Guidance	What Features to Use within *i-Ready*
	• Then, look at trend line on Student *Growth Monitoring* Report to see which students are on track to meet goals/targets. • Target students who are not on track for goals/ targets for additional intervention, using the instructional guidance and resources provided by the *i-Ready* program.
Answer the question: "If the student is demonstrating a positive response to the intervention(s), then is the student also demonstrating improvements in Tier 1 assessment performance? If not, why not? What next goals/needs should be targeted? Does the student need Tier 3 services anymore (they may still need Tier 2 services)?"	• Look at trend line on *Student Growth Monitoring Repor*t to see which students are on track to meet goals/targets and help determine if students still need to receive Tier 3 services throughout the year (in conjunction with data from *Diagnostic* and other assessments). • Use teacher-led lesson plans to target skills that should be prioritized for each student and/or instructional group.
Answer the question: "If the student is not progressing, is fidelity a concern? Does this student need a long-term (2 or more years) plan for "catching-up" to grade level standards (including transition plans between grades)?"	• Look at trend line on *Student Growth Monitoring Report* to see which students are on track to meet goals/targets.

Pinpointing Specific Student Needs with a Valid and Reliable Adaptive Diagnostic

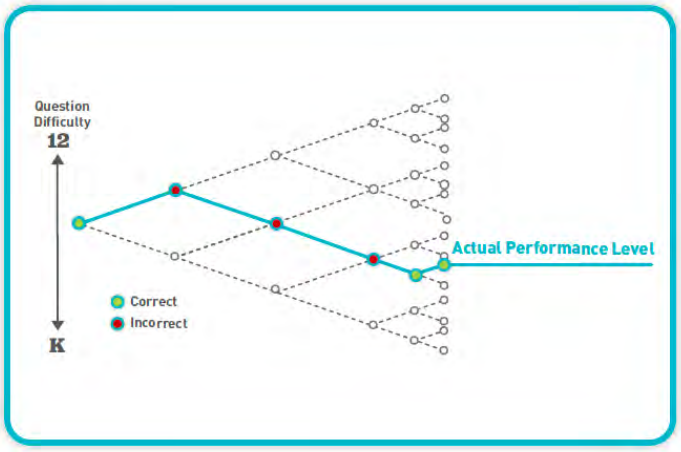
i-Ready's sophisticated adaptive algorithm automatically selects from thousands of multiple-choice and technology-enhanced items to get to the core of each student's strengths and challenges. For example, a student may be on grade level with Comprehension of Literary Text, but below grade level for Comprehension of Informational Text. Or in mathematics, a student may be struggling in Algebra, but meeting grade-level expectations in Numbers and Operations. The depth of the item bank enables *i-Ready* to truly pinpoint a student's ability, and ensures the accuracy of results.

How i-Ready Diagnostic Works

Adaptive Structure:

i-Ready Diagnostic adapts, or adjusts, until it finds exactly the level at which students need to receive instruction.

- When students answer questions correctly, i-Ready gives them more challenging questions
- When students answer questions incorrectly, i-Ready gives them less challenging questions
- This process continues. In the end, i-Ready pinpoints which skills each student has mastered and which skills need improvement



i-Ready's individually administered, untimed test occurs entirely online via a compatible internet-enabled device with headphones or speakers. An automated system check and technical requirements are available at www.i-ready.com/support. The assessment takes each student approximately 30–60 minutes per subject to complete. This range is approximate because of the wide range of ability levels: some students may need additional time, while students in lower grades will generally take less.

As *i-Ready* saves each student's place upon exiting, we recommend multiple testing sessions so they do not feel rushed and can produce their best work. For grades K–1, we recommend two to three 15–20 minute testing periods per subject. For grades 2 and up, we recommend two 45-minute testing periods per subject. The number, timing, and duration of sessions may be adjusted. Students are given the *Diagnostic* three times each school year, with 12–18 weeks of instruction between tests.

> **"…We need reliable diagnostic assessments like *i-Ready*…I commend Curriculum Associates for being at the forefront of the growing national trend to implement dependable assessments of student progress…*i-Ready* provides crucial information regarding student growth." – Malbert Smith III, Ph.D., President and Co-Founder, MetaMetrics®**

Upon completion of the adaptive *Diagnostic*, *i-Ready* reports multiple types of scores to present a well-rounded view of each student's proficiency levels.

Scale Scores (K–12)—A common language across grades and schools, scale scores put everything on a single continuum so that educators can compare across grade levels. They provide a metric, which indicates that a student has mastered skills up to a certain point and still needs to work on skills that come after that point. *i-Ready Diagnostic* makes measuring student growth easy because of its vertical scale score, providing a continuum of scale scores across grades K–12.

Because the *Diagnostic* adapts across grades K–12, *i-Ready* provides a valid and reliable growth measure from year to year. Use *i-Ready* across the district to track yearly student progress and optimize administration decision-making for long-term performance improvements.

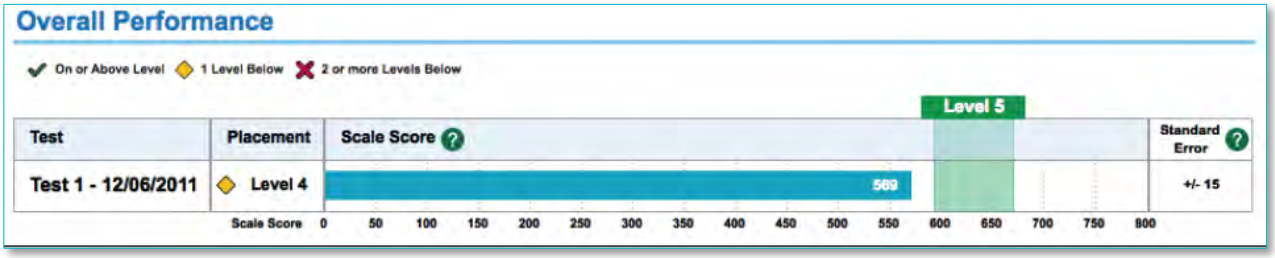


Figure 1. Scale score and placement level, as seen in *i-Ready's Student Profile Report*.

Placement Levels (K–12)—The practical day-to-day language that helps teachers determine what grade level of skills to focus on with a particular student, placement levels indicate where students should be receiving instruction.

> **"The most significant thing about *i-Ready* is how it places students accordingly and how it guides teachers in addressing the situation regarding students' knowledge."—Educator, Florida**

Norm Scores (K–8)—Identify how students are performing relative to their peers nationwide. Based on a nationally representative sample of students taking the *i-Ready Diagnostic*, norm scores specify a student's ranking compared to students in the same grade. For example, if a student's percentile rank is 90 percent, this means the student scored better than or equal to 90 percent of his or her national peers from the same grade level.

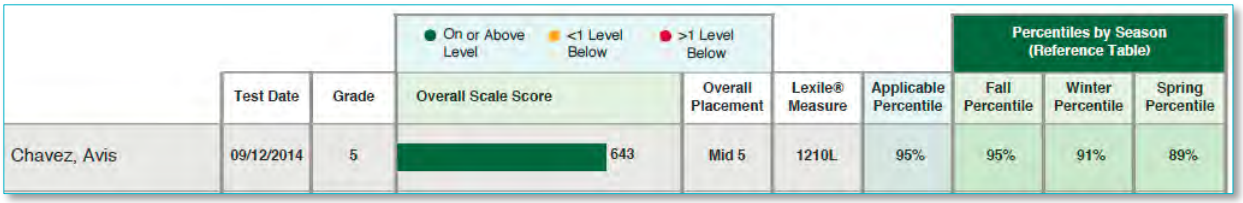


Figure 2. Excerpt from a sample *Class Norms Report* for reading.

Lexile® Measures (K–8)—Developed by MetaMetrics®, Lexile measures are widely used as measures of text complexity and reading ability, allowing a direct link between the level of reading materials and the student's ability to read those materials. The *i-Ready Diagnostic* reading assessment has been statistically linked with the Lexile Framework, making it possible to provide an equivalent Lexile measure for every overall scale score.

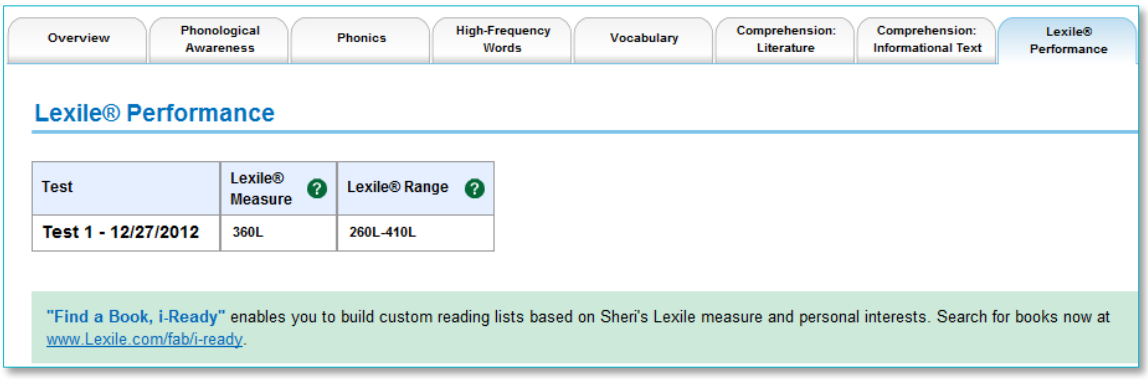


Figure 3. Onscreen view of a sample Lexile Performance Measure.

Quantile® Measures (K–8)—Developed by MetaMetrics, the Quantile Framework for Mathematics is a unique resource for accurately estimating a student's ability to think mathematically and matching him or her with appropriate mathematical content. The *i-Ready Diagnostic* math assessment has been linked with the Quantile Framework, making it possible to provide a Quantile measure for each student that corresponds to each overall scale score.

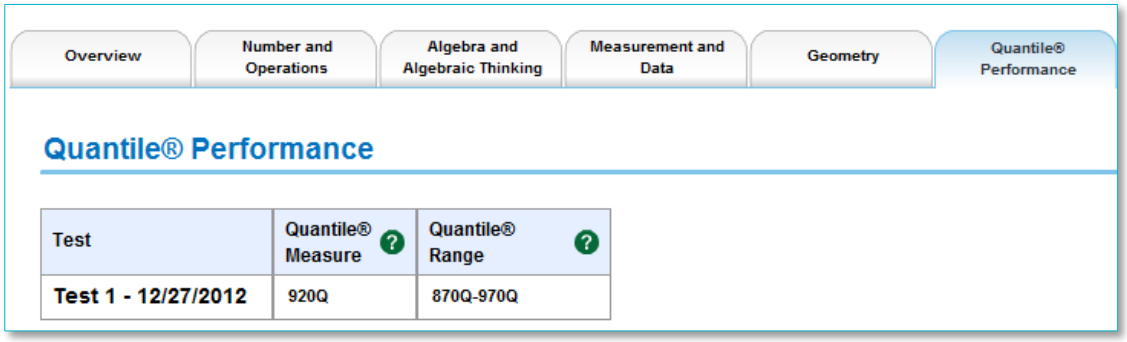


Figure 4. Onscreen view of a sample Quantile Performance Measure

"What a wonderful tool for parent conferences, planning student instruction, motivating learners, and providing center activities. Can't say enough good things about *i-Ready*!"—Educator

i-Ready also provides educators with explicit **qualitative information** on each learner's abilities, including the specific skills students have mastered and those that need to be prioritized for instruction, as well as standard-by-standard analysis that details student performance against the Arizona standards and sub-skills.

District Reports | School Reports | Class Reports | Student Reports | Export Queue

AZCCRS Performance

Academic year: Current (2012-2013) **Show:** Test 1 - 12/27/12
Select Students by: Class **Compare to:** None
School: Harrington Elementary School **Begin Range:** Grade 2
Class: Class Grade 3 (Math) **End Range:** Grade 2
Student: Brittian, Jasmine

Back Print/S

Jasmine Brittian

Test 1 - 12/27/12

Based on the results of the selected Diagnostic Assessment, the student likely understands the i-Ready skills aligned to the green checked standards below. The white check mark indicates either that the student only understands some of the i-Ready skills aligned to the standard or the aligned i-Ready skill is only partially related to the standard, so claims can only be made conservatively. You can click on the i-Ready icon next to each standard to see the exact language of the indicator that was assessed. You may refer to the technical manual for a more detailed explanation.

Arizona's College and Career Ready Standards for Mathematics

Grade 2			Test 1
Operations and Algebraic Thinking **Represent and solve problems involving addition and subtraction.**			
2.OA.1	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	Skills	✓
2.OA.1	Use . . . subtraction within 100 to solve one- . . . step word problems involving situations of . . . comparing . . .	Skills	✓
Operations and Algebraic Thinking **Add and subtract within 20.**			
2.OA.2	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	Skills	✓
2.OA.2	Fluently . . . subtract within 20 using mental strategies. . .	Skills	✓

Figure 5. Excerpt from an *AZCCRS Performance Report* for mathematics.

Curriculum Associates built *i-Ready* on the Common Core; as a result, the program matches the expected rigor in each of the covered domains listed here:

Reading/English Language Arts	Mathematics
✓ Foundational Skills: Phonological Awareness, Phonics, and High-Frequency Words ✓ Vocabulary ✓ Comprehension: Informational Text ✓ Comprehension: Literature	✓ Number and Operations/The Number System ✓ Algebra and Algebraic Thinking ✓ Geometry ✓ Measurement and Data

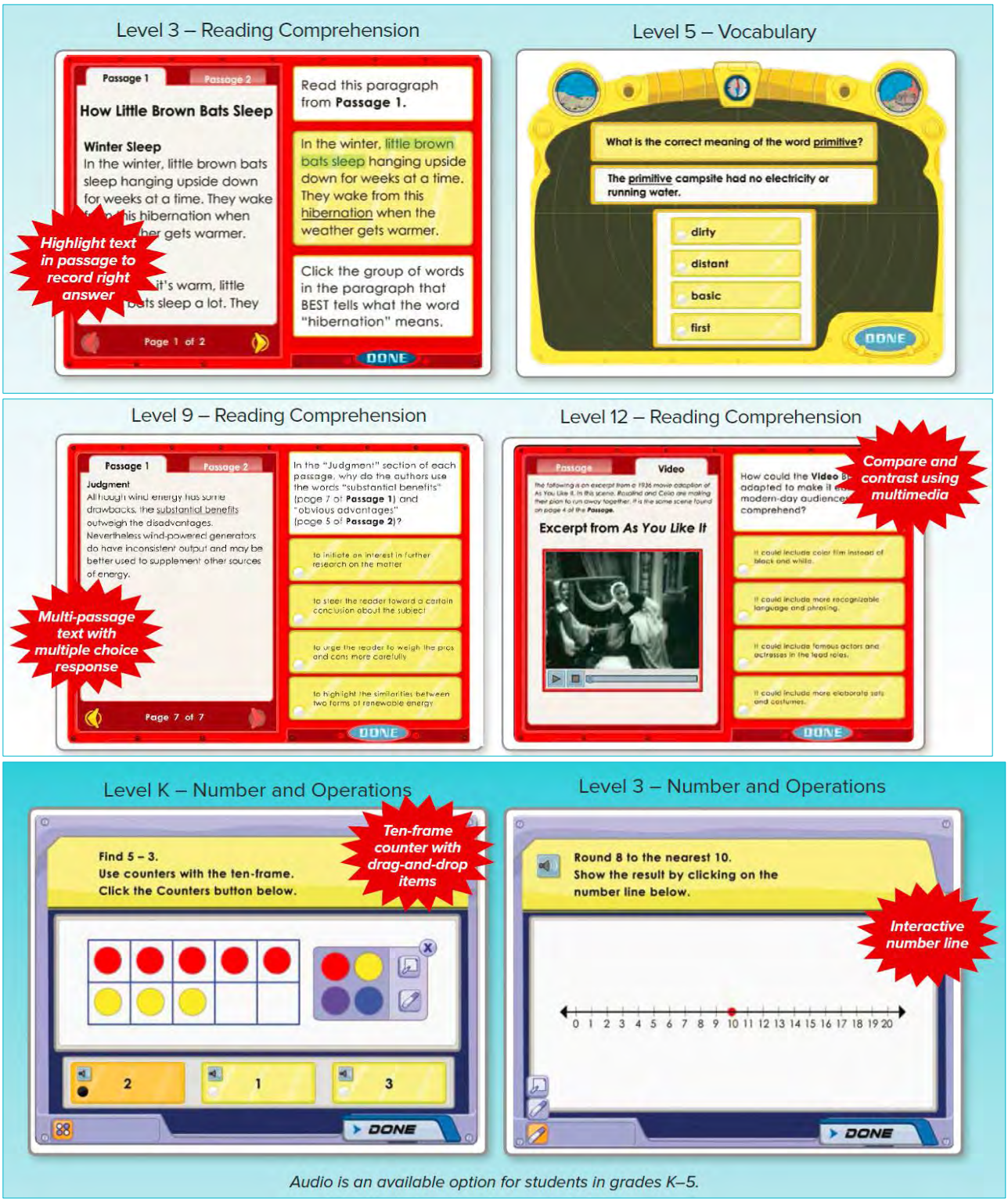
i-Ready prepares students for College and Career Readiness expectations, including Smarter Balanced Assessment Consortium (SBAC) and Partnership for Assessment of Readiness for College and Careers (PARCC) expectations. Computer-adaptive testing and the Rasch Item Response Theory model form a strong foundation for determining the ability levels of each student and ensuring *i-Ready Diagnostic* reports valid inferences.

To continually enhance and evaluate the program, we are committed to ongoing research and exploration of new content, technology, methodologies, and reporting. **National linking studies with 16 states** are underway to expand the generalizability of the linking between *i-Ready Diagnostic* and different state assessments. These studies include North Carolina, Florida, New York, and Louisiana.

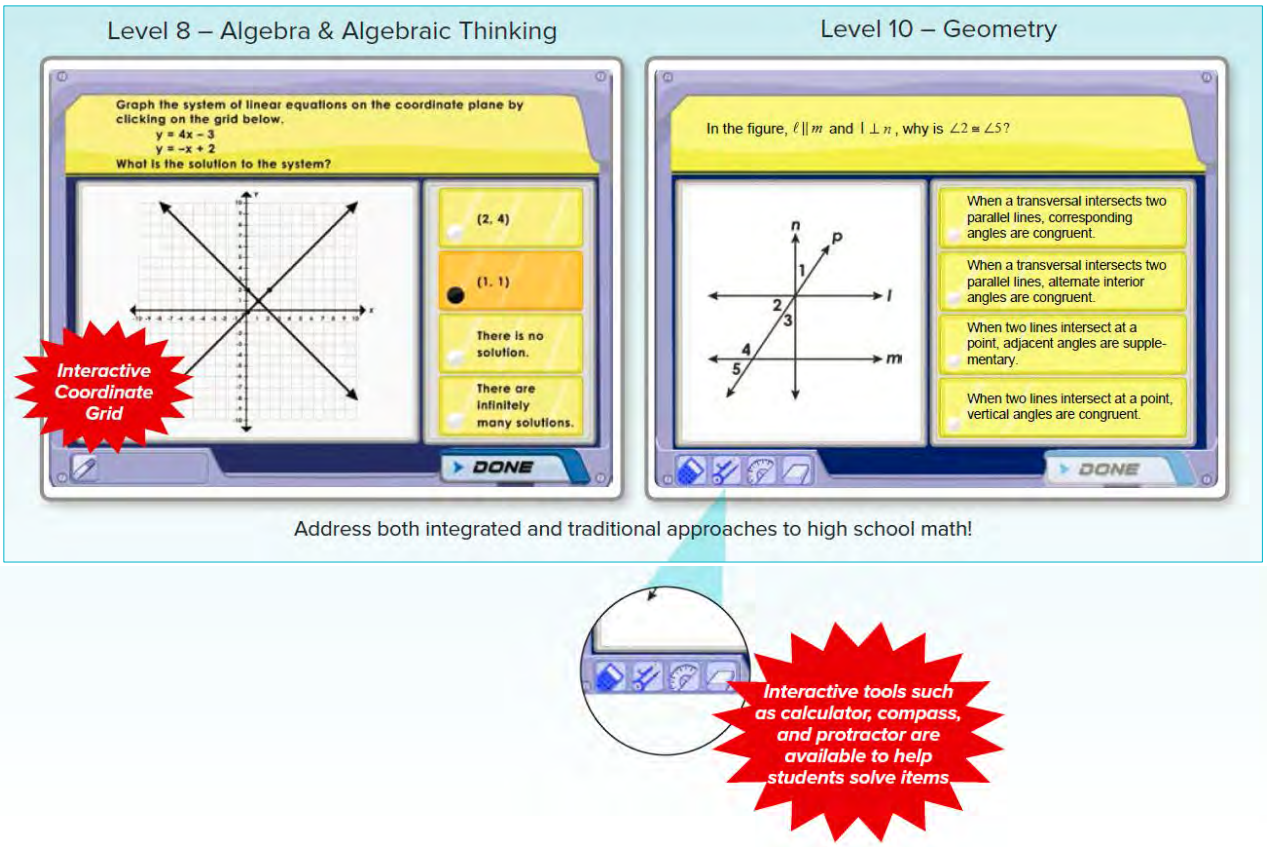
Curriculum Associates is continually developing new items as candidates for inclusion in the *Diagnostic*. Using an embedded field-test model, we widely field test many new items with the appropriate demographic samples of students, collecting data to effectively evaluate each item's ability to predict specific performance indicators. From extensive field-testing of *i-Ready* items with more than two million students, there exists a very strong and reliable foundation for determining the difficulty level of each item, as well as each indicator group.

From the ability level of the student and the difficulty level of these indicators, *i-Ready* can make probabilistic inferences about what students know and are likely able to do. Using this information, the assessment can accommodate students of far-ranging ability levels. Moreover, the results from *i-Ready Diagnostic* pinpoint students' strengths and provide teachers with meaningful, actionable information regarding what students should work on next.

The sample items presented below illustrate *i-Ready's* engaging format and alignment to Arizona standards. In reading, passages at every level cover literary and informational text; place an emphasis on close, evidence-based reading; and consist of complex text. In math, items emphasize conceptual understanding and procedural fluency; support the eight mathematical practices; and many entail word problems/problem solving.



Audio is an available option for students in grades K–5.



"The teachers absolutely love the diagnostic components, they love the reports that they can generate, they love the consistent update—either in a graph form or in a report form. They love being able to share these results with parents. They love being able to put a child's performance in perspective for a parent to know where specifically the needs are so that they can begin to be addressed."—ELL Coordinator

Prescriptive Reports that Inform Data-Driven Instruction

Going far beyond merely compiling scores and time-on-task, *i-Ready's* intuitive reports provide developmental analyses, group students who struggle with the same concepts, make instructional recommendations to target skill deficiencies, and monitor progress and growth as students follow their individualized instructional paths.

Embedded in the program and included with the license fee, *i-Ready's* robust analysis platform presents all data in practical, intuitive reports that are available as soon as students complete an activity in the system. Always up-to-date, reports are readily accessible at four levels:

- **1) District- and 2) School-Level Reports**—A district- or school-level view gives administrators a clear indication of overall performance and the extent of intervention needed in the district. This real-time visibility enables immediate and effective course corrections.

- **3) Class-Level Reports**—Class reports provide teachers with a wealth of information to monitor and drive student growth. Teachers can quickly see which students need intervention, the key areas to target for each student, and how to group students for instruction.
- **4) Student-Level Reports**—*i-Ready* provides teachers and parents with a detailed and easy-to-read analysis of every student's proficiency levels. Reports detail which skills students have mastered and those skills to prioritize next for instruction, thereby supporting success for every student.

Reports may be downloaded in PDF format and printed; many raw data may also be exported individually and in batches as CSV files and then saved to Excel. The onscreen and PDF versions of reports are formatted differently, to ensure clean views and pagination when printed.

> **"Our district piloted *i-Ready* as the ongoing assessment piece to drive RTI. Teachers fell in love with the detailed data and the ease with which they could group and target instruction."—Assistant Superintendent**

Reports include suggested next steps for instruction and PDF *Tools for Instruction* lesson plans for the teacher to use during small-group or whole-class instruction. The following table presents the standard reports available within *i-Ready* for Arizona. Sample reports are available online at www.i-ready.com/empower. For *Standards Mastery* reports, see the self-titled section beginning on page 28.

***i-Ready Diagnostic & Instruction* Standard Reports for Arizona**	
Report	**Description**
Student Reports	
Student Profile	This report provides a grade-level placement score overall and for each strand, detailed analyses of the sub-skills causing students to struggle, and explicit instructional recommendations based on each student's needs. Teachers can drill down to see the performance detail for each strand. Downloadable *Tools for Instruction* lessons for K–8 provide additional support to teachers in individual, small-group, or whole-class instruction. To run reports for multiple students at a time, batch reports of the Student Profile Overview and Student Profile Detail pages are available. K–12
Lexile Performance	This tab within the *Student Profile Report* for reading shows a student's Lexile score and the "Find-a-book" feature helps locate appropriately Lexile-leveled reading materials for each individual student. K–8
Quantile Performance	This tab within the *Student Profile Report* for mathematics shows a student's Quantile score. K–8
AZCCRS Performance	The *Arizona College and Career Ready Standards Performance Report* evaluates how students are performing against the standards. This report includes point-of-use links to the aligned standard(s) for easy reference. K–12
Growth Monitoring	This report allows educators to check whether students are on track for end-of-year expectations, without waiting for the next full *Diagnostic* assessment. It informs teacher-led refinement of instruction. *Growth Monitoring* provides information about how much growth a student should be making and whether or not that child is on track to attain that level. K–8

i-Ready Diagnostic & Instruction Standard Reports for Arizona	
Report	**Description**
Response to Instruction	The *Student Response to Instruction Report* shows student performance on *i-Ready Instruction's* online lesson modules. Teachers and administrators can see how much time students are spending on lessons as well as the progress they are making, so the report serves as embedded progress monitoring. This helps teachers ensure that students are using the program effectively. Domain-level analyses of instructional performance help teachers plan further remediation. Available only with the use of *i-Ready Instruction.* K–8
Parent Report	This report helps teachers communicate student performance to parents in a comprehensible way. A *Parent Letter* and *Parent Guide* that explain *i-Ready* are also available, in both English and Spanish. To run parent reports for multiple students at a time, a batch report is offered. K–12
Class Reports	
Class Profile Report	Helping teachers quickly and effectively group students by specific needs, this report uses *Diagnostic* assessment results to inform class instructional decisions. Its graphical presentation enables educators to quickly analyze students' varying average scale scores, as well as their grade-level placement by domain. K–12
Norm Scale	This report shows each student's position (percentile rank) relative to their peers nationwide and also allows teachers to view and compare Lexile/Quantile measures for students in their class. K–8
Class Response to Instruction	This report helps teachers identify how their classes are performing in online instruction, if their students are making progress, and how much time their students are spending completing online instruction. Available only with *i-Ready Instruction.* K–8
Instructional Grouping	This report shows teachers how to group students so those struggling with the same skills can get the most out of small-group instruction. The *Instructional Grouping Report* affords educators flexibility in categorizing students and targeting efficient and effective remediation. Teachers can drill down to see instructional priorities specifically designed for each profile group. Additionally, this report provides *Tools for Instruction* lesson plans based on the skills in which each profile group is deficient. These tools guide teachers in "what to know" about each topic, as well as ways to teach it and connections to standards. K–8
School Reports	
Intervention Screener	This report informs decisions about which students to place into intervention. It groups students into three tiers that align graphically to the *Class Profile Report*. In the Detail by Student section, teachers and administrators can sort and view details such as overall scale score, grade-level placement, tier, and teacher. K–12
Performance by Grade and Class	The *Performance by Grade and Class Report* measures gains at a single school by grade and class. K–12
Student Growth by Grade and Class	For students who have taken two or more *Diagnostic* assessments, the *Student Growth by Grade and Class Report* is available. Growth targets may be set at the school level. This report allows educators to track student growth between assessments, show what good growth is and whether each grade met targets (or is on track to meet targets), measure progress toward yearly growth targets across the school (or drill down to grades or even specific classes), and show educators where to allocate more resources for more intensive intervention. K–8

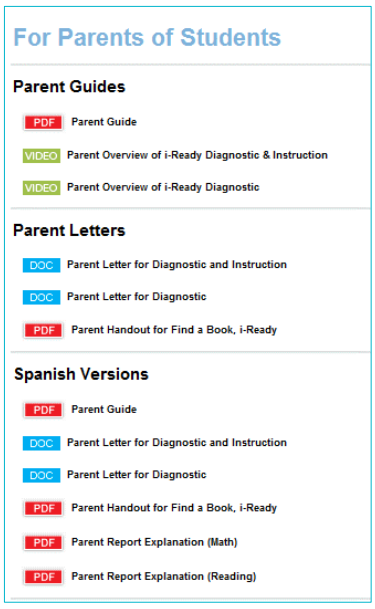
i-Ready Diagnostic & Instruction Standard Reports for Arizona	
Report	**Description**
District Reports	
Needs Analysis by Grade	This report helps administrators determine the domain-specific instructional needs of students in each grade in their district. Also available at the school level. K–12
Performance by Grade and School	The *Performance by Grade and School Report* measures gains within the district by grade and school. K–12
Student Growth by Grade and School	For students who have taken two or more *Diagnostic* assessments, the *Student Growth by Grade and School Report* is available. Growth targets may be set at the district level. This report allows administrators to track student growth between assessments, show what good growth is and whether each grade met targets (or is on track to meet targets), measure progress toward yearly growth targets across the district, and show administrators where to allocate additional resources for more intensive intervention. K–8

"*i-Ready* provides teachers with clear and informative reports that aid in guiding instruction and communicating with parents. The data is at the teacher's fingertips 24/7."—Learning Facilitator

Reports to Parents or Guardians

i-Ready's easy-to-read *Parent Report* helps teachers communicate student performance to parents and guardians in a comprehensible way. A *Parent Letter* and *Parent Guide* that explain the purpose, administration, and results of *i-Ready* are also available in both English and Spanish. These documents are included within the *Resources* tab of the *i-Ready* dashboard (see figure below). Arizona teachers will be able to run *i-Ready Parent Reports* for multiple students at a time.

Images from sample *i-Ready Parent Reports* are provided on the following pages.



i-Ready Diagnostic & Instruction

Parent Report for Rachelle Ahn

Academic year: Current (2012-2013) **Class:** Class Grade 2 (Reading) **Show:** Test 1 - 12/27/12
Select Students by: Class **Student:** Ahn, Rachelle

What Is i-Ready?

i-Ready is an online assessment program focused on reading and math. Rachelle has recently taken the i-Ready assessment at school. This report gives you a snapshot of your child's performance.

Rachelle's Overall Reading Performance

Test	Placement	Scale Score
Test 1 - 12/27/2012	Approaching Level 2	408

On Level

Scale Score 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800

Detail for Test 1 - 12/27/2012

		Rachelle's Performance Levels
	Overall Reading Performance	Approaching Level 2
Domains / Foundational Skills	Phonological Awareness	Approaching Level 2
Domains / Foundational Skills	Phonics	Approaching Level 2
Domains / Foundational Skills	High-Frequency Words	Approaching Level 2
Domains	Vocabulary	Approaching Level 2
Domains	Comprehension: Literature	Approaching Level 2
Domains	Comprehension: Informational Text	Approaching Level 2

Scale Scores and Placement Levels

Scale Scores provide a single, consistent way to measure growth across grade levels and domains. You can use a scale score to compare a student's growth on different administrations of *i-Ready Diagnostic and Instruction*.

Placement Levels are used to guide instruction in the classroom. Placement levels are based on Rachelle's level of performance overall and on each subtest, and they describe the optimum instruction level. The four possible placement levels are:

- Above Level
- At Level
- Approaching Level
- Needs Improvement

Foundational Skills are not assessed for all levels. These subtests are given depending on your child's scores in other domains. Tested Out means that your child did not need to take a particular subtest. Max Score means that your child took the subtest and achieved a high score.

Figure 6. (Here and below) Excerpts from an *i-Ready Parent Report* for reading/ELA, grade 2.

i-Ready Diagnostic & Instruction

Parent Report for Rachelle Ahn

Academic year: Current (2012-2013) **Class:** Class Grade 2 (Reading) **Show:** Test 1 - 12/27/12
Select Students by: Class **Student:** Ahn, Rachelle

What are the Reading Domains?

Phonological Awareness

Phonological Awareness is the understanding that a spoken word is made up of different parts and that each of these parts makes a sound. For example, the word *bat* includes the sounds /b/, /a/, and /t/, and the word *batter* can be broken into two syllables that make the sounds /bat/ and /ter/. Phonological Awareness is an important building block for Phonics. Readers need to be able to distinguish, or make out, the individual sounds in spoken words before they can fully master matching sounds to letters.

Phonics

Phonics instruction teaches children how to connect the sounds they hear in spoken words to the letters they see in written words. For example, a student who can connect sounds to letters knows to read "th" in then as a single sound /th/, rather than the sound /t/ and the sound /h/. Students have to learn many different connections between sounds and spelling patterns. In fact, there are so many connections that learning Phonics can feel like learning the rules to understand a hidden code. But this skill is mastered by taking one step at a time, learning one rule and then another, and so on. Once students can make these connections quickly and easily, they can really start to read for meaning.

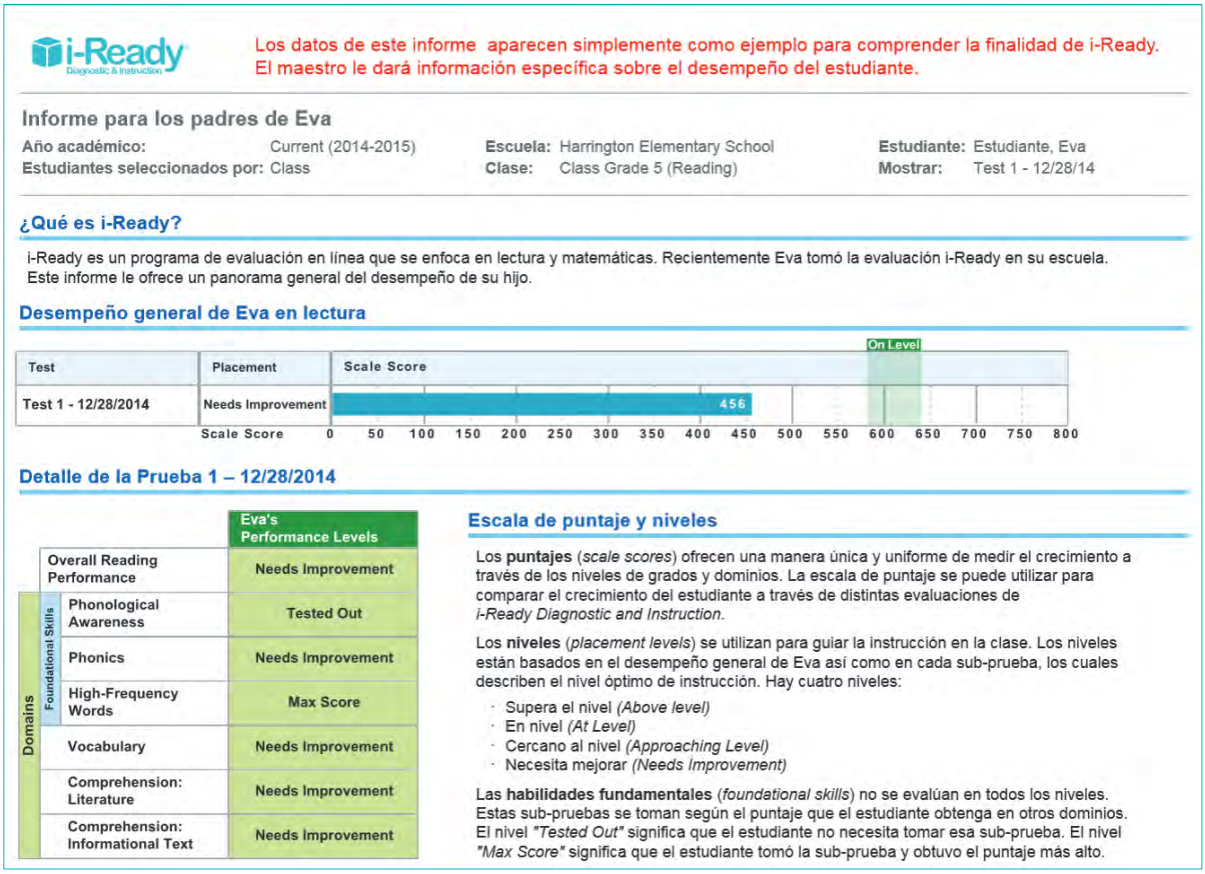
High-Frequency Words

High-Frequency Words are the words that appear most often in what children read. Words such as *the*, *and*, and *it* are high-frequency words. Because these words appear so often, readers must learn to recognize them automatically. Also, these words are often spelled in ways that can be confusing. Words such as *could* and *there* do not follow the rules that connect sounds to letters in most words. Learning to recognize these words automatically helps students read more quickly and easily, which gives them a better opportunity to understand what they are reading.

Vocabulary

Vocabulary is the name for the words a student knows. The more words a student knows, the easier it is to understand what he or she reads. Good readers know the meanings of many words. Students grow their vocabularies by hearing and reading new words, talking about words, and being taught specific words.

The *Parent Report* for each student is available in English only; however, an explanation of the report is available in Spanish from the *Resources* tab of the *i-Ready* teacher/administrator dashboard and is shown in the figure on the next page. Additional parent resources available in Spanish include the *Parent Letter* and the *Parent Guide*.



i-Ready Diagnostic & Instruction

Los datos de este informe aparecen simplemente como ejemplo para comprender la finalidad de i-Ready. El maestro le dará información específica sobre el desempeño del estudiante.

Informe para los padres de Eva

Año académico: Current (2014-2015) **Escuela:** Harrington Elementary School **Estudiante:** Estudiante, Eva
Estudiantes seleccionados por: Class **Clase:** Class Grade 5 (Reading) **Mostrar:** Test 1 - 12/28/14

¿Qué es i-Ready?

i-Ready es un programa de evaluación en línea que se enfoca en lectura y matemáticas. Recientemente Eva tomó la evaluación i-Ready en su escuela. Este informe le ofrece un panorama general del desempeño de su hijo.

Desempeño general de Eva en lectura

Test	Placement	Scale Score
Test 1 - 12/28/2014	Needs Improvement	456

On Level

Scale Score 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800

Detalle de la Prueba 1 – 12/28/2014

		Eva's Performance Levels
	Overall Reading Performance	Needs Improvement
Domains – Foundational Skills	Phonological Awareness	Tested Out
Domains – Foundational Skills	Phonics	Needs Improvement
Domains – Foundational Skills	High-Frequency Words	Max Score
Domains	Vocabulary	Needs Improvement
Domains	Comprehension: Literature	Needs Improvement
Domains	Comprehension: Informational Text	Needs Improvement

Escala de puntaje y niveles

Los **puntajes** (*scale scores*) ofrecen una manera única y uniforme de medir el crecimiento a través de los niveles de grados y dominios. La escala de puntaje se puede utilizar para comparar el crecimiento del estudiante a través de distintas evaluaciones de *i-Ready Diagnostic and Instruction.*

Los **niveles** (*placement levels*) se utilizan para guiar la instrucción en la clase. Los niveles están basados en el desempeño general de Eva así como en cada sub-prueba, los cuales describen el nivel óptimo de instrucción. Hay cuatro niveles:

- Supera el nivel *(Above level)*
- En nivel *(At Level)*
- Cercano al nivel *(Approaching Level)*
- Necesita mejorar *(Needs Improvement)*

Las **habilidades fundamentales** (*foundational skills*) no se evalúan en todos los niveles. Estas sub-pruebas se toman según el puntaje que el estudiante obtenga en otros dominios. El nivel *"Tested Out"* significa que el estudiante no necesita tomar esa sub-prueba. El nivel *"Max Score"* significa que el estudiante tomó la sub-prueba y obtuvo el puntaje más alto.

Figure 7. (Here and on the next page) *i-Ready* offers an explanation of the *Parent Report* in Spanish, available from the *Resources* tab.

i-Ready
Diagnostic & Instruction

Informe para los padres de Eva

Año académico:	Current (2014-2015)	**Escuela:**	Harrington Elementary School	**Estudiante:**	Estudiante, Eva
Estudiantes seleccionados por:	Class	**Clase:**	Class Grade 5 (Reading)	**Mostrar:**	Test 1 - 12/28/14

¿Qué son los dominios de lectura?

Conciencia fonológica
La **conciencia fonológica** (*phonological awareness*) es el entendimiento de que al decir una palabra se unen varias partes que tienen diferentes sonidos. Por ejemplo, la palabra *con* está formada por los sonidos /c/, /o/ y /n/, y la palabra *control* se puede separar en dos sílabas que forman los sonidos /con/ y /trol/. La conciencia fonológica es la base fundamental de la fonología. El lector debe distinguir o separar sonidos individuales de las palabras que escucha antes de dominar la relación entre sonido y letra.

Fonología
La instrucción de la **fonología** (*phonics*) les enseña a los niños a relacionar los sonidos que escuchan con las letras que ven escritas. Por ejemplo, un estudiante que puede relacionar sonidos con letras sabe que en la palabra *artichoke* la combinación *ch* produce el sonido /ch/ en vez de los sonidos /c/ y /h/. Los estudiantes deben aprender muchas relaciones entre sonido y deletreo. De hecho, hay tantas relaciones que la fonología puede parecer el aprendizaje de un código oculto. Pero este dominio se logra paso a paso, regla por regla, y así sucesivamente. Una vez que los estudiantes establezcan la relación rápida y fácilmente podrán comenzar a leer enfocándose en el significado.

Palabras frecuentes
Las **palabras frecuentes** (*high-frequency words*) son aquellas que aparecen muchas veces en los textos que leen los niños. Palabras como *the*, *and* e *it* son palabras de uso frecuente. Como aparecen seguido, el lector debe aprender a reconocerlas automáticamente. Por otra parte, estas palabras suelen tener un deletreo confuso. Palabras como *could* y *there* no siguen las reglas de relación entre sonido y letra de la mayoría de las palabras. Aprender a reconocerlas automáticamente ayudará a los estudiantes a leer más rápido y fácilmente, lo cual les dará una mayor oportunidad de comprender lo que leen.

Vocabulario
El **vocabulario** (*vocabulary*) es el conjunto de palabras que el estudiante sabe. Cuantas más palabras sepa, más fácilmente comprenderá lo que lea. Los buenos lectores saben el significado de muchas palabras. Los estudiantes mejoran su vocabulario escuchando y leyendo palabras nuevas, hablando sobre las palabras y aprendiendo palabras específicas.

In addition to the *Parent Report*, educators may share the more detailed ***Student Profile Report*** during a phone or in-person conference. This report provides a grade-level placement score overall and for each strand, detailed analyses of the sub-skills causing students to struggle, and explicit instructional recommendations based on each student's needs.

Monitoring Progress between Administrations of the Full Diagnostic to Inform Teacher-Led Instructional Refinement and Remediation

i-Ready offers multiple forms of ongoing progress monitoring, including:

- Monthly adaptive *Growth Monitoring* assessments (K–8)
- *i-Ready Standards Mastery* fixed-form assessments (2–8)
- Embedded progress monitoring via the graded quiz at the end of every online lesson, if *i-Ready Instruction* is implemented (K–8)
- Ability to administer the full adaptive *Diagnostic* three times per school year (K–12)

The *i-Ready* license fee **includes** *Growth Monitoring* and *Standards Mastery* assessments as a value-added enhancement. Participating Arizona districts may choose to implement one or both (or neither) of these assessments.

Growth Monitoring, as noted previously, is a General Outcome Measure form of progress monitoring for students in grades K–8; it is intended to be used to project whether students are on track for appropriate growth. For students who are below level, *Growth Monitoring* can be used as a tool for MTSS and RTI.

Standards Mastery for students in grades 2–8 is a Mastery Measurement Form of progress monitoring that is ideal for determining student understanding of each on-grade-level standard before, during, or after instruction. The mini-assessments focus on measuring how well students have mastered the material and identifying potential misconceptions that require targeted instruction. *Standards Mastery* can also be used as unit assessments that can be tailored to the District's scope and sequence and as a tool to support MTSS and RTI.

i-Ready Growth Monitoring

Using *Growth Monitoring* tests in *i-Ready*, teachers and administrators can monitor the progress of students to determine if they are on track to meet annual growth targets. By using the data available in *Growth Monitoring Reports* at the class and student levels, teachers can adjust their instruction strategies or change the level of intervention to ensure students stay on track to meet their targets. *Growth Monitoring* uses all of the data from *i-Ready's Growth Monitoring* and *Diagnostic* assessments to provide the best prediction of where a student will ultimately place at the end of the year. Educators can use these predictions to determine whether or not students are on track to reach growth goals, or if greater levels of intervention are needed.

> ***i-Ready's Growth Monitoring* tests are available for students in chronological grades K–8. These "Growth Checks" have approximately 20 questions and take about 15 minutes per subject. They are adaptive, just like the *Diagnostic*, so they adjust up and down based on the student's responses.**

The first *Growth Monitoring* test starts where the student placed on the *Diagnostic*; subsequent *Growth Monitoring* assessments always start at the last test's levels (whether *Growth Monitoring* or *Diagnostic*). *Growth Monitoring* assessments are automatically assigned to students once a month, though administrators have the ability to adjust the *Growth Monitoring* schedule.

i-Ready generates two reports after students have completed a *Growth Monitoring* assessment—a *Class Report* and a *Student Report* (see figures below). These reports allow the teacher to check how students are progressing against growth targets and to see whether students are on track to make expected growth by the end of the year. If a student is off-track and the trend is not improving, the teacher may need to dig further to find out why and ultimately adjust his or her approach or level of intervention.

Growth Monitoring

Academic year: Current (2012-2013) **Class:** Class Grade 1 (Math)
Select Students by: Class **View:** End of Year Progress Report
School: Harrington Elementary School **End-of-Year Test:** Window 1 - 08/15/2012 - 08/14/2013

Back Print/Save

Class Grade 1 (Math)

Use this report to monitor how your students are progressing against growth targets, and whether your students are on track to meet expected growth by the end of the year (EOY).

Summary

		Target Growth		Average Grade-Level Growth		On/Above Grade Level			
Name	Average End of Year Scale Score	Average Scale Score Target	% Students who Met Target	Average Scale Score to make Growth	% Students who Met Growth	Average Scale Score to be On Level	% Students On/Above Grade Level	Number of Students in Summary	Total Students
Class Grade 1	N/A	467	0%	461	0%	416	0%	40	40

Student Detail

		Target Growth		Average Grade-Level Growth		On/Above Grade Level		
Student Name	End of Year Scale Score	Scale Score Target	Met Target	Scale Score to make Growth	Met Growth	Scale Score to be On Level	On/Above Grade Level	End of Year Assessment Date
Afridi, Tia	More Data Required	348	More Data Required	343	More Data Required	416	More Data Required	N/A
Agarwal, Angeline	More Data Required	335	More Data Required	330	More Data Required	416	More Data Required	N/A
Bailey, Diedre	More Data Required	447	More Data Required	442	More Data Required	416	More Data Required	N/A
Batie, Jorge	More Data Required	371	More Data Required	366	More Data Required	416	More Data Required	N/A
DeCruz, Glen	More Data Required	414	More Data Required	409	More Data Required	416	More Data Required	N/A

Figure 8. Onscreen excerpt of a *Class Growth Monitoring Report* for math.

Once the teacher identifies students who are not on track for meeting end of year growth targets, he or she can take steps to plan instructional adjustment to get students back on track.

This can include: scheduling adjustments for time spent in teacher-led or online instruction; moving a student to a different instructional group or intervention level; assigning specialists or students to specific intervention programs; and/or allocating specific curriculum tools and resources to schools or classes based on level of student need.

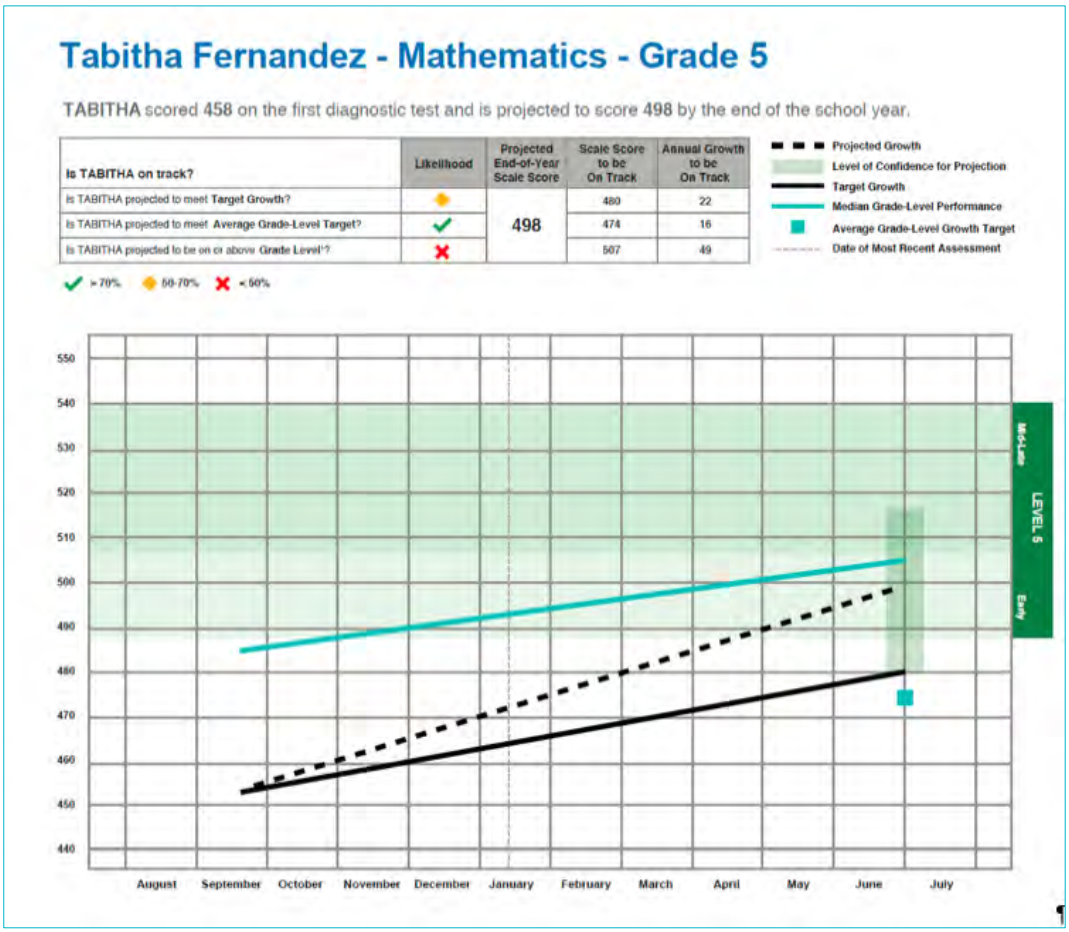
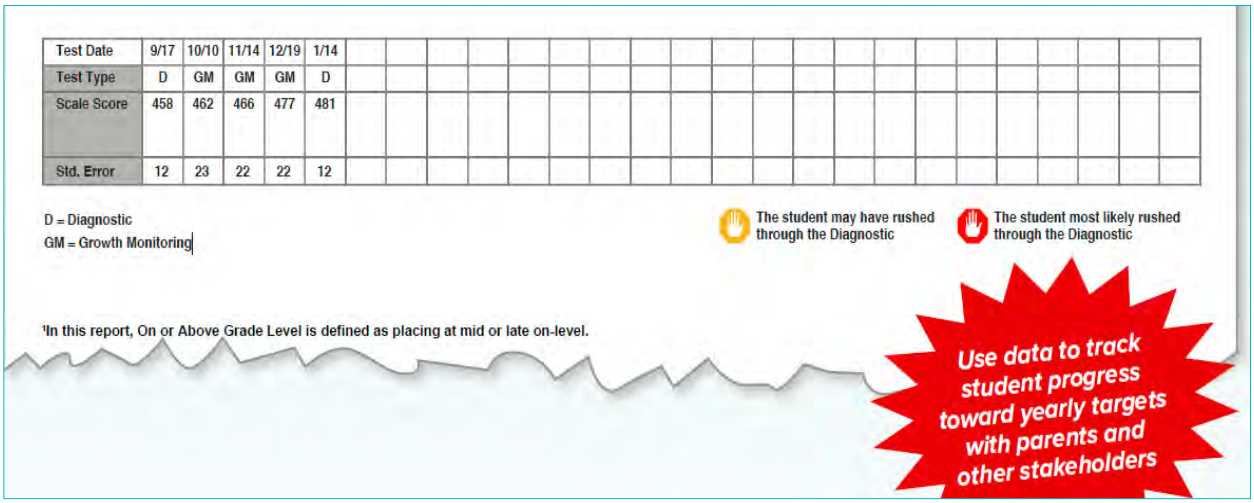


Figure 9. (Here and below) Excerpts from a sample *Growth Monitoring Report* for math.



Test Date	9/17	10/10	11/14	12/19	1/14
Test Type	D	GM	GM	GM	D
Scale Score	458	462	466	477	481
Std. Error	12	23	22	22	12

D = Diagnostic
GM = Growth Monitoring

The student may have rushed through the Diagnostic

The student most likely rushed through the Diagnostic

[1]In this report, On or Above Grade Level is defined as placing at mid or late on-level.

Use data to track student progress toward yearly targets with parents and other stakeholders

i-Ready Standards Mastery

i-Ready Standards Mastery assessments for students in grades 2–8, reading and mathematics, allow teachers to regularly monitor specific Common Core standards. This tool makes it easy to obtain regular formative and benchmark information on standards mastery as students progress in curriculum throughout the year. Included with purchase of *i-Ready Diagnostic*, ADE/participating districts may choose whether or not to implement *Standards Mastery* and/or *Growth Monitoring* assessments.

The district may choose to assess individual standards or groups of standards. *Standards Mastery* assessments map to schools' unique scope and sequence, allowing the District to assess mastery of the standards just covered in class. Administrators and teachers can quickly identify when re-teaching or remediation is needed.

A wide range of technology-enhanced items build comfort and familiarity with the types of items students will see on the state tests.

i-Ready Standards Mastery includes a blend of constructed-response, open-ended response, and selected-response items; a broad range of media with embedded audio, video, and imagery, plus a wide variety of complex, authentic texts; and a diverse spectrum of question formats, including constructing graphs, writing equations, and highlighting texts.

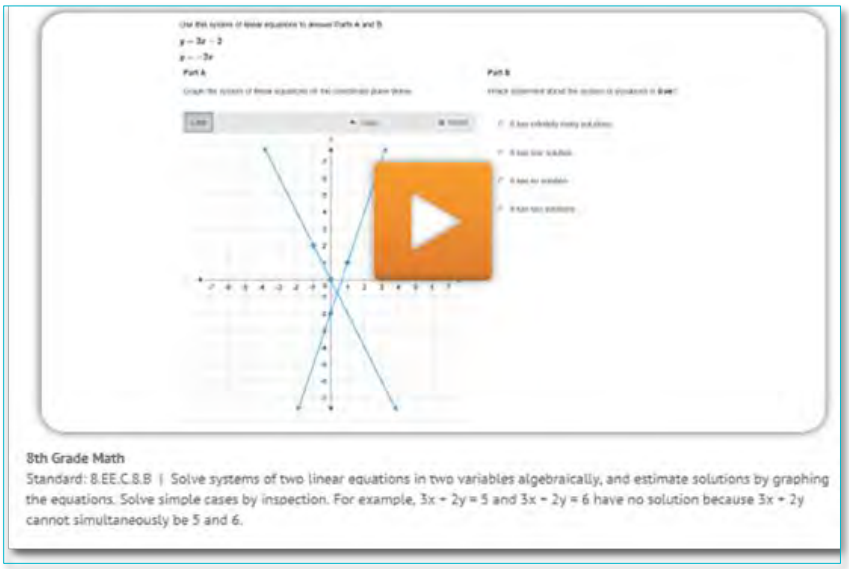
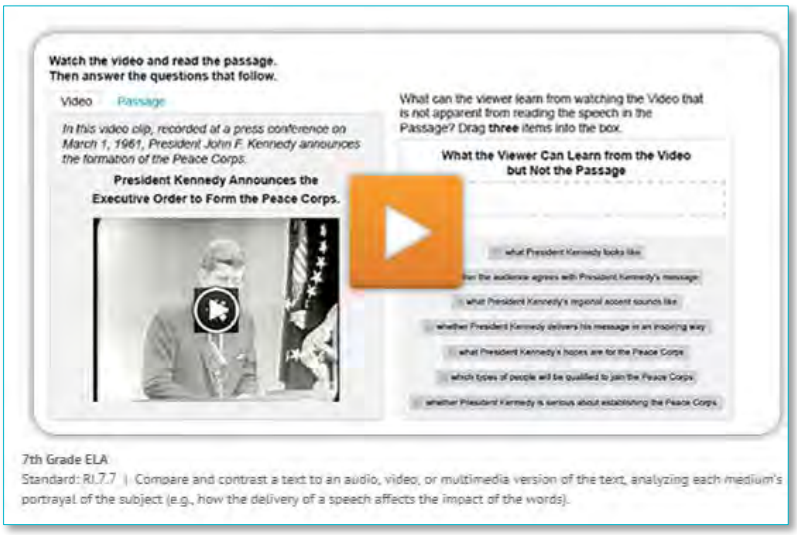
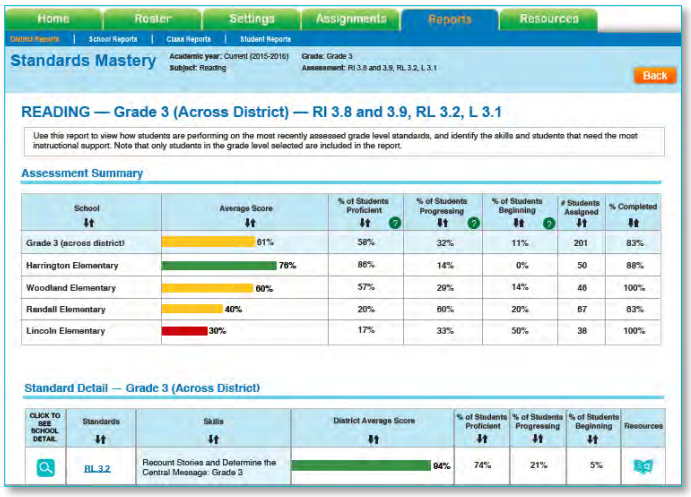


Figure 10. (Here and on the next page) See sample *i-Ready Standards Mastery* items at: http://www.curriculumassociates.com/products/iready/i-ready-standards-mastery.aspx.



Standards Mastery offers a suite of intuitive, teacher-friendly reports. Each of these reports provides a useful view into students' mastery of the standards and ultimately can help guide remediation, reteaching, and/or enrichment efforts.

- ***Standards Mastery Report***—Available for the district, school, grade, and class or instructional group, this report (see figure at right) shows student performance on the most recently assigned assessment. Performance is broken down by the percent of students reaching proficiency on the standards covered, as well as average scores for the assessment.



- ***Standards Performance Year-to-Date Report***—This report provides an aggregated year-to-date view of standards mastery for specific groups of students (available at the district, school, grade, and class or instructional group levels). Educators can use this report to track student progress on grade-level standards over the course of the school year.
- ***Item Analysis Report***—The student-level version of this new report is now available. It provides item-level information to show teachers where students have the greatest gaps toward mastering a given standard. Teachers can view an individual student's responses on the assessment, the correct response for each item, and guidance on interpreting the student's responses to inform future instruction.

The class-level version of this report will show students in a class or instructional group and their performance on the individual questions of a given assessment. In addition to a summary of their performance, this report will also help teachers identify common errors and misconceptions to guide future teaching.

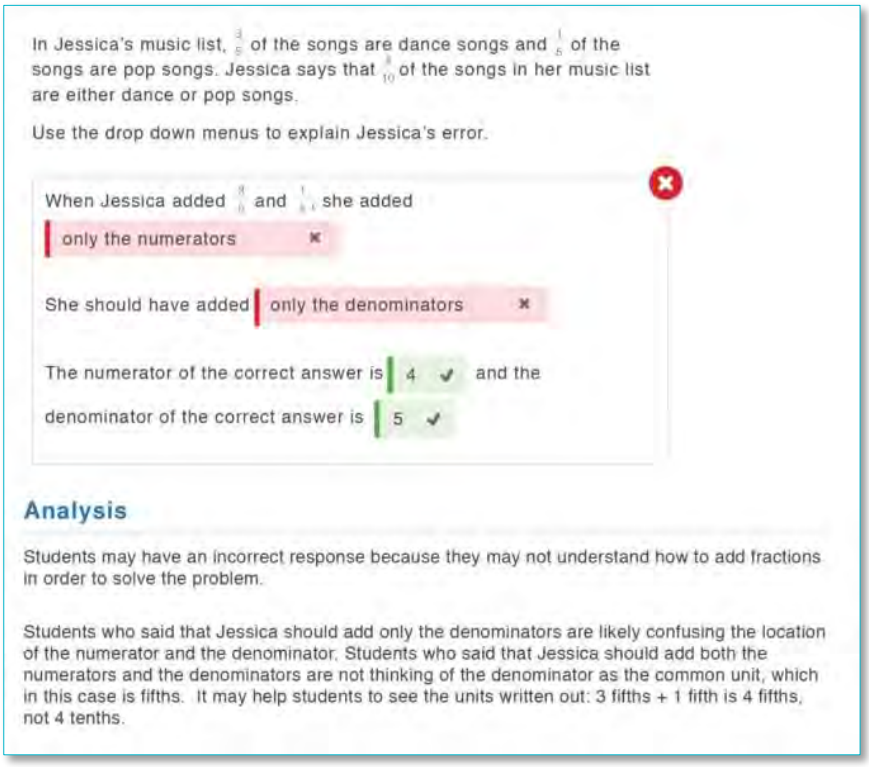


Figure 11. Sample grade 4 item from *i-Ready Standards Mastery* tests, showing analysis of the student's response.

Standards Mastery reports include resources to further support differentiated instruction. *Differentiated Instructional Resources* provide targeted instructional information and recommended resources for each standard or substandard(s) covered within an *i-Ready Standards Mastery* assessment form. Clicking on the "Resources" icon on any report will access this information. These documents identify resources for teacher-led and student-led small groups—as well as individualized, independent learning to reteach, reinforce skills, and enrich students performing at different levels.

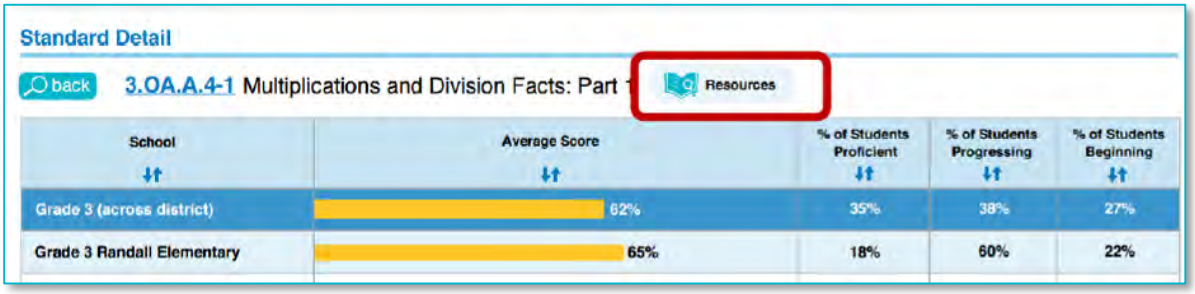


Figure 12. Sample of *i-Ready Standards Mastery*: *Differentiated Instructional Resources*.

Information in the *Instructional Resources* documents is always organized in the same way. Each resource link provides overview information to aid in deepening teachers understanding of the standards, prior to detailing specific recommended instructional resources. This introductory section includes:

- The full text of the **assessed grade-level standard**(s) and/or substandard(s)
- The full text of **prerequisite standards** as a learning progression for on-level mastery and, as needed, information about additional skill development necessary to master the grade-level standard
- An **overview of tested skills** with specific information on what students need to be able to do to answer assessment items correctly, and as needed, prerequisite skills that students must be familiar with to be successful
- **Common misconceptions and errors** that can be stumbling blocks for understanding and application of the skills or concepts covered by the assessed standard

This information can be helpful in developing objectives and/or essential questions when planning differentiated instruction, in providing insights into student thinking, as a starting point for discussion and questioning, and to informally evaluate student understanding.

Following the overview section, each *Differentiated Instructional Resources* document recommends standard-specific instructional resources for students who have placed on or above level and for students who have placed one or more grade levels below given performance on *i-Ready Diagnostic*. Recommended instructional resources are accessed through *i-Ready Tools for Instruction* on the *Resource*s tab, *i-Ready Instruction* online lessons, or *i-Ready's* mobile practice apps for the iPad, *Door 24® Plus* and *World's Worst Pet®*.

> ***i-Ready Standards Mastery* is the perfect complement to the *i-Ready Diagnostic*. The combined program provides the best of both worlds—the assessment provides a powerful adaptive diagnostic, growth measure, and predictive tool. *Standards Mastery* provides flexible, user-controlled, fixed-form assessments that allow quick and targeted evaluation of specific standards.**

Embedded Progress Monitoring

If online instruction *(i-Ready Instruction)* is implemented, *i-Ready* also provides **embedded progress monitoring**. The final portion of each online lesson is a short quiz designed to assess students' understanding of the focus skill of that lesson. Results from this assessment populate the *Response to Instruction Reports*, available at the student and class levels. These reports help teachers assess the effectiveness of the instruction.

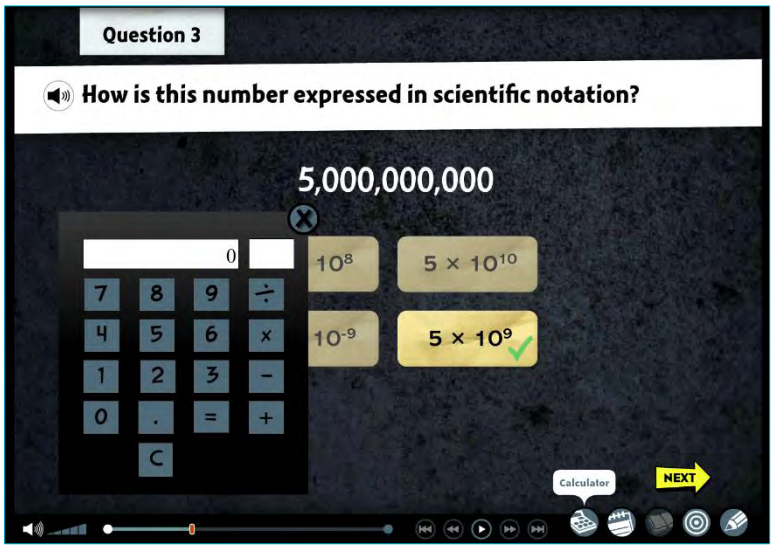
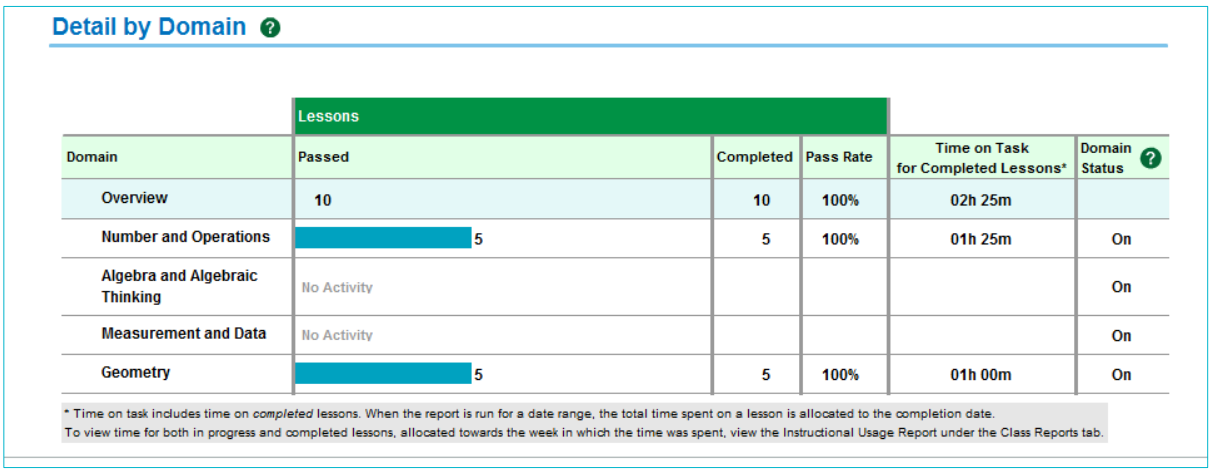


Figure 13. At the end of *i-Ready Instruction* modules, a quiz assesses the student's knowledge of related math skills. This grade 8 quiz covers Scientific Notation (Number and Operations domain). The student can use an online calculator, accessed through a button on screen, to help solve the equation.



Detail by Domain

	Lessons				
Domain	Passed	Completed	Pass Rate	Time on Task for Completed Lessons*	Domain Status
Overview	10	10	100%	02h 25m	
Number and Operations	5	5	100%	01h 25m	On
Algebra and Algebraic Thinking	No Activity				On
Measurement and Data	No Activity				On
Geometry	5	5	100%	01h 00m	On

* Time on task includes time on *completed* lessons. When the report is run for a date range, the total time spent on a lesson is allocated to the completion date.
To view time for both in progress and completed lessons, allocated towards the week in which the time was spent, view the Instructional Usage Report under the Class Reports tab.

Figure 14. This detail from the *Student Response to Instruction Report* shows which instructional modules the student has completed, his/her pass rate, and time-on-task.

Connecting Valid and Reliable Data to Differentiated Teacher-Led, Online, and Mobile Instruction

An essential part of effective instruction is being able to answer the questions: "Which of my students are struggling?" and "What are their specific areas of need?" Even more critical are answers to "*Why* are some students struggling?", "What specific instructional plans will increase their achievement?", and "How can I keep them engaged in the learning process?"

i-Ready provides these answers and prescribes an individualized plan for instruction based on each student's performance on the *Diagnostic*. This plan includes step-by-step lesson plans for teacher-led instruction, assignments for automated online instruction in *i-Ready Instruction*, meaningful practice with mobile apps, and recommendations for specific lessons within the family of Curriculum Associates' supplemental print programs(available separately for an additional cost).

Teacher-Led Differentiated Instruction

i-Ready's comprehensive reports synthesize enormous amounts of data, assisting teachers in truly differentiating instruction and providing each student what he or she needs to progress to the next level. As depicted in the figure below, the detail pages of the *Student Profile Report* include specific Next Steps for Instruction—the next skills in a developmental progression that students need to master.

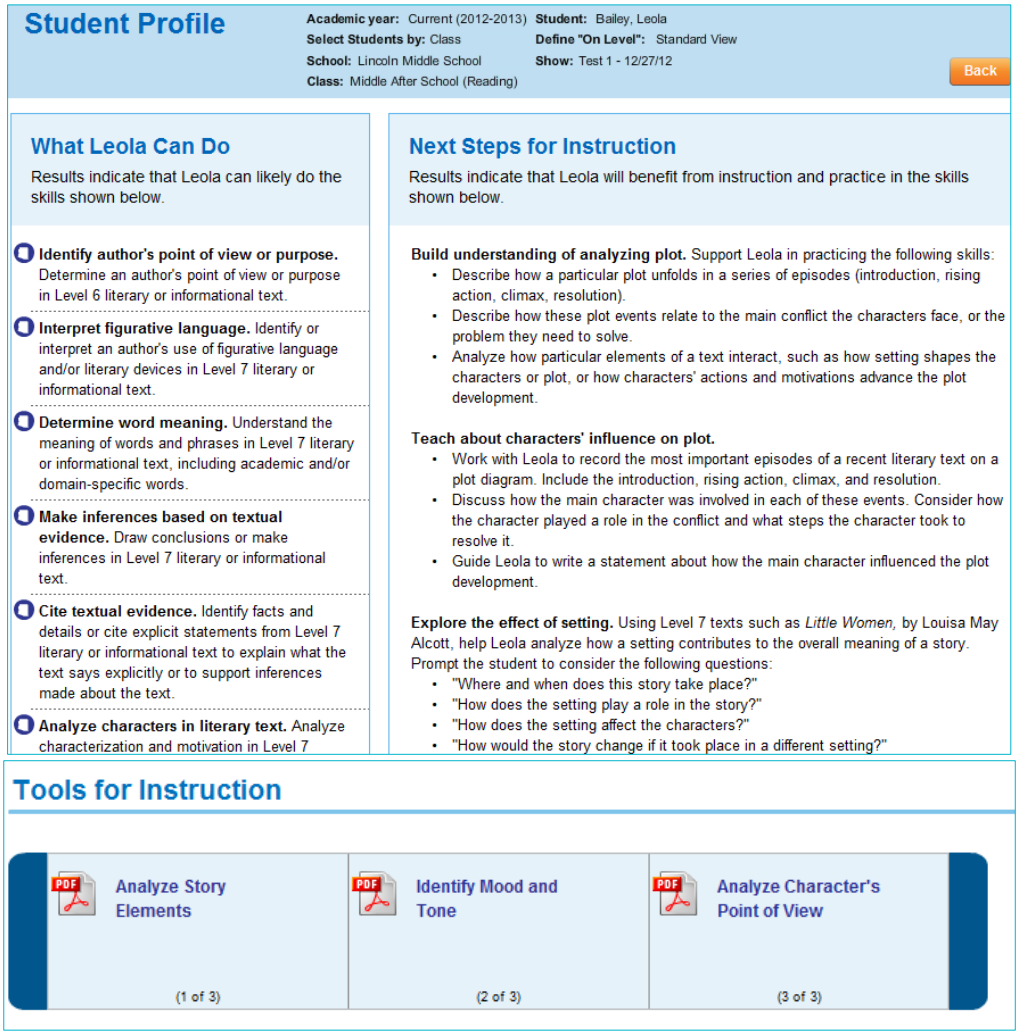


Figure 15. This excerpt from the detail pages of a sample *Student Profile Report* for reading shows the streamlined—yet informative—presentation of Next Steps for Instruction.

"Excellent resource - the student profile reports provide helpful information for teachers, parents, and support staff. Thank you!" —Educator

Teachers use the *Instructional Grouping Profile Report* to group students who are struggling with similar skills, to understand exactly which skills they need to develop, and for guidance in how to address those shared instructional needs.

Instructional Priorities for Profile 1

Number–Base Ten

- Round whole numbers to the nearest ten or hundred.
- Add and subtract multi-digit numbers with regrouping.
- Multiply and divide within 100.
- Multiply single-digit numbers by 10 and by multiples of 10.

Students who struggle with operations involving regrouping often lack the conceptual understanding that drives the algorithms. These students may benefit from working with concrete or visual models in order to focus on the place value concepts behind the process. Once students understand why the process works, they can be guided to see the relationship between the models and the algorithms, and eventually use the algorithm alone.

Number–Fractions

- Use fractions to name parts of a whole or set.
- Show fractions on a number line.
- Use models to show equivalent fractions.
- Express fractions with denominators of 10 or 100 as decimals.
- Decompose a fraction into a sum of fractions with like denominators.
- Add and subtract fractions with like denominators.

Challenges with fractions often relate to not understanding how fraction notation represents a part or multiple parts of a whole or a set. Be sure students read fraction names appropriately (*two thirds* rather than *two over three*) and understand that, for example, *two thirds* means *two copies of one third*. This provides the basis for understanding fractions greater than 1 as well as for later adding and subtracting unlike fractions. Give students repeated opportunities to practice representing fractions and equivalent fractions on a number line, with a variety of models (fraction strips for parts of a whole, counters for parts of a set), and with fraction notation.

Algebraic Thinking

- Write multiplication sentences to represent equal groups and repeated addition.
- Solve problems involving partitioning in equal groups, including identifying the remainder.
- Solve problems involving sharing equal groups, including identifying the remainder.
- Know multiplication/division fact families.

Students at this stage will likely benefit from reviewing the basic concept of multiplication and division. Present both the repeated addition model and the array model since both of these will become useful in different word problem situations. Having a very solid conceptual foundation will help students apply strategies that will develop fact fluency, while fact fluency will also help them apply concepts to solve word problems. While students are still developing their conceptual understandings, be sure to use small numbers that represent easy-to-grasp quantities in discussion examples as well as in independent work. Present problems involving larger one-digit numbers only when students are more confident of the concepts.

Fluency

- Know multiplication and division facts through 100.

The students in this group may have difficulty recalling basic multiplication facts. Discuss with them strategies for remembering facts, or recalling facts based on other known facts, such as that the 4s are simply the 2s two times. Give students smaller goals for remembering facts, starting first with 1s, 2s, 5s, and 10s, then moving on to the more difficult-to-recall facts. Remind students that once they know one fact in a family, they can use that fact to recall the other facts in the family. Use a table to illustrate that the commutative property reduces the number of facts that need to be memorized. Provide daily practice as necessary. Have each student keep a personal record of which facts they know and which they still need to learn.

Profile 1 Tools for Instruction

- Know Division Facts
- Add Multi-Digit Numbers
- Subtract Multi-Digit Numbers
- Multiply by One-Digit Numbers

Figure 16. Excerpt of an *Instructional Grouping Profile Report* for math, showing the instructional priorities for Profile 1 and the targeted lesson plans provided at point-of-use to address those instructional needs.

"I love that so much information is made available to teachers, students and parents...*i-Ready* is incredibly helpful in differentiating instruction. The diagnostic information is very specific and individualized. I love that the reports tell me what the student can do and what he should focus on, as well as the next steps with resources to help teacher target instruction. Overall, this is data that helps drive instruction! So exciting."—Educator

Both the *Student Profile Report* and the *Instructional Grouping Report* include downloadable *Tools for Instruction* (available for students performing at or below grade 8). These provide step-by-step lesson plans, complete with background on the targeted skill, a variety of ways to approach teaching or reinforcing the skill, and how to identify and remedy common student misconceptions.

The *Tools for Instruction* support teachers in delivering targeted individual, small group, and whole-class instruction by:

- Addressing each skill's importance and common areas of difficulty for students
- Providing a walkthrough with scripting for teachers unfamiliar with the skill and suggestions for different approaches for veteran teachers
- Reinforcing skills learned in *i-Ready Instruction*
- Working with common classroom materials

To view samples of *Tools for Instruction*, please go to www.i-ready.com/empower.

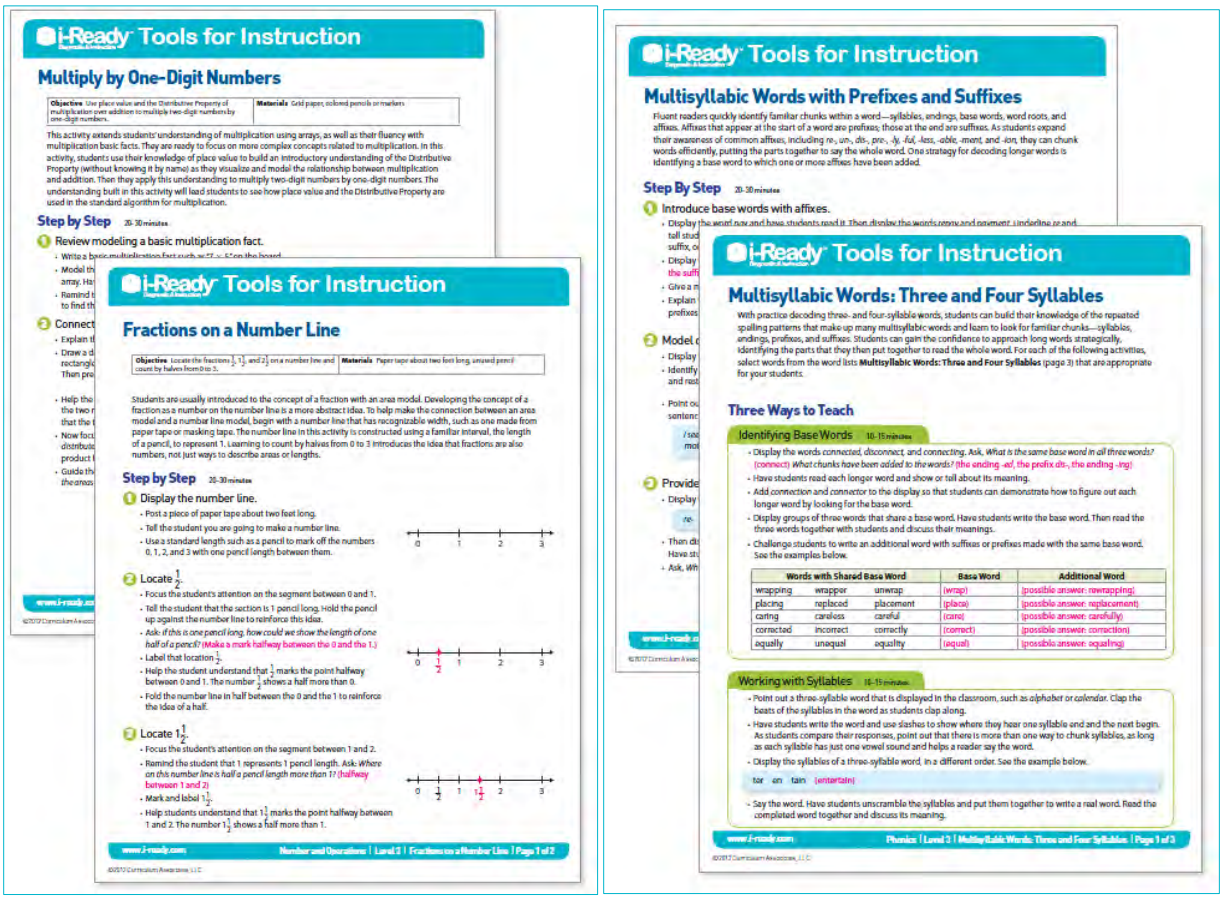


Figure 17. *Tools for Instruction* guide teacher-led lessons that relate directly to the skills assessed in *i-Ready Diagnostic*. These resources help to focus instruction on areas of need, to drive student growth.

Engaging and Targeted Online Learning with *i-Ready Instruction*

Once each student has completed his or her first *Diagnostic* assessment, *i-Ready Instruction* builds a unique lesson plan consisting of online instructional lessons based on test performance, with a personalized starting point for every student. The teacher may adjust any student's position within the recommended sequence of lessons, and/or may add extra lessons for students to ensure they develop skills in conjunction with the core curriculum.

Once the student completes a subsequent *Diagnostic* assessment, ***i-Ready* automatically adjusts the student's position within the recommended sequence of lessons based on his or her most recent *Diagnostic* results**. *i-Ready Instruction* placement also takes into account the student's recent lesson progress. Any extra lessons assigned by the teacher will remain part of the student's lesson plan.

The depth of the *Diagnostic* identifies specific areas of weakness, and the instructional modules target those particular skills. *i-Ready* meets students in their zone of proximal development, providing the guidance and scaffolding they need to advance. *i-Ready Instruction* lessons span grades K–8 in reading/language arts and mathematics.

We built *i-Ready Instruction* by employing best practices for instruction, including:

- Highly interactive lessons that keep students focused and engaged in their own learning
- Many lessons that are themed, to draw students into a story and give them a purpose for learning a particular concept
- Onscreen characters who are modern, diverse, appealing, and easy for students to relate to
- A number of lessons that embed games, which become the basis of learning a new concept

Delivery is flexible: during school, before/after school, in-class/pull-out, summer school, at home, computer lab, and a host of other settings. We recommend that the differentiated online instruction be used for a minimum of 45 minutes per week per subject. Our analysis of *i-Ready* data found that students using *i-Ready Instruction* for at least 45 minutes per week showed significantly greater gains over average student growth—on average, 44 percent higher reading scores and 65 percent higher math scores than students who had no (or low) *i-Ready Instruction*.

Online lesson modules take students an average of 10–40 minutes to complete, depending on the grade level. All grades 3–8 lessons have resume functionality, so students may complete them in more than one sitting. Close Reading lessons will take at least 75 minutes to complete. (These lessons are chunked into three parts, so students may complete them over multiple sessions.)

In addition to online instruction, we recommend teachers use the downloadable *Tools for Instruction* lesson plans regularly during small-group instruction time. These best-practice, teacher-led lessons take 10–40 minutes each.

Diverse, contemporary characters and settings capture students' attention and immediately engage them in the learning process. These characters also appear in the *Diagnostic* assessment, helping students draw connections between what they learn and what they see on a test. Lessons use real-world experiences and authentic situations to teach essential skills.

Each module includes explicit instruction, guided practice, and a short quiz for progress monitoring purposes. The first portion of each lesson explains the topic and encourages students to draw upon prior knowledge. The explicit instruction includes modeling the skill in real-world scenarios that engage students. Next, students are asked to practice the new skill.

"I have 17 students, with special needs, on varying levels of ability. *i-Ready* helps me differentiate instruction to eight different levels of needs...now I can focus on one or two students at a time while every other student is learning and practicing with great *i-Ready* instructional resources."— Educator

As a part of the scaffolded instruction in *i-Ready Instruction*, students receive immediate corrective feedback that is specific and purposeful. They are told why their answers are correct or incorrect without fear of judgment or penalty. While each domain contains its own lessons, many lessons help students develop and practice skills connected to various domains. The two examples below include Making Inferences about Informational Text and Dividing Fractions.

1. **Explicit Instruction**: Each lesson begins with automated instruction that directly targets the priorities identified by the diagnostic assessment. *i-Ready Instruction* teaches skills through engaging characters and real-world scenarios.

2. **Guided Practice**: Once students have been taught a skill, they practice what they have learned and receive corrective feedback to reinforce their conceptual understanding.

3. **Embedded Progress Monitoring**: Students are assessed at the end of each lesson. As soon as they complete the module's grades quiz, their results populate *i-Ready*'s Response to Instruction Reports (available at the student and class levels).

Figure 18. *i-Ready* lessons offer students explicit instruction before asking them to practice the skill and demonstrate mastery.

Because student motivation is essential to maintaining engagement, *i-Ready* builds on existing knowledge to teach new concepts, boost confidence, and encourage learners of all levels and learning styles. The result of this targeted and engaging instruction is that students quickly learn the foundational skills required to move up to grade level or beyond.

Mobile Apps Provide Stimulating, Purposeful Practice

The highly engaging and pedagogical *World's Worst Pet* and *Door 24 Plus* apps for the iPad are available for download in the App Store. These easy-to-use apps align with the Common Core, require minimal direction and intervention from teachers or parents, and offer fun and purposeful practice and challenge in reading vocabulary, fact fluency, and computational fluency.

A recipient of *Creative Child Magazine's* 2014 App of the Year Award in the Educational Game Apps category, *Door 24 Plus* is a mathematical fluency app that harnesses the power of game design to help develop grades 1–8 students' skills in both fact fluency and computational fluency.

The app contains lower-level content to support students who need help with basic fact fluency, as well as upper-level content to help develop computational fluency—supporting students' abilities to think quantitatively and strategically:

- The fact fluency game develops automaticity with basic math facts in all four operations (addition, subtraction, multiplication, and division). Students gain repeated exposure to foundational math facts via spiral review.

- The computational fluency game develops students' abilities to think quantitatively and strategically, while encouraging flexibility and perseverance in solving problems (number sense, computational fluency, expressions, equations, and algebraic thinking.)

A winner of the 2014 Parents' Choice Recommended Award in the Mobile Apps category, ranked as a Top 25 Education App on the App Store, featured as iTunes® Best New Education App, and named "App of the Week" by *eSchool News,* the *World's Worst Pet* app delivers multiple exposures to academic vocabulary that appears across a wide range of texts, as well as domain-specific science and social studies vocabulary. Throughout the game, rewards and feedback are provided to motivate students to think carefully about the meaning of each word and its relationship to other words.

As they solve vocabulary challenges and advance in the game, students develop comprehension of Tier 2 vocabulary:

- Encountering a word multiple times in a single level
- Identifying meaning from context
- Exploring the meanings of a word
- Exploring word relationships such as synonyms and antonyms

Supplemental Support with Other Curriculum Associates' Programs

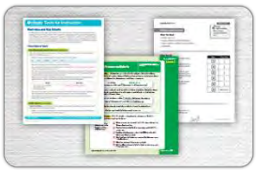
The *Student Profile Report* and *Instructional Grouping Report* provide direction for using Curriculum Associates' supplemental programs—such as *Ready®* or the online *Ready Teacher Toolbox*—to augment the assessment and instruction provided in *i-Ready*. Available as a cost option, this connection helps educators leverage the power of other resources that may be available to them in the classroom, by providing specific references to lessons that would be of particular benefit to students based on their *i-Ready Diagnostic* results.

The PDF instructional resources, digital tutorials, and interactive whiteboard lessons in the online *Ready Teacher Toolbox* further support the learning environment by employing a proven effective gradual-release methodology that ensures students receive the modeled and guided instruction they need to build confidence in and mastery of the standards. *Ready* lessons can be used during whole-class or small-group instruction as a core component for grade-level instruction in reading or math, as well as offering additional opportunities for differentiation, introducing new concepts, and reteaching specific standards.

The easy-to-use *Teacher Toolbox* is a virtual filing cabinet of K–8 instructional resources for reading, writing, and mathematics (each subject sold separately) that provides immediate access to detailed lesson plans and digital tutorials for students performing below, on, or above grade level.

- *Ready* lessons for grades K–8 make it easy for teachers to focus on particular skills or reteach skills that students may not have mastered at earlier grade levels. The *Teacher Toolbox* provides educators with instant access to reading (K–8), writing (2–5), and mathematics (K–8) lessons (depending on which subjects the District purchases). The *Teacher Toolbox* Includes digital access for teachers to both student lessons as well as the *Teacher Resource Book* with step-by-step lesson plans.

- Interactive whiteboard lessons provide the whole class or small groups with highly engaging online instruction and practice. Students learn a skill or concept through highly interactive, scaffolded, and explicit instruction. All lessons follow a consistent best-practice lesson structure. Students practice what they have learned and receive corrective feedback to reinforce their understanding.



- Additional resources may be used with any interactive whiteboard or projection device and immediately begin to enrich classroom discussions and provide engaging differentiated instruction. These include alternative teaching strategies for challenging standards, reinforcing concepts with hands-on activities and games, and additional practice opportunities for students to develop conceptual understanding.

The comprehensive implementation model combining the *Teacher Toolbox* with *i-Ready Diagnostic & Instruction*:

- **Diagnostic and Growth Assessment**: Administer the *i-Ready Diagnostic* three times per year to gain detailed insight into student needs and inform both online and teacher-led instruction.
- **Personalized Learning**: Based on the results of the *Diagnostic*, *i-Ready* automatically places students into online instruction customized to their placement levels. *i-Ready Instruction* provides highly scaffolded, interactive lessons that allow students to work independently.
- **Small-Group Differentiation**: Use *Ready Teacher Toolbox* to access a host of multi-level resources for teacher- and student-led small group differentiation and instructional rotations.
- **Independent Instruction, Practice, and Homework**: Use *i-Ready Instruction*, mobile apps for the iPad, and printable resources from the *Ready Teacher Toolbox*.

- **Growth and Progress Monitoring**: Track student progress via *Ready Assessments* downloaded from the *Teacher Toolbox*, plus *i-Ready's* web-based *Diagnostic*, interim *Growth Monitoring*, and embedded progress monitoring.
- **Standards Mastery Monitoring**: Administer *i-Ready's Standards Mastery* assessments for regular, flexible monitoring of specific standards, to obtain formative and benchmark information on standards mastery and quickly identify when reteaching or remediation is needed as students progress throughout the year.

A COMMITMENT TO ONGOING PROGRAM ENHANCEMENTS

At no additional charge, Arizona users will also have access to significant additions and enhancements to *i-Ready* programs as they become available throughout the active license term. These new offerings and updates will further enhance student engagement, increase instructional impact, and make teachers' lives easier. This constant innovation is in the service of meeting our mission to help students grow and succeed.

A new ***i-Ready* student dashboard** will be available in July 2016, with iPad access available in September 2016. *i-Ready's* student-centered dashboard is designed to advance student engagement and empower students to understand their learning path. Built to promote metacognition and provide students increased visibility into their learning, this updated interface will incorporate best practices in motivational design to encourage students to spend more time learning and growing their skills in *i-Ready*. The new dashboard is personalized by age segment (K–2, 3–5, 6–8) so that it is age appropriate for all students. Over the course of the 2016–17 school year, additional releases will enhance ways for students to visualize their progress and promote student investment in their academic growth.

i-Ready currently supports math fluency and vocabulary practice through practice apps for the iPad. Starting in fall 2016, *i-Ready* will begin phasing in **assessment and instruction on the iPad**, with releases to follow on select additional tablet devices. In September 2016, *i-Ready* will launch an all-new HTML5 student dashboard (noted above) along with iPad access to *Standards Mastery* assessments. In late 2016 and early 2017, *i-Ready* will have many lessons for grades K–5 ELA and grades K–2 math available on iPads. Releases will continue throughout 2017 and 2018 to expand the range of content and grade levels supported to offer a more comprehensive solution for districts that use iPads and tablets. This content will be available on tablets, Chromebooks®, and computers, enabling *i-Ready* users to optimize student access regardless of district device distribution.

New K–2 ELA lesson releases will begin in late 2016. *i-Ready's* completely new grades K–2 interactive digital ELA lessons help develop students into fluent, thoughtful analytic readers. The new program includes work in Phonological Awareness, Phonics, High-Frequency Words, Reading Comprehension, and Vocabulary. Developed with the input of leading ELA researchers and experts in student experience, these lessons will help educators support diverse student needs with engaging, interactive instruction:

- Built to meet the rigor of the College and Career Readiness Standards.

- Lessons embed skills in engaging, real-world contexts, hosted by new animated characters designed to motivate both younger and older readers.
- Extensive, systematic practice supports students, particularly struggling readers.
- Supports English language learners and older struggling readers through multiple approaches to learning phonics—which research shows produces better results.
- Lessons relate Foundational Skills to texts so that students understand the connection to reading.
- Culturally diverse "texts worth reading" and real-world photographs engage a wide range of students.
- Engaging texts and animations reinforce oral language and build vocabulary.
- Enables students to use iPads for all new instruction and practice.

Figure 19. Lessons are introduced by Plory and Yoop, new animated characters designed to motivate both younger and older learners.

New K–2 mathematics lessons will begin in early 2017. *i-Ready's* new lessons for grades K–2 will deliver rigorous instruction that engages students across a broad range of ages. The new interactive lessons will build deeper conceptual understanding, support productive struggle, and provide comprehensive coverage of the standards. Designed with input from leading math researchers and student engagement experts, the new program expands *i-Ready's* instructional and practice hours:

- Built from scratch for the new College and Career Readiness Standards.
- Breaks standards into sub-skills for a deeper dive into each standard.
- Supports productive struggle by providing feedback that helps students understand how to solve problems correctly and encourages students to try again when an answer is incorrect.
- Incorporates a variety of digital tools and mathematical models, helping prepare students for new question types commonly used in digital assessments.
- Enables students to use iPads for all new instruction and practice.

Figure 20. Students explore new mathematical concepts through the use of math tools and engaging interactions.

RESEARCH-BASED AND PROVEN EFFECTIVE AT MEASURING—AND MEASURABLY ADVANCING—STUDENT ACHIEVEMENT

In designing and developing *i-Ready,* we have followed guidelines outlined by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education for best practices in assessment development. Based on these guidelines, *i-Ready* assessment items have been field tested for validity and reliability with more than two million students across representative socioeconomic, geographic, and ethnic strata.

> ***i-Ready* demonstrates an exemplary standard of validity and reliability—at the item level, not just the test as a whole. (Documentation of *i-Ready's* research base is available at www.i-ready.com/research.)**

Across all program components, our efforts are led by expert advisors, including renowned authorities in psychometrics, reading, mathematics, Special Education, English language learner education, and teacher preparation.

i-Ready Diagnostic is proven to predict proficiency. As evidence, we present the *i-Ready Diagnostic* New York State (NYS) Validity Study, Report Number 472, September 2013, conducted by the independent Educational Research Institute of America (ERIA) and available upon request (or read the executive summary online at http://www.curriculumassociates.com/lp/i-Readyreport-form.aspx). The purpose of this study was to examine how *i-Ready* supports students in states choosing to assess the Common Core. **Though we recognize that Arizona is not a Common Core state, this study is relevant because it speaks to the rigor and quality of the design and items.**

The study compared *i-Ready* end-of-year diagnostic scores in reading and mathematics to the actual 2013 New York State English language arts and mathematics scores of the same students. 6,500 students in grades 3–8 from 22 schools across five districts were included in the study. The results showed that the *i-Ready Diagnostic* scores and the NYS ELA and mathematics scores were highly correlated.

Regression analyses provided solid evidence that *i-Ready Diagnostic* scores were statistically significant predictors of end-of-year NYS ELA and mathematics scores at grades 3–8. The correlations ranged from .77 to .85 across grades and subjects.

These strong correlations mean that educators can confidently predict how their students will perform on an assessment of rigorous standards based on their performance in *i-Ready Diagnostic*. Because of its strong correlation to the AZCCRS, we are confident that *i-Ready* will offer valid and reliable predictive information of student performance on the AzMERIT.

Providing explicit, systematic, and scaffolded instruction in reading and mathematics, *i-Ready's* instructional efficacy is also backed by research. As mentioned previously, one of the most powerful aspects of our solution is its ability to help a broad range of students—not just a subset. Our research proves that **students using *i-Ready Instruction* for 45 or more minutes per week for at least 25 weeks show significantly greater gains than average student growth** on *i-Ready*.

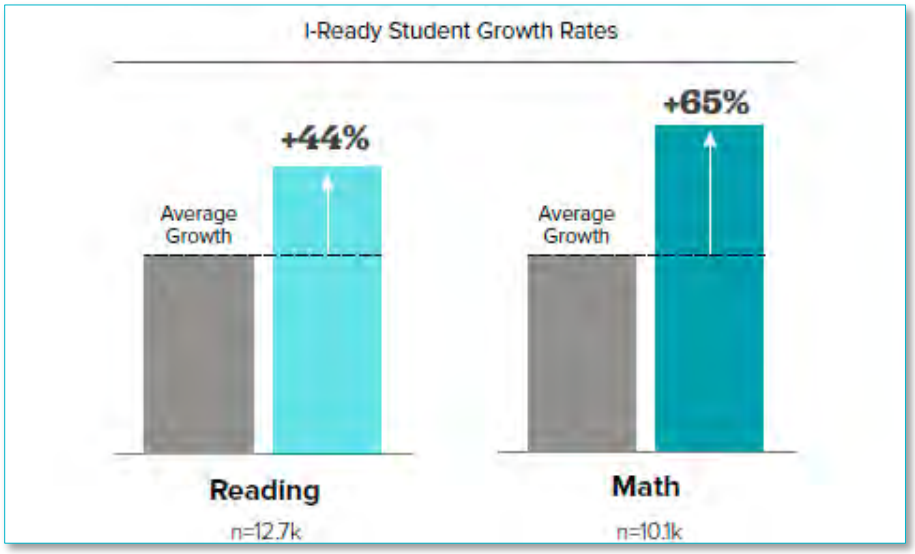


Figure 21. Students using *i-Ready Instruction* for 45 minutes or more per week, per subject, for at least 25 weeks showed significantly greater gains than average student growth for the 2013–2014 school year.

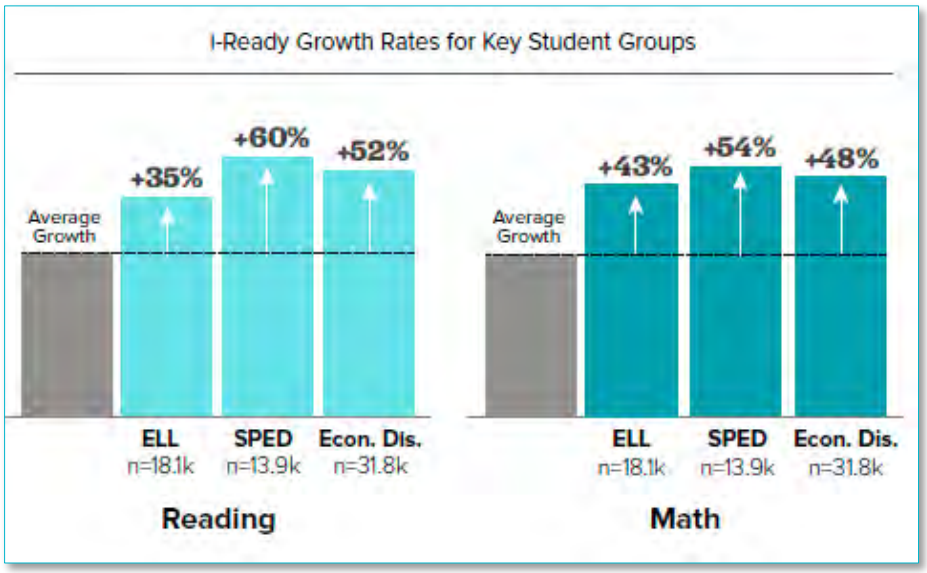


Figure 22. Growth for English language learners, students in Special Education, and students who are economically disadvantaged using *i-Ready Instruction* in reading and mathematics far outpaced average student growth for the 2013–2014 school year.

> **"…Our school's very diverse…our English (as a) second language learners fit right in with *i-Ready* and very quickly learned to navigate the program. (They) showed a tremendous amount of growth through using (*i-Ready*) for the school year."—Special Education teacher**

Case studies validated by the independent, third-party Educational Research Institute of America provide further evidence that *i-Ready* works. Read the full studies online at www.i-ready.com/casestudies.

Quantitative Research

i-Ready has been proven rigorous, valid, and reliable via extensive studies. In addition to the New York study cited above, we submit the following summaries of research and linking studies.

- The **Lexile Linking Study** provides evidence of external (concurrent) validity, allows for reporting of Lexile scores based on *i-Ready Diagnostic* scores, provides information on appropriately based reading materials for students, and allows for reporting of norm information on *Diagnostic* scores. Also, the **Quantile Linking Study** provides evidence of external validity, allows for reporting of Quantile scores based on *Diagnostic* scores, and allows for reporting of norm information based on the *Diagnostic* scores.
- Following the release of Smarter Balanced Assessment (SBA) results in the fall of 2015, the Independent Educational Research Institute of America conducted an analysis between the fall ***i-Ready Diagnostic* (math and reading) and the end-of-year Smarter Balanced Assessment Consortium (SBAC)** summative math and reading assessments.

The sample used for classification analysis included 39,248 students from grades 3–8, ranging from 5,000 to 7,000 per grade. Students in the sample were recruited from 17 districts in four SBAC states (Hawaii, Washington, Missouri, and California). The research found a high correlation between *i-Ready Diagnostic* and SBA, which significantly exceeded criteria set by the National Center on Response to Intervention.

i-Ready was also shown to accurately classify students' SBA proficiency status and accurately predict end-of-year proficiency rates based on students' fall, winter, and spring *Diagnostic* performance.

- ERIA also conducted a research study evaluating the relationship between ***i-Ready Diagnostic* and the Partnership for Assessment of Readiness for College and Careers (PARCC)** end-of-year assessments in 2015. The purpose of this study was to examine the validity evidence supporting the use of i-Ready Diagnostic as a tool for evaluating students' progress toward learning the knowledge and skills established in the Common Core State Standards and measured by the PARCC Assessments. Researchers analyzed the relationship between i-Ready scores and PARCC scores for over 13,000 students in grades 3 to 8. Students in the sample were enrolled in 41 schools across 14 districts and 5 different states (Colorado, Maryland, Mississippi, New Jersey, and Ohio).

  The research found a high correlation between *i-Ready Diagnostic* and PARCC which significantly exceeded criteria set by NCRTI. *i-Ready* was also shown to accurately classify students' PARCC proficiency status and accurately predict end-of-year proficiency rates. Backed by these strong results, educators can confidently use the *i-Ready Diagnostic* to guide critical decisions in their districts, schools, and classrooms.

- As previously described, to continually enhance and evaluate the program, we are committed to ongoing research and exploration of new content, technology, methodologies, and reporting. **National linking studies with 16 states** are underway to expand the generalizability of the linking between *i-Ready Diagnostic* and different state assessments. These studies include North Carolina, Florida, New York, and Louisiana.

FOSTERING TEACHER EXCELLENCE WITH TARGETED PROFESSIONAL LEARNING OPPORTUNITIES AND RESPONSIVE SUPPORT STAFF

Professional development is essential to implementation with fidelity. Curriculum Associates' approach is grounded in research, that ***"Effective professional development is [focused], ongoing, and connected to practice...[2]"*** Our *i-Ready* professional development curriculum is designed to yield essential outcomes for teachers, coaches, and leaders via a series of onsite courses that are personalized, timely, action-oriented, and flexible.

[2] *National Staff Development Council, Darling-Hammond, L., Wei, R.C., Andree, A., Richardson, N., and Orphanos, S., 2009.*

"I love the professional development sessions available as they have assisted me with better helping teachers with providing a higher level of teaching to their students." Educator

Our training sessions are facilitated by some of the most dynamic professional development experts in the field, each bringing years of K-12 and adult education experience to his or her involvement with teachers across the country. Throughout more than 2,000 diverse *i-Ready* implementations, our team has observed that the most successful programs are those in which our expert implementation specialists are able to engage multiple times over the year with all stakeholders: District- and school-level administrators and teachers.

During the direct-to-staff sessions, the trainer and participants all log in to *i-Ready*, providing educators with hands-on experience using the system. Our Professional Development Specialist walks through the system, giving teachers and administrators a guided tour of the features. Training includes practicing accessing reports and other critical features of the program. Teachers and administrators have time to explore the system and ask any questions that arise.

For optimal implementation, each participant should attend two onsite training sessions: 1) *Getting Started with* i-Ready Diagnostic & Instruction, and 2) *Understanding Data and Administering* i-Ready Standards Mastery. Each direct-to-staff session accommodates up to 30 attendees and lasts up to three hours (*Understanding Data* lasts up to four hours). One of our expert Professional Development Specialists will also deliver onsite coaching to school leaders and teachers. We propose that administrators attend Leadership Best Practices session of up to three hours.

Year 1	Year 2 and Beyond (Annually)
***Leadership Best Practices I*:** Leaders and coaches explore best practices for setting up a successful *i-Ready* implementation and learn how to use *i-Ready* data to measure progress against school/district goals.	***Leadership Best Practices II*:** Leaders and coaches enhance their capacity to drive successful school-level implementations, with a focus on helping teachers harness *i-Ready's* potential as a powerful instructional tool to drive student growth.
***Getting Started with* i-Ready:** Teachers and leaders develop an understanding of how *i-Ready* supports differentiated instruction and learn how to successfully administer the *Diagnostic* to maximize results.	***Instructional Planning*:** Teachers and leaders explore "power practices" for using *i-Ready* instructional tools to maximize student growth and engagement over the course of the entire school year.
***Understanding Data*:** After administering the first *i-Ready Diagnostic*, teachers and leaders learn how to interpret key *i-Ready* reports and use that data to drive instructional decisions.	***Helping All Learners Succeed*:** Using the results of the year's first *Diagnostic*, teachers and leaders plan effective, differentiated instruction designed to meet the needs of their students with *i-Ready* resources.
***Site-Based Coaching*:** A Curriculum Associates Professional Development Specialist delivers onsite coaching to school leaders and teachers, offering site-tailored support to make their first year implementation a success.	**Site-Based Coaching:** For renewing customers, a Curriculum Associates Professional Development Specialist delivers onsite coaching designed to address site-specific implementation needs, with an emphasis on instruction.

"I really appreciate the *i-Ready* program because it allows me to differentiate lessons and meet the diverse…needs of each of my students."—Educator

Our pricing includes session development and any handouts (teacher training manual or administrator training manual, as appropriate to the audience), plus our specialist's time, travel, and lodging. The District will provide and host the training location/facility, coordinate all participant time/travel, and provide required equipment (e.g., computers with Internet access).

Getting Started with i-Ready

Delivered prior to the start of the school year, this course serves as the kickoff for classroom-level *i-Ready* implementation.

For teachers and instructional coaches (leaders are also encouraged to attend), *Getting Started with* i-Ready is the first step in preparing teachers and instructional coaches to become successful *i-Ready* practitioners. Participants start by getting to know the *i-Ready* system itself, exploring the ways they may integrate *i-Ready* data and reports, *Growth Monitoring* assessments, and resources like downloadable *Tools for Instruction* lesson plans into their classrooms.

Given its timing—before the beginning of the school year—this course has a practical focus on *Diagnostic* administration so that participants can collect the best possible student data from the very start of their implementation and initiate meaningful instruction as soon as *Diagnostic* results are available.

Participant objectives include:

- Explore the basics of *i-Ready Diagnostic* and tools for monitoring student progress
- Review key steps for administering the *Diagnostic* to ensure reliable data
- Review key reports and instructional resources, including *Tools for Instruction*, which will be available for use after the first *Diagnostic*

At the end of this session, participants will be able to:

- Integrate *i-Ready* data, tools, and resources into their classroom practice
- Prepare for and administer the *i-Ready Diagnostic* to ensure reliable results
- Begin to differentiate and provide intervention for their students guided by *i-Ready* data and resources

Each *Getting Started with* i-Ready session lasts up to three hours. Computer and web access are strongly recommended.

Leadership Best Practices

This course, also delivered prior to the start of the school year, sets forth a roadmap for managing a successful *i-Ready* implementation from day one.

For principals and other site-level implementation leaders, such as instructional coaches, as well as district leaders responsible for the implementation, *Leadership Best Practices I* provides the essential information needed to get the most out of *i-Ready*. Leaders develop a shared understanding of the goals of their *i-Ready* implementation, and explore how *i-Ready* can be used to overcome common barriers to student growth and proficiency. They learn how they can most effectively support teachers as they administer the *Diagnostic*, analyze data, and deliver differentiated instruction informed by critical *i-Ready* reports. Finally, they develop plans for embedding *i-Ready* data into district- and school-level planning and decision-making structures; we do not just "collect data," we make the data actionable.

Participant objectives include:

- Learn what actions help drive strong use of *i-Ready* in the first year of implementation
- Explore ways peers throughout the country have successfully leveraged *i-Ready* to drive significant gains in student achievement

- Review detailed checklists for leading *Diagnostic* administration and student progress monitoring
- Access and interpret key district, school, and classroom reports, including *Growth Monitoring*

At the end of the session, participants will be able to:

- Articulate important dates, goals, and action steps for this year's *i-Ready* implementation
- Employ best practices that result in effective program usage
- Use *i-Ready* data to inform school- and district-level decisions and prioritization

Each Leadership session lasts up to three hours. Computer and web access are strongly recommended.

Understanding Data

This course guides teachers through the process of using their own student data to plan classroom instruction.

For teachers and instructional coaches (leaders are also encouraged to attend), *Understanding Data* is a hands-on session that teaches participants to analyze, interpret, and take action based on their students' *Diagnostic* results. In addition to diving deep into *Diagnostic* reports, participants explore additional tools and reports they have at their disposal to track student progress, including gauging students' performance and monitoring their progress.

Participant objectives include:

- Access and analyze their students' *Diagnostic* results via *i-Ready* reports
- Learn how to use *Diagnostic* data to inform differentiated reading instruction
- Explore how to use *Growth Monitoring* data to adjust instruction to meet individual student needs

At the end of this session, participants will be able to:

- Access and interpret their own student data
- Leverage *i-Ready* reports to immediately inform instructional decisions
- Use *Growth Monitoring* data to adjust instruction

Each *Understanding Data* session lasts up to three hours. Computer and web access are strongly recommended.

Webinars

As a cost option to augment our onsite sessions, we offer live 60–90 minute online webinars—a great model to support the District in training additional staff during the year. These webinars may focus on reinforcing learning from the onsite *Getting Started* or *Understanding Data* sessions, and will address tactical issues related to *i-Ready* administration and implementation. This could range from checking class rosters prior to *Diagnostic* administration, to best practices and resources for preparing students to take the assessment, to monitoring *Diagnostic* completion and rushing.

While all of these topics are covered in the *Getting Started* coursework, teachers commonly need assistance applying their learning—particularly in the first instance of *Diagnostic* administration. The webinars will also leave room for questions to be submitted by teachers in writing and answered, either during the session or in subsequent FAQs. Webinars can accommodate up to 1,000 participants and can be recorded as needed for future reference.

Years 2 and Beyond of Implementation

We offer a standard curriculum for Year Two users, structured similarly to that described above for Year One. The specifics of professional development for Year Two and beyond would be determined in close consultation with the ADE.

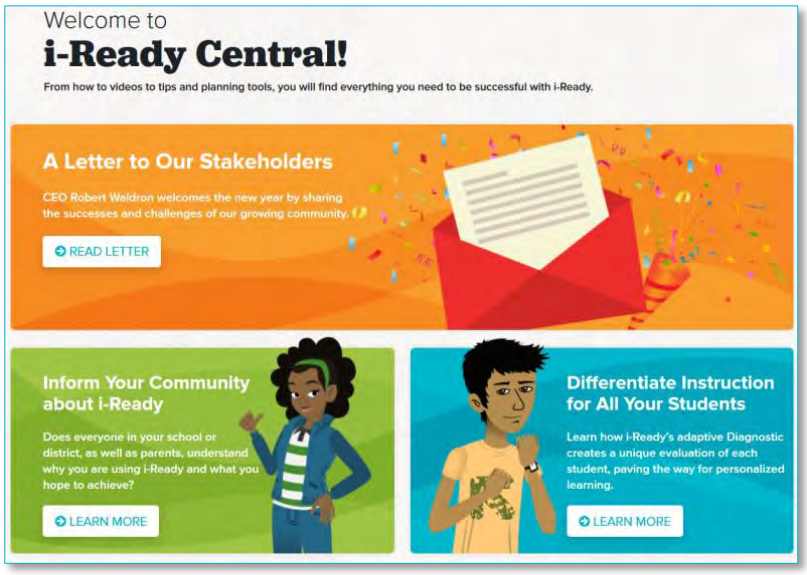
> **"I have been a customer for a long time and the products Curriculum Associates provides are helpful for all students, regardless of ability, language, etc...there truly is something for everyone."—Vanessa Lopez, Educator**

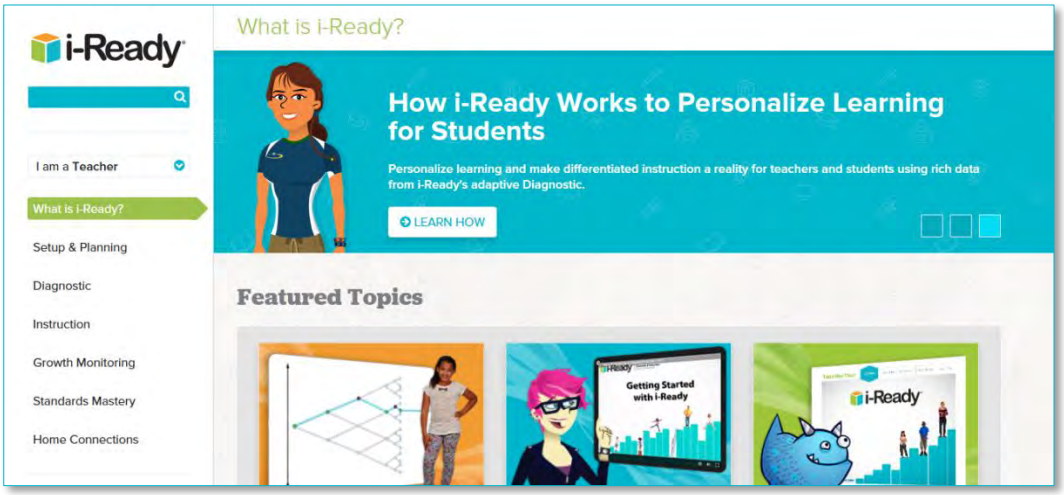
24/7 Trainings to Supplement Onsite Sessions

With purchase of *i-Ready*, District users will have access to our robust user-support website, *i-Ready Central™*. A valuable supplement to onsite professional development, this website offers 24/7 access to best-practice tips, how-to guides, videos, webinars, planning tools, and additional training and implementation resources.

The website offers videos, PDFs, and Word documents to help educators maximize their use of the program and minimize their preparation time in order to give teachers more time in the classroom. The site offers a 24/7 menu of video tutorials, how-to guides, planning tools, and additional training resources that teachers and administrators can access at their convenience. Curated by *i-Ready* implementation experts, featured articles provide in-depth coverage of key topics: tips for collecting data, implementation exemplars, and how to use the *Diagnostic* as a student growth measure, and explaining *i-Ready* to the school community.

These resources are self-paced and available 24/7.





Software Updates

We are continually working to develop program features that enhance the overall user experience of students, teachers, parents, and administrators. We roll these updates, upgrades, and enhancements into new releases, which we deploy periodically throughout the year. There is no additional charge for these program enhancements, assuming your licenses are in good standing. Further, since *i-Ready* is a fully web-based, vendor-hosted, Software-as-a-Service application, there is no work for schools to do for installation.

All upgrades are pushed from our centrally hosted, secure servers directly to the application. Release Notes posted to *i-Ready* Central will explain the new software features, and the dedicated Account Manager will answer questions users may have about the new product features.

World-Class Technical and Customer Support

Curriculum Associates has built a reputation for outstanding service and support. At no additional cost to ADE and participating districts, the *i-Ready* license fee includes program upgrades and maintenance, plus unlimited access to our U.S.-based Customer Service and Technical Support teams via toll-free telephone and email during business hours. Technical support is available Monday through Friday, 5:00 am–7:00 pm Mountain Time (excluding holidays). Customer service is available Monday through Thursday, 6:30 am–5:00 pm Mountain; and Friday, 6:30 am–3:00 pm Mountain, excluding holidays. Inquiries received after business hours will receive priority attention the next business day. Requests for technical assistance are addressed within 24 hours on a consistent basis.

We track all customer inquiries to their resolution, using a customized relationship management tool. For detailed *i-Ready* technical support information, go to www.i-ready.com/support.

THE RIGHT PROGRAM FOR THE JOURNEY

i-Ready Diagnostic & Instruction is a valid and reliable measure of student performance and growth over time. Most importantly, *i-Ready* is a system that not only provides a powerful, adaptive *Diagnostic* and interim *Growth Monitoring*, but also gives educators specific recommendations for online and teacher-led instruction based on the data gathered from these assessments.

Some of *i-Ready*'s key differentiators are the adaptive nature of its technology; the colorful, engaging interface that keeps students enthused; the rigor of its research base; the program's capacity to measure the growth of both low- and high-achieving students; and Curriculum Associates' ability and commitment to support effective implementation.

From start to finish, we designed the student interface to engage students in their own learning—they actually like using the program rather than viewing it as "more work." The very same thing can be said about how teachers and administrators feel about *i-Ready*, based on our focus groups, advisory panels, and the feedback we receive from customers. For client testimonials, go to www.curriculumassociates.com/i-Ready.

We believe the foundation of our success is four-fold: quality products, engagement of learners, superior customer service, and proven professional development. The Arizona Department of Education and participating districts have our commitment that we will bring this winning formula to our support of this important initiative.

TOP 10 Reasons to Choose i-Ready®

1 Built for the Common Core
Not just aligned, our brand new content guarantees students get the most rigorous assessment and instruction out there and that teachers are provided with the most current teaching best practices.

2 Software as a Service (SaaS)
i-Ready is constantly evolving and improving. The product is updated at least four times per year, at no additional cost to users.

3 A Company that Serves
At a minimum, three service and support personnel are assigned to each account in addition to the account's sales representative. Curriculum Associates is a private company that is not traded on Wall Street and sits in a perpetual trust so it cannot be bought or sold. Our structure allows us to do the right thing for educators every time, every day.

4 Proven to Predict and Proven to Work
Third-party research proved that i-Ready predicted student performance on high stakes assessments and improved student growth and performance.

5 100% Money Back Guarantee
If you're not completely satisfied, we will return your investment. There's never a risk to you.

6 Assess Less, Know More
Streamlined and thorough assessments that provide valid and actionable data eliminate the need for additional screeners, end-of-course assessments, duplicative and/or ineffective intervention tools, and practice programs.

7 One Continuous Growth Measure for K–12
Provides the ability to track performance through a student's entire school career.

8 Assessment and Instruction in One Product
Assessment results tied to instruction make a difference and provide those critical next steps, immediately resulting in decreasing teacher lesson prep and increasing student learning time—it's like having a virtual teaching assistant for everyone.

9 Complete Suite of Assessment Options
Assess students globally and by standard. Monthly growth mini-assessments, Standards Mastery assessments, instructional skill quizzes—all tie to real-time student, class, grade, school, and district reporting so there can be quick and immediate course corrections and interventions.

10 Nationally Recognized
Winner of the CODiE, Teachers' Choice, District Administration Top 100, and Parents' Choice awards.

i-READY FOR READING

Foundational Skills

i-Ready Diagnostic & Instruction assesses and teaches the foundational skills of phonological awareness, phonics, and high-frequency words.

Phonological Awareness

In *i-Ready Diagnostic*, test items use both audio and visual support to assess children's ability to distinguish and manipulate the sounds in spoken language. The stems, which comprise questions or directions, are read aloud to children, as are the individual answer choices. Children can use an audio icon to hear items and answer choices repeated. Many items are supported by art. Most items focus on segmenting and blending, because these skills are the most important building blocks for phonics instruction. Children are asked to segment and blend syllables, onset and rime, and individual phonemes. Other items assess children's ability to manipulate phonemes by deleting, adding, or substituting sounds in spoken words.

i-Ready Instruction provides explicit instruction in phonological awareness. Students learn to distinguish and manipulate the individual sounds in spoken words. The instructional modules focus on skills that include rhyming, segmentation, blending, deletion, addition, and substitution. The instructional modules combine audio, art, animation, and interactivity to support the development of the critical skills that students need in order to benefit from phonological awareness instruction. In addition to practice opportunities, interactive quizzes assess progress on each skill.

Phonics

i-Ready Diagnostic assesses children's ability to recognize sound-spelling correspondences. Test items use both audio and visual support. Some items—which comprise questions or directions—are read aloud, and children are asked to choose among written answer choices. Other items are written, and children are asked to choose among answer choices that are read aloud. As with phonological awareness, children can use an audio icon to hear items and answer choices repeated. Many items are supported by art. Items focus on a range of high-utility skills, including: letter recognition; one-to-one letter-sound correspondences; CVC and CCVC words—as well as other one-syllable words; consonant digraphs; final e conventions; r-controlled vowels; inflectional endings; vowel teams (digraphs and diphthongs); two-syllable words; three, four, and five syllable words; and words with prefixes/suffixes.

The instructional modules in *i-Ready Instruction* provide an interactive, rich-media environment for the systematic and explicit phonics instruction that reading research recommends. The sequence of instruction begins with consonant and short vowel sounds. As children learn to build words, instruction follows in skills such as initial consonant blends, final e conventions, consonant digraphs, vowel digraphs, r-controlled vowels, and diphthongs.

The instructional modules also teach word-study and word-analysis skills, such as using syllabification, recognizing prefixes and suffixes, and identifying compound words. In addition to practice opportunities, interactive quizzes assess progress on each skill.

What sets *i-Ready Instruction* apart from many other instructional programs is that the emphasis is on teaching students to use various phonics skills strategically in the context of sentences, stories, letters, and expository paragraphs. Students are taught how to use both graphophonic (letter and sound) cues, as well as semantic and syntactic (meaning and language-based) cues, to figure out unknown words. They are taught to decipher difficult words by rereading sentences and using what they know about letters and sounds, as well as by considering the context of the sentence. Students are also taught how to self-monitor their reading on a metacognitive level. These instructional modules help students find strategies that are useful to them, with the goal of making them independent readers.

High-Frequency Words

Words assessed and taught in *i-Ready Diagnostic & Instruction* are drawn from the Dolch Basic Word List (Dolch, 1941) and the Fry Instant Word List (Fry, 1999). Test items in *i-Ready Diagnostic* assess children's ability to recognize high-frequency words. Some stems—which comprise questions or directions—are read aloud, and children are asked to choose among written answer choices. Other stems are written, and children are asked to choose among answer choices that are read aloud. Children can use an audio icon to hear items and answer choices repeated.

In *i-Ready Instruction*, words are taught and practiced both in isolation and in context. Animation and audio throughout the instructional modules engage and motivate students. For example:

- An engaging animated character often establishes a context for a group of words.
- Words are presented on the screen and read aloud.
- A sentence and a visual are often displayed to provide context for the word.
- Students then identify the word in the context sentence or in isolation.
- Repetition builds automatic recognition of high-frequency words. Interactive quizzes assess progress.

Vocabulary

Test items in *i-Ready Diagnostic* assess students' knowledge of both Tier 2 words (academic or literary words) and Tier 3 words (domain-specific or content-area words). Panels of teachers and reading specialists selected the words to be assessed, using research-based lists that included:

- *Words Worth Teaching* (Biemiller, 2010)
- *The Living Word Vocabulary* (Dale & O'Rourke, 1981)
- *The Educator's Word Frequency Guide* (Zeno, 1995)

- *The Academic Word List* (Coxhead, 2000)

The panels made these selections to reflect the types of words children learn in various disciplines at different grade levels and in various stages of their lives.

Test items assess knowledge of these words in context, and those aimed at early readers include visual support. Because oral vocabulary is a critical part of reading development, test items at Kindergarten through grade 2 are supported by audio.

A key goal of *i-Ready Instruction* is to expand vocabulary in order to help readers communicate and comprehend effectively. The instructional modules use categories and rich context to teach words students need to know, encouraging them to make connections between words and to link words with real-world experiences. Words are explained, and students complete interactive exercises that lead them to engage with the meaning of the words.

Corrective feedback redirects students and reinforces understanding of the correct meaning of each word. Instruction also focuses on key vocabulary skills, such as prefixes and suffixes, synonyms and antonyms, homophones, and multiple-meaning words. Opportunities are provided for practice, and interactive quizzes assess progress on each skill.

Comprehension

Students' abilities to understand both literary text and informational text are evaluated in *i-Ready Diagnostic*. The focus in Kindergarten is on listening comprehension. At this grade, comprehension items are supported by both audio and art. Reading comprehension is the focus at grade 1 and above. Students are presented with a passage, and interactive, multiple-choice items are shown next to the passage. When a passage has more than one page, students may page back and forth through it while still viewing the item, which encourages them to find textual support for their selected answer.

The major focus of the comprehension instructional modules in *i-Ready Diagnostic* is on developing various comprehension skills, such as comparing and contrasting, distinguishing fact from opinion, and prediction, to name just a few. Graphic organizers, concept maps, and flow charts are used to aid in the explicit instruction of main ideas and details, story elements, sequencing, and determining cause and effect. Comprehension activities emphasize the ability of the reader to actively construct meaning when reading both narrative and expository text. *i-Ready Instruction* presents all of these comprehension skills using a mix of literary and informational passages.

The instructional modules both model and support the use of dialogue to make meaning from text and to apply comprehension skills more effectively. Animated, interactive lessons assist students in navigating the complexities of the comprehension process and develop their understanding of text by introducing several viewpoints.

The lessons model a small group discussion format with a main teacher character and three students to simulate how a real student might participate and react in such sessions. Students are then encouraged to discuss concepts and ideas from the lesson in the classroom. Opportunities are provided for practice, and interactive quizzes assess progress on each skill.

i-READY FOR MATHEMATICS

The standards organize mathematical content within grades by domains—big ideas that connect topics across grades. A major goal of this grouping is to build understanding of mathematical concepts within each domain and how they progress across grades. *i-Ready Diagnostic & Instruction* further organizes the domains into four major groups: Number and Operations, Algebra and Algebraic Thinking, Measurement and Data, and Geometry.

Number and Operations

Counting and Cardinality (K)	Number and Operations—Fractions (3–5)
Number and Operations in Base Ten (K–5)	The Number System (6–8)

In *i-Ready Diagnostic*, the items aligned to the Number and Operations in grades K–2 allow students to demonstrate proficiency in the skills associated with counting, whole numbers, the algorithms of the operations, and understanding of place value. In these grades, in the least difficult items, virtual manipulatives are used to help students show conceptual understanding of place value and the algorithms for adding and subtracting. For example, students can utilize a virtual base-ten block tool to help with regrouping for solving subtraction items.

In grades 3–5, the items aligned to the Number and Operations domain allow students to demonstrate a deeper understanding of the concepts they learned in the primary grades, while also demonstrating their understanding of how these concepts expand into other sets of numbers, such as fractions and decimals. In this domain, there are technology-enhanced items where students are able to show conceptual understanding of fractions by plotting the fractions on a number line tool. In grades 6–8, the items aligned to the Number and Operations domain allow students to demonstrate their understanding of how the concepts they learned earlier in this domain extend to integers and real numbers. They also demonstrate their facility with converting among different representations of numbers.

i-Ready Instruction provides opportunities for students to develop an understanding of whole numbers, fractions, decimals, and rational numbers. The sequence of instruction begins with whole numbers. Students use virtual counters, models, and manipulatives to develop understanding of the concepts of counting and cardinality and place value. Learners then use these understandings to develop strategies and algorithms to add, subtract, multiply, and divide whole numbers.

The online lessons expand upon students' understanding of whole numbers to develop the concepts of fractions and decimals.

Students continue to use virtual tools and models, including the number line and area models, to develop an understanding of unit fractions, equivalent fractions, comparing fractions, and adding, subtracting, multiplying, and dividing fractions. Decimal numbers are introduced using money and area models, and a connection is made to decimal fractions and the base-ten system.

Students use their understanding of whole numbers and fractions as points on the number line, as well as their grasp of the properties of operations on whole numbers and fractions, to understand positive and negative rational numbers as a number system.

i-Ready provides students opportunities to practice all of these skills, both in isolation and in real-world contexts. Interactive quizzes then assess progress on each skill.

Algebra and Algebraic Thinking

Operations and Algebraic Thinking (K–5)	Expressions and Equations (6–8)
Ratios and Proportional Relationships (6–7)	Functions (8)

In *i-Ready Diagnostic*, the grades K–2 items aligned to Algebra and Algebraic Thinking allow students to demonstrate their ability to represent problem situations with number sentences. As in Number and Operations, in these earlier grades, students use virtual manipulatives to represent these problem situations. For example, a 10-frame with counters can be used to represent what is meant by the equation 5 + 2 = 7, and how that may be manipulated to show understanding that 7 – 2 = 5.

In grades 3–5, the items aligned to Algebra and Algebraic Thinking expand to include students' capabilities of modeling problems using equations. These items allow students to demonstrate their understanding by asking them to select the equation that best models a mathematical or real-world problem. In grades 6–8, the items aligned to Algebra and Algebraic Thinking expand on students' understanding of modeling problems to using different representations to solve the problems, including expressions and equations and functions. In these grades, students may represent situations by graphing a line that represents a situation on a coordinate graphing tool.

i-Ready Instruction uses a problem-solving approach to develop the meanings and properties of the operations. Lessons provide students with the opportunity to use virtual manipulatives, tape diagrams, arrays, and area models to solve a variety of problem types with unknowns in different places. The meanings and properties of the operations are then used to solve one-step, two-step, and multi-step problems. As the modules progress through the problem types, the range of numbers used is extended and different problem-solving strategies are developed.

Online lessons employ a problem-solving approach and real-world contexts to explore ratios and proportional relationships. The modules guide students in using manipulatives, tables, and graphs to explore these concepts, and the outcomes of their explorations are used to formally define them.

The idea of equations is developed through a progression: representing an unknown amount with a letter, the properties and order of operations, and evaluating and simplifying expressions. A variety of equations are solved using a balance model, tape diagrams, and interactive guided examples. *i-Ready* lessons introduce patterns and variables in upper elementary school. These concepts are recalled in middle school to introduce the idea of a function.

Various representations of functions are studied, including algebraic, numeric, graphic, and verbal. As with other topics, *i-Ready* leverages meaningful real-life contexts to motivate learning.

Measurement and Data

Measurement and Data (Grades K–5)	Statistics and Probability (Grades 6–8)

In *i-Ready Diagnostic*, the items aligned to Measurement and Data allow students to observe, collect, display, organize, and interpret measures and data. In grades K–2, the items focus on measuring using virtual tools such as a ruler, and interpreting data displayed in simple graphs such as picture and bar graphs. In grades 3–5, the items aligned to Measurement and Data provide opportunities for students to demonstrate their extended understanding of more complex measurements and data sets. The items aligned to this domain in these grades also emphasize conceptual understanding of geometric measurement. For example, there is a tool that allows students to fill a rectangular prism with unit cubes to demonstrate an understanding of volume.

In grades 6–8, the items no longer have any focus on geometric measurement, concentrating solely on the concepts of statistics and probability. Items ensure that students are given the opportunity to demonstrate their conceptual understanding of more complex data sets. Technology-enhanced items allow students to demonstrate their understanding of bivariate data by graphing linear functions that closely represent a data set.

The instruction modules in *i-Ready Instruction* provide students with virtual measurement tools including 1-inch tiles, 1-centimeter tiles, beakers, balance scales, protractors, and area and volume models to explore measurement concepts. The number line is used to develop length concepts, as well as to understand the number systems and their operations.

Real-world contexts are used in conjunction with these various measurement tools to enhance students' conceptual understanding. The contexts provide meaning when working with measurement and data analysis. A variety of application problems are solved using problem-solving strategies, including using a tape diagram, number line, or other model to understand the application problem. Lessons use virtual tools to have students sort objects or data into categories and take measurements. The information collected is used to build and analyze bar graphs and line plots.

i-Ready Instruction takes middle-school students through the process of data analysis.

Students ask a question, collect data, organize the data using an appropriate graphical display, and then analyze the data in order to answer the question. This process allows students to gain an understanding of what the data represents when organized in various displays such as dot plots, histograms, and box plots.

The lessons also extend students' understanding of proportional relationships to develop probability concepts and an understanding of statistical inferences. Students use proportional reasoning to make predictions about random events and then test their predictions. They also use proportional reasoning to make inferences about a population based on a random sample from that population. They understand that their predictions and inferences are not going to be exact, but close enough to gather useful information; that is the nature of Statistics.

Geometry

Geometry (Grades K–8)

In *i-Ready Diagnostic*, the items aligned to Geometry allow students to demonstrate proficiency in identifying, analyzing, and reasoning with shapes and figures. In grades K–2, the items are concentrated on two areas—students are provided the opportunity to demonstrate proficiency with the attributes of different shapes, and they are able to show connections to a conceptual understanding of fractions as part of a whole. Technology-enhanced items allow students to sort or identify shapes that have similar attributes.

In grades 3–5, the items aligned to Geometry expand on students' understanding of figures and begin to assess student understanding of the attributes in hierarchies. These items also ask students to demonstrate a conceptual understanding of two-dimensional figures in space. Some of the technology-enhanced items have students plot shapes in the first quadrant of a coordinate grid. Other items may have them fill in a two-dimensional space with unit squares to help demonstrate proficiency with a conceptual understanding of area.

In grades 6–8, there is somewhat of a shift in the domain. In grades K–5, the only geometric measurement concepts covered in the Geometry domain are those that deal with conceptual understanding of area. However, in grades 6–8, with the Measurement and Data domain focusing on Statistics and Probability, all of the geometric measurement concepts fall under the Geometry domain. These include area of composite figures, surface area, and volume. In addition to these concepts, higher-level geometric concepts are also assessed in *i-Ready* in grades 6–8. These concepts include relating transformations to congruence and similarity, and analyzing proofs of the Pythagorean Theorem and its converse.

Some of *i-Ready Diagnostic's* technology-enhanced items in this domain at these grade levels use a virtual protractor to allow students to demonstrate proficiency with rotations.

i-Ready Instruction follows the four levels of geometric thinking:

- Visual/syncretic: shape recognition
- Descriptive: identification of properties of shapes
- Analytic: characterize shapes based on their properties
- Abstract: classify shapes in hierarchies

Explorative and hands-on activities are used to develop concepts. Activities include using pattern blocks, area tiles, unit cubes, grids, and the coordinate plane to sort, classify, construct, dissect, locate, and transform various geometric objects. The focus is to help students develop understanding of geometric relationships.

UNIVERSAL DESIGN AND ACCESSIBILITY

All items in *i-Ready* are designed to be accessible for most students, regardless of their need for accommodation. In most cases, students who require accommodations (e.g., large print, extra time) will not require additional help during administration. The thoughtful planning Curriculum Associates invested in the general assessment design ensures that a large percentage of students requiring accommodations will have the necessary adjustments without compromising the interpretation or purpose of the test.

According to the Standards for Educational and Psychological Testing (AERA, APA, NCME, 2014), "Universal Design processes strive to minimize access challenges by taking into account test characteristics that may impede access to the construct for certain test takers." Curriculum Associates developed *i-Ready Diagnostic* with the universal principles of design for assessment in mind.

According to the NCEO Synthesis study (http://www.cehd.umn.edu/nceo/onlinepubs/Synthesis44.html), the seven elements of Universal Design as they apply to large-scale assessment are:

- Inclusive assessment population
- Precisely defined constructs
- Accessible, non-biased items
- Amenable to accommodations
- Simple, clear, intuitive instructions and procedures
- Maximum readability and comprehensibility
- Maximum legibility

To address these points, *i-Ready* development considered several issues related to accommodations. Most accommodations may be grouped into the following general categories that *i-Ready* addresses:

- **Timing**—Students may need extra time to complete the task. The *Diagnostic* assessment may be stopped and started as needed to allow students needing extra time to finish. The *Diagnostic* is untimed and can be administered in multiple test sessions. In fact, to ensure accurate results, a time limit is not recommended for any student, though administration must be completed within a period of no longer than three weeks.
- **Flexible Scheduling**—Students may need multiple days to complete the assessment. *i-Ready* recommends that all students be given multiple days, as necessary, to complete the test (administration must be completed within a period of no longer than three weeks).
- **Accommodated Presentation of Material**—All *i-Ready Diagnostic* items are presented in a large, easily legible format on the computer screen. There is only one item on the screen at a time, the bold font is large and friendly, and many items for grades K–5 have audio support. *i-Ready* has an option for audio support for math items at grade levels K–5. Directions are either read aloud, demonstrated visually, or generally self-evident, regardless of language abilities. Use of clear, concise, and chronological directions build student understanding. The program employs physical cues (such as pointing or facial expressions), symbolic cues (such as pictures and icons), and auditory cues (such as asking a question).
- **Setting**—Students may need to complete the task in a quiet room or with a small group of peers. This can easily be done, as *i-Ready Diagnostic* is available on any computer with internet access that meets the technical requirements. Furthermore, all students are encouraged to use quality headphones in order to hear the audio portion of the items. Headphones also help to cancel out peripheral noise, which can be distracting to students.
- **Response Accommodation**—Students should be able to control a mouse. They only need to be able to move a cursor with the mouse and be able to point, click, and drag. There are some students who do not have this capacity, and they can work with *i-Ready Diagnostic* with third party software, such as TOBII Communicator.

Though not embedded in the program, *i-Ready* works with third-party (external) assistive technologies, such as screen readers and screen magnifiers.

In terms of item bias, Differential Item Functioning (DIF) was performed on the current items in the assessment bank. Of the nearly 6,000 items for which this analysis was available, only about two percent of the items had large or significant Differential Item Functioning. Items that demonstrate large DIF are targeted for removal. Items with significant, but small, DIF will be subjected to extensive content review by a committee, who will then determine the course of action for each item in terms of whether it should remain in the operational pool, be removed, or be revised and re-piloted.

Supporting English Language Learners

As supported by internal and external research, *i-Ready* is an effective solution for the full range of learning abilities, including Title I, Response to Intervention Tiers 2 and 3, students receiving Special Education services, and English Language Learners. *i-Ready* is an adaptive test, therefore each child works at his or her own level with unique goals and objectives regardless of ability level.

i-Ready embeds numerous instructional supports that are particularly effective for ELLs. These are described below.

Vocabulary Support. Research shows that ELLs show more growth when instruction supports the development of academic vocabulary and high-utility (Tier 2) words. Vocabulary support in *i-Ready* Instruction includes the following:

- Lessons offer explicit definitions of academic vocabulary, with audio support.
- Academic vocabulary is repeated multiple times in a lesson. The terms are highlighted each time they occur on screen, with clickable access to the definitions.
- A glossary of academic vocabulary is available to students within the lesson.
- In reading lessons, while students read particular passages, interactive point-of-use definitions support their understanding of challenging high-utility words.
- Reading lessons address word-learning strategies, such as context clues and using Greek and Latin word roots and affixes.

Structured, Academic Peer Conversations. Peer conversations with an academic purpose are particularly effective for English Language Learners. *i-Ready Instruction* helps ELLs develop the sophisticated language skills that success in school requires:

- Each *i-Ready* lesson is essentially structured as if it were an academic conversation with a peer group.
- Onscreen characters (students' virtual peer group) provide background knowledge, activate prior knowledge, and lead the discussion.
- ELLs have frequent opportunities to interact with the material. Characters invite them to respond as if the students are joining the conversation.
- The onscreen characters use corrective feedback to affirm correct responses or redirect students when they are incorrect.
- Animations and other visual cues support corrective feedback in reading lessons.

Audio and Pacing That Supports Language Processing. ELLs need to listen and read with ample time to think. There are many stages of learning a language and these learners need different amounts of time to process what they read or hear.

- *i-Ready* lessons provide extensive audio support in lessons.
- Audio is synched with actions on the screen. Callouts, highlighting, and other visual supports appear in time with the audio to support understanding.
- Text onscreen is supported by audio. Passages, directions, questions, and answers can be read aloud.
- Audio buttons allow learners to hear the text read aloud multiple times—as many times as needed.
- Finally, students can control how quickly they advance through a lesson and can replay individual screens or the entire lesson.

Graphic Support and Visual Scaffolding. Lessons in *i-Ready* Instruction use the following visual features to further support ELLs:

- In reading lessons, students and characters work together to complete graphic organizers. Most Comprehension lessons use a single graphic organizer consistently throughout the lesson.
- Students hear instruction, modeling, and corrective feedback while seeing callouts, highlighting, and other actions synched to the audio onscreen.
- Engaging and informative illustrations support the instruction.
- Many lessons use checklists and other visually structured ways to review key concepts.
- Characters use gestures and facial expressions to support understanding. They point at key information on the screen and show various emotions at key points in the conversation.

Explicit, Direct Instruction in Comprehension Strategies. In reading lessons, each component skill is introduced with explicit instruction and modeling from the cast. Students then have an opportunity to practice the skill with detailed corrective feedback from the characters. This approach develops understanding of lesson concepts and encourages higher-order thinking skills.

Differentiation to Meet Individual Needs. *i-Ready Instruction* is differentiated and can match ELLs with the instruction that will best support their growth. In reading, the program can match students with the right level of text, as well as deliver remedial instruction (when needed) in basic literacy skills such as phonological awareness, phonics, or high-frequency words.

Interactive, Engaging Format

The student interface of the *i-Ready Diagnostic & Instruction* platform is highly interactive and designed to capture children's interest from the very beginning. The program keeps students actively involved in their learning experience, which leads to deeper understanding of the skills and concepts being taught. Children interact with the program every 30 seconds or less by clicking on answers, using online tools, typing in text or numbers, and manipulating models.

i-Ready also embeds numerous instructional supports—such as defining academic language in context at point-of-use—particularly helpful to English language learners and students served by Special Education. Narrated tours of reading lessons are available online at www.i-Ready.com/tour.

Correlation of Arizona's College and Career Ready Standards for English Language Arts to i-Ready Diagnostic Reading Skills

Grade K

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
K.RL.1 With prompting and support, . . . answer questions about key details in a text.	**Make inferences.** With support, draw conclusions or make inferences in read-aloud literary or informational text or in pictures. **Answer questions about key ideas and details.** With support, demonstrate understanding of key ideas and details shown in pictures or explicitly stated in literary or informational text read aloud.
K.RL.1 With prompting and support, ask and answer questions about key details in a text.	**Identify cause-and-effect relationships.** With support, identify examples of cause and effect, using pictures or words in literary or informational text read aloud.* **Sequence events in literary text.** With support, sequence pictures of two events or identify the beginning, middle, or end of literary text read aloud.* **Identify story elements in literary text.** With support, identify characters, setting, or major events in literary text read aloud.* **Retell literary text.** With support, retell stories read aloud.* **Compare and contrast within a literary text.** With support, compare or contrast characters (people, animals) or events within a literary text read aloud.*
K.RL.2 With prompting and support, retell familiar stories, including key details.	**Retell literary text.** With support, retell stories read aloud. **Sequence events in literary text.** With support, sequence pictures of two events or

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade K (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	identify the beginning, middle, or end of literary text read aloud.*
K.RL.3 With prompting and support, identify characters, settings, and major events in a story.	**Identify story elements in literary text.** With support, identify characters, setting, or major events in literary text read aloud. **Sequence events in literary text.** With support, sequence pictures of two events or identify the beginning, middle, or end of literary text read aloud.*
K.RL.4 Ask and answer questions about unknown words in a text.	**Determine word meaning.** With support, understand the meaning of Level K words and phrases, including academic and/ or domain-specific words, in literary or informational text read aloud.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level K words used in literary texts, grade-appropriate content areas, and other academic contexts.*
K.RL.5 Recognize common types of texts (e.g., storybooks, poems).	**Recognize types of texts.** With support, recognize common types of literary or informational texts.
K.RL.7 With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts).	**Make inferences.** With support, draw conclusions or make inferences in read-aloud literary or informational text or in pictures.* **Answer questions about key ideas and details.** With support, demonstrate understanding of key ideas and details shown in pictures or explicitly stated in literary or informational text read aloud.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade K (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Identify story elements in literary text. With support, identify characters, setting, or major events in literary text read aloud.*
K.RL.9 With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.	**Compare story elements in two literary texts.** With support, compare the adventures and experiences of characters in two literary texts read aloud. **Identify story elements in literary text.** With support, identify characters, setting, or major events in literary text read aloud.* **Compare and contrast within a literary text.** With support, compare or contrast characters (people, animals) or events within a literary text read aloud.*
K.RI.1 With prompting and support, . . . answer questions about key details in a text.	**Make inferences.** With support, draw conclusions or make inferences in read-aloud literary or informational text or in pictures. **Answer questions about key ideas and details.** With support, demonstrate understanding of key ideas and details shown in pictures or explicitly stated in literary or informational text read aloud.
K.RI.1 With prompting and support, ask and answer questions about key details in a text.	**Identify cause-and-effect relationships.** With support, identify examples of cause and effect, using pictures or words in literary or informational text read aloud.* **Compare and contrast within an informational text.** With support, compare or contrast individuals, ideas, events, or facts within an informational text read aloud.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade K (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Sequence events in informational text. With support, sequence three steps in a process or sequence pictures of two events in informational text read aloud.* **Identify the main idea in informational text.** With support, identify the main idea or topic of informational text read aloud.* **Retell informational text.** With support, retell key details of informational text read aloud.*
K.RI.2 With prompting and support, . . . retell key details of a text.	**Retell informational text.** With support, retell key details of informational text read aloud.
K.RI.2 With prompting and support, identify the main topic . . . of a text.	**Identify the main idea in informational text.** With support, identify the main idea or topic of informational text read aloud.
K.RI.2 With prompting and support, identify the main topic and retell key details of a text.	**Answer questions about key ideas and details.** With support, demonstrate understanding of key ideas and details shown in pictures or explicitly stated in literary or informational text read aloud.*
K.RI.3 With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.	**Identify cause-and-effect relationships.** With support, identify examples of cause and effect, using pictures or words in literary or informational text read aloud.* **Categorize and classify information in informational text.** With support, sort or label groups of individuals, ideas, events, or facts in informational text read aloud.* **Compare and contrast within an informational text.** With support, compare

**This skill is related to the aligned standard*

Grade K (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	or contrast individuals, ideas, events, or facts within an informational text read aloud.* **Sequence events in informational text.** With support, sequence three steps in a process or sequence pictures of two events in informational text read aloud.*
K.RI.4 With prompting and support, ask and answer questions about unknown words in a text.	**Determine word meaning.** With support, understand the meaning of Level K words and phrases, including academic and/ or domain-specific words, in literary or informational text read aloud.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level K words used in literary texts, grade-appropriate content areas, and other academic contexts.*
K.RI.7 With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts).	**Make inferences.** With support, draw conclusions or make inferences in read-aloud literary or informational text or in pictures.* **Answer questions about key ideas and details.** With support, demonstrate understanding of key ideas and details shown in pictures or explicitly stated in literary or informational text read aloud.*
K.RI.8 With prompting and support, identify the reasons an author gives to support points in a text.	**Identify reasons that support points in informational text.** Identify reasons an author gives to support a specific point in Level 1 informational text. **Identify reasons that support points in informational text.** With support, identify

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade K (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	a reason an author gives to support specific points in informational text read aloud.
K.RI.9 With prompting and support, identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).	**Identify similarities and differences in two informational texts.** With support, compare illustrations, descriptions, or procedures in two informational texts on the same topic read aloud. **Compare and contrast within an informational text.** With support, compare or contrast individuals, ideas, events, or facts within an informational text read aloud.* **Identify the main idea in informational text.** With support, identify the main idea or topic of informational text read aloud.*
K.RF.1.d Recognize and name all . . . lowercase letters of the alphabet.	**Understand organization and basic features of print.** Recognize and name all lowercase letters of the alphabet.
K.RF.1.d Recognize and name all upper[case] . . . letters of the alphabet.	**Understand organization and basic features of print.** Recognize and name all uppercase letters of the alphabet.
K.RF.2.a Recognize . . . rhyming words.	**Recognize rhyme.** Identify and match rhyming words.
K.RF.2.b . . . Blend . . . syllables in spoken words.	**Blend syllables.** Blend syllables in spoken two-syllable words.
K.RF.2.b Count . . . and segment syllables in spoken words.	**Segment syllables.** Segment and/or count syllables in spoken words.
K.RF.2.c . . . Segment onsets and rimes of single-syllable spoken words.	**Segment onset and rime.** Segment onset and rime of spoken one-syllable words.
K.RF.2.c Blend . . . onsets and rimes of single-syllable spoken words.	**Blend onset and rime.** Blend onset and rime of spoken one-syllable words.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade K (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
K.RF.2.d Isolate . . . medial vowel . . . sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words. (This does not include CVCs ending with /l/, /r/, or /x/.)	**Isolate and identify medial sounds.** Isolate medial vowel sounds (phonemes) in spoken three-phoneme CVC words. (This does not include CVC words ending with /l/, /r/, or /x/.)
K.RF.2.d Isolate . . . the . . . final sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words. (This does not include CVCs ending with /l/, /r/, or /x/.)	**Isolate and identify final sounds.** Isolate final sounds (phonemes) in spoken three-phoneme CVC words. (This does not include CVC words ending with /l/, /r/, or /x/.)
K.RF.2.d Isolate . . . the initial . . . sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words. (This does not include CVCs ending with /l/, /r/, or /x/.)	**Isolate and identify initial sounds.** Isolate initial sounds (phonemes) in spoken three-phoneme CVC words. (This does not include CVC words ending with /l/, /r/, or /x/.)
K.RF.2.e Add . . . individual sounds (phonemes) in simple, one-syllable words to make new words.	**Add phonemes.** Add individual sounds (phonemes) to spoken one-syllable words to make new words.
K.RF.2.e Add or substitute individual sounds (phonemes) in simple, one-syllable words to make new words.	**Substitute initial phonemes.** Substitute initial sounds (phonemes) in spoken one-syllable words to make new words.* **Substitute final phonemes.** Substitute final sounds (phonemes) in spoken one-syllable words to make new words.* **Substitute medial phonemes.** Substitute medial vowel sounds (phonemes) in spoken one-syllable words to make new words.*
K.RF.3.a Demonstrate basic knowledge of one-to-one letter-sound correspondences by producing the primary or many of the most frequent sounds for each consonant.	**Demonstrate basic knowledge of one-to-one letter-sound correspondences.** Match consonant sounds to letters in isolation: *s, f, r, m, p, l, t** **Demonstrate basic knowledge of one-to-one letter-sound correspondences.** Match

**This skill is related to the aligned standard*

Grade K (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	consonant sounds to letters in isolation: *d, n, g, b, h, c** **Demonstrate basic knowledge of one-to-one letter-sound correspondences.** Match consonant sounds to letters in isolation: *v, j, w, x, k, z, y** **Demonstrate basic knowledge of one-to-one letter-sound correspondences.** Match consonant sounds to letters: soft *c*, soft *g*.*
K.RF.3.b Associate the long . . . sounds with common spellings (graphemes) for the five major vowels.	**Match long vowel sounds with common spellings for the five major vowels.** Match long vowel sounds to individual letters in isolation. **Match long vowel sounds with common spellings for the five major vowels.** Recognize the long vowel sound within one-syllable words.
K.RF.3.b Associate the long and short sounds with common spellings (graphemes) for the five major vowels.	**Decode regularly spelled one-syllable words with short vowels.** Decode simple VC and CVC words with short *i*, short *o*, or short *a*.* **Match short vowel sounds with common spellings for the five major vowels.** Match short vowel sounds to letters in isolation: short *a** **Match short vowel sounds with common spellings for the five major vowels.** Match short vowel sounds to letters in isolation: short *i** **Match short vowel sounds with common spellings for the five major vowels.** Match

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade K (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	short vowel sounds to letters in isolation: short *o** **Match short vowel sounds with common spellings for the five major vowels.** Match short vowel sounds to letters in isolation: short *e** **Match short vowel sounds with common spellings for the five major vowels.** Match short vowel sounds to letters in isolation: short *u** **Match long vowel sounds with common spellings for the five major vowels.** Match long vowel sounds to letters: *y**
K.RF.3.c Read common high-frequency words by sight (e.g., the, of, to, you, she, my, is, are, do, does).	**Recognize Level K high-frequency words.** Read high-frequency words such as the following: *the, to, and, a, I, you, it, in, said, for, up, look, is, go, we, not, my, me, big, can, see, help, make, come, on, at, blue, red, jump, like, yes, here, run, am.**
K.RF.3.d Distinguish between similarly spelled words by identifying the sounds of the letters that differ.	**Distinguish between similarly spelled words.** Distinguish between similarly spelled words by identifying the sounds of the letters that differ.
K.L.4.a Identify new meanings for familiar words and apply them accurately (e.g., knowing duck is a bird and learning the verb to duck).	**Understand word relationships.** Recognize antonyms. Sort words into categories and define words by category. Demonstrate understanding of multiple-meaning words and shades of meaning.*
K.L.4.b Use the most frequently occurring inflections and affixes (e.g., -ed, -s, re-, un-, pre-, -ful, -less) as a clue to the meaning of an unknown word.	**Use prefixes, suffixes, and base words.** Understand and use meaningful word parts: prefixes *(un-, re-, pre-)*, suffixes *(-ful, -less)*, inflectional endings *(-s, -es, -ed, -ing)*, and base words. Identify compound words.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade K (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
K.L.5.a Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent.	**Understand word relationships.** Recognize antonyms. Sort words into categories and define words by category. Demonstrate understanding of multiple-meaning words and shades of meaning.*
K.L.5.b Demonstrate understanding of frequently occurring verbs and adjectives by relating them to their opposites (antonyms).	**Understand word relationships.** Recognize antonyms. Sort words into categories and define words by category. Demonstrate understanding of multiple-meaning words and shades of meaning.*
K.L.5.c Identify real-life connections between words and their use (e.g., note places at school that are colorful).	**Understand word relationships.** Sort words into categories, define words by category, and identify real-life connections between words. Demonstrate understanding of multiple-meaning words and shades of meaning.*
K.L.5.d Distinguish shades of meaning among verbs describing the same general action (e.g., walk, march, strut, prance) by acting out the meanings.	**Understand word relationships.** Recognize antonyms. Sort words into categories and define words by category. Demonstrate understanding of multiple-meaning words and shades of meaning.*
K.L.6 Use words and phrases acquired through conversations, reading and being read to, and responding to texts.	**Determine word meaning.** With support, understand the meaning of Level K words and phrases, including academic and/ or domain-specific words, in literary or informational text read aloud.* **Understand word relationships.** Recognize antonyms. Sort words into categories and define words by category. Demonstrate understanding of multiple-meaning words and shades of meaning.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level K words used in

**This skill is related to the aligned standard*

Grade K (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	literary texts, grade-appropriate content areas, and other academic contexts.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 1

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
1.RL.1 . . . Answer questions about key details in a text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 1 literary or informational text. **Answer questions about key ideas and details.** Demonstrate understanding of key ideas and details explicitly stated in Level 1 literary or informational text.
1.RL.1 Ask and answer questions about key details in a text.	**Identify cause-and-effect relationships.** Identify cause-and-effect relationships in Level 1 literary or informational text.* **Identify sequence of events.** Identify the sequence of events (beginning, middle, end) in Level 1 literary or informational text.* **Compare and contrast within a literary text.** Compare or contrast key details about characters and/or events within a Level 1 literary text.* **Describe story elements in literary text.** Identify and describe setting or events in Level 1 literary text, using key details.* **Retell literary text.** Retell what happens at the beginning, middle, or end in Level 1 literary text.* **Describe characters in literary text.** Identify and describe characters in Level 1 literary text, using key details.* **Connect text and visuals in literary text.** Use details from illustrations and from text

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	to describe the characters, setting, or events in Level 1 literary text.*
1.RL.2 . . . demonstrate understanding of [a story's] central message or lesson.	**Determine the message or lesson in literary text.** Determine the central message or lesson in Level 1 literary text.
1.RL.2 Retell stories . . .	**Retell literary text.** Retell what happens at the beginning, middle, or end in Level 1 literary text.
1.RL.2 Retell stories, including key details, and demonstrate understanding of their central message or lesson.	**Identify sequence of events.** Identify the sequence of events (beginning, middle, end) in Level 1 literary or informational text.* **Answer questions about key ideas and details.** Demonstrate understanding of key ideas and details explicitly stated in Level 1 literary or informational text.*
1.RL.3 Describe . . . settings and major events in a story, using key details.	**Describe story elements in literary text.** Identify and describe setting or events in Level 1 literary text, using key details.
1.RL.3 Describe characters . . . in a story, using key details.	**Describe characters in literary text.** Identify and describe characters in Level 1 literary text, using key details.
1.RL.3 Describe characters, settings, and major events in a story, using key details.	**Identify sequence of events.** Identify the sequence of events (beginning, middle, end) in Level 1 literary or informational text.*
1.RL.4 Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.	**Determine word meaning.** Understand the meaning of words and phrases in Level 1 literary or informational text, including academic and/or domain-specific words. Identify words or phrases that suggest feelings or appeal to the senses.*
1.RL.6 Identify who is telling the story at various points in a text.	**Identify point of view in literary text.** Identify who is telling the story in Level 1 literary text.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Identify point of view in literary text. Identify the point of view of characters in Level 2 literary text.*
1.RL.7 Use illustrations and details in a story to describe its . . . setting or events.	**Describe story elements in literary text.** Identify and describe setting or events in Level 1 literary text, using key details.
1.RL.7 Use illustrations and details in a story to describe its characters . . .	**Describe characters in literary text.** Identify and describe characters in Level 1 literary text, using key details.
1.RL.7 Use illustrations and details in a story to describe its characters, setting, or events.	**Connect text and visuals in literary text.** Use details from illustrations and from text to describe the characters, setting, or events in Level 1 literary text. **Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 1 literary or informational text.* **Answer questions about key ideas and details.** Demonstrate understanding of key ideas and details explicitly stated in Level 1 literary or informational text.*
1.RL.9 Compare and contrast the adventures and experiences of characters in stories.	**Compare story elements in two literary texts.** Compare the adventures and experiences of characters in two Level 1 literary texts. **Compare and contrast within a literary text.** Compare or contrast key details about characters and/or events within a Level 1 literary text.* **Describe story elements in literary text.** Identify and describe setting or events in Level 1 literary text, using key details.*

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Describe characters in literary text. Identify and describe characters in Level 1 literary text, using key details.*
1.RI.1 . . . Answer questions about key details in a text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 1 literary or informational text. **Answer questions about key ideas and details.** Demonstrate understanding of key ideas and details explicitly stated in Level 1 literary or informational text.
1.RI.1 Ask and answer questions about key details in a text.	**Identify cause-and-effect relationships.** Identify cause-and-effect relationships in Level 1 literary or informational text.* **Identify sequence of events.** Identify the sequence of events (beginning, middle, end) in Level 1 literary or informational text.* **Compare and contrast within an informational text.** Compare or contrast key details about people and/or events within a Level 1 informational text.* **Retell informational text.** Retell the most important ideas and details in Level 1 informational text.* **Identify main idea in informational text.** Identify the main idea or topic in Level 1 informational text.* **Connect text and visuals in informational text.** Use details from illustrations and from

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	text to describe the key ideas in Level 1 informational text.*
1.RI.2 . . . Retell key details of a text.	**Retell informational text.** Retell the most important ideas and details in Level 1 informational text.
1.RI.2 Identify the main topic . . . of a text.	**Identify main idea in informational text.** Identify the main idea or topic in Level 1 informational text.
1.RI.2 Identify the main topic and retell key details of a text.	**Answer questions about key ideas and details.** Demonstrate understanding of key ideas and details explicitly stated in Level 1 literary or informational text.*
1.RI.3 Describe the connection between two individuals, events, ideas, or pieces of information in a text.	**Identify cause-and-effect relationships.** Identify cause-and-effect relationships in Level 1 literary or informational text.* **Identify sequence of events.** Identify the sequence of events (beginning, middle, end) in Level 1 literary or informational text.* **Categorize and classify information in informational text.** Categorize or classify individuals, ideas, events, or facts in Level 1 informational text.* **Compare and contrast within an informational text.** Compare or contrast key details about people and/or events within a Level 1 informational text.*
1.RI.4 Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.	**Determine word meaning.** Understand the meaning of words and phrases in Level 1 literary or informational text, including academic and/or domain-specific words. Identify words or phrases that suggest feelings or appeal to the senses.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Use general academic and domain-specific vocabulary. Demonstrate knowledge of Level 1 words used in literary texts, grade-appropriate content areas, and other academic contexts.
1.RI.5 Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.	**Use text features in informational text.** Use headings, tables of contents, glossaries, or other text features to locate key facts or information in Level 1 informational text.
1.RI.6 Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.	**Use text features in informational text.** Use headings, tables of contents, glossaries, or other text features to locate key facts or information in Level 1 informational text.* **Connect text and visuals in informational text.** Use details from illustrations and from text to describe the key ideas in Level 1 informational text.*
1.RI.7 Use the illustrations and details in a text to describe its key ideas.	**Connect text and visuals in informational text.** Use details from illustrations and from text to describe the key ideas in Level 1 informational text. **Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 1 literary or informational text.* **Answer questions about key ideas and details.** Demonstrate understanding of key ideas and details explicitly stated in Level 1 literary or informational text.*
1.RI.8 Identify the reasons an author gives to support points in a text.	**Identify reasons that support points in informational text.** Identify reasons an author gives to support a specific point in Level 1 informational text.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
1.RI.9 Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).	**Identify similarities and differences in two informational texts.** Compare illustrations, descriptions, or procedures in two Level 1 informational texts on the same topic. **Compare and contrast within an informational text.** Compare or contrast key details about people and/or events within a Level 1 informational text.* **Identify main idea in informational text.** Identify the main idea or topic in Level 1 informational text.*
1.RF.2.a Distinguish long from short vowel sounds in spoken single-syllable words.	**Distinguish long and short vowel sounds.** Distinguish long and short vowel sounds in spoken one-syllable words.
1.RF.2.b Orally produce single-syllable words by blending sounds (phonemes), including consonant blends.	**Blend sounds in words with two phonemes.** Blend sounds (phonemes) to identify spoken one-syllable words with two phonemes. **Blend sounds in words with three phonemes.** Blend sounds (phonemes) to identify spoken one-syllable words with three phonemes. **Blend sounds in words with four to five phonemes.** Blend sounds (phonemes), including consonant blends, to identify spoken one-syllable words with four to five phonemes.
1.RF.2.c Isolate . . . final sounds (phonemes) in spoken single-syllable words.	**Isolate and identify final sounds.** Identify final sounds (phonemes) in spoken words with three or more phonemes.

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
1.RF.2.c Isolate . . . initial sounds (phonemes) in spoken single-syllable words.	**Isolate and identify initial sounds.** Identify initial sounds (phonemes) in spoken words with three or more phonemes.
1.RF.2.c Isolate . . . medial vowel . . . sounds (phonemes) in spoken single-syllable words.	**Isolate and identify medial sounds.** Identify medial vowel sounds (phonemes) in spoken words with three or more phonemes.
1.RF.2.d Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes).	**Segment sounds in words with two to three phonemes.** Segment spoken one-syllable words into their complete sequence of individual sounds (two to three phonemes). **Segment sounds in words with three to five phonemes.** Segment spoken one-syllable words into their complete sequence of individual sounds (three to five phonemes). **Isolate and identify initial sounds.** Identify initial sounds (phonemes) in spoken words with three or more phonemes.* **Isolate and identify final sounds.** Identify final sounds (phonemes) in spoken words with three or more phonemes.* **Isolate and identify medial sounds.** Identify medial vowel sounds (phonemes) in spoken words with three or more phonemes.*
1.RF.3.a Know the spelling-sound correspondences for common consonant digraphs.	**Demonstrate basic knowledge of sound-spelling correspondences for common consonant digraphs in isolation.** Match spoken and written sounds of consonant

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	digraphs *(th, sh, ch, wh, ck)* to letters in isolation. **Demonstrate basic knowledge of sound-spelling correspondences for common initial consonant digraphs.** Match spoken and written consonant digraphs *(th, sh, ch, wh)* at the beginning of a word. **Demonstrate basic knowledge of sound-spelling correspondences for common final consonant digraphs.** Match spoken and written consonant digraphs *(th, sh, ch, ck, ng)* at the end of a word.
1.RF.3.b Decode regularly spelled one-syllable words.	**Decode regularly spelled one-syllable words with short *a*.** Decode simple VC and CVC words with short *a*, beginning with an initial continuous sound and ending with either a stop or a continuous sound.* **Decode regularly spelled one-syllable words with short vowels.** Decode simple VC and CVC words with short *i*, short *o*, or short *a*.* **Decode regularly spelled one-syllable words with short vowels.** Decode simple VC and CVC words with short *e* or short *u*.* **Decode regularly spelled one-syllable words with initial consonant blends.** Decode CCVC words beginning with *l*-blends or *r*-blends, such as *plug* or *drip*.* **Decode regularly spelled one-syllable words with initial consonant blends.**

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Decode words beginning with two- or three-letter *s*-blends: CCVCC *(snack)*, CCCVC *(sprig)*, and CCCVCC *(stress)*.* **Decode regularly spelled one-syllable words with final double consonants or *ck*.** Decode words beginning with an initial continuous sound and ending with either a final double consonant or *ck:* VCC *(egg)* and CVCC *(fill, rock)*.* **Decode regularly spelled one-syllable words with final consonant blends.** Decode CVCC words beginning with an initial stop sound and ending with a blend, such as *task* or *bent*.* **Decode regularly spelled one-syllable words with *r*-controlled vowels.** Decode words with *r*-controlled vowels *(ar, er, ir, or, ur)*.*
1.RF.3.c Know . . . common vowel team conventions for representing long vowel sounds.	**Decode regularly spelled one-syllable words with common long vowel teams.** Decode words with long vowel digraphs and other long vowel teams: *ai, ay, ee, ea, oa; igh, ow (grow).*
1.RF.3.c Know final -e . . . conventions for representing long vowel sounds.	**Decode regularly spelled one-syllable words with final -*e*.** Decode words with final -*e* conventions. **Demonstrate basic knowledge of final -*e* conventions.** Identify the long vowel sound within one-syllable CVCe words.
1.RF.3.e Decode two-syllable words following basic patterns by breaking the words into syllables.	**Decode two-syllable words.** Decode two-syllable words following a VC/CV pattern.*

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Decode two-syllable words with short vowels. Decode two-syllable short vowel words following VC/CV, VCCCV, or VC/V patterns.*
1.RF.3.f Read words with inflectional endings.	**Decode words with inflectional endings and no spelling changes.** Decode words with common inflectional endings, such as *-s, -es, -ed, -ing,* that don't include spelling changes.* **Decode words with inflectional endings and spelling changes.** Decode words with common inflectional endings, such as *-es, -ed, -ing,* that include spelling changes.*
1.RF.3.g Recognize and read grade-appropriate irregularly spelled words.	**Recognize Level 1 high-frequency words.** Read high-frequency words, including common irregularly spelled words, such as the following: *did, get, this, will, went, are, came, ride, us, day, last, say, all, there, out, be, ran, brown, he, was, his, that, she, play, three, funny, two, ate, were, your, please, hot, little, four, saw, well.** **Recognize Level 1 high-frequency words.** Read high-frequency words, including common irregularly spelled words, such as the following: *car, man, boy, if, got, six, has, thank, next, hand, may, stop, fly, round, give, think, let, have, read, any, off, how, know, put, take, ask, an, over, just, from, as, then, when, them, of, had, him, her, some, where, old, by, after, home, stand, girl.** **Recognize Level 1 high-frequency words.** Read high-frequency words, including common irregularly spelled words, such as the following: *now, no, do, one, what, so,*

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	*white, our, fast, sit, eat, who, new, must, black, into, or, its, good, want, too, pretty, they, but, with, end.**
1.L.4.a Use sentence-level context as a clue to the meaning of a word or phrase.	**Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 1 words used in literary texts, grade-appropriate content areas, and other academic contexts. **Determine word meaning.** Understand the meaning of words and phrases in Level 1 literary or informational text, including academic and/or domain-specific words. Identify words or phrases that suggest feelings or appeal to the senses.* **Understand word relationships.** Sort words into categories, define words by category, and identify real-life connections between words. Demonstrate understanding of multiple-meaning words and shades of meaning.*
1.L.4.b Use frequently occurring affixes as a clue to the meaning of a word.	**Use prefixes, suffixes, and base words.** Understand and use meaningful word parts: prefixes *(un-, re-, pre-)*, suffixes *(-ful, -less)*, inflectional endings *(-s, -es, -ed, -ing)*, and base words. Identify compound words.*
1.L.4.c Identify frequently occurring root words (e.g., look) and their inflectional forms (e.g., looks, looked, looking).	**Use prefixes, suffixes, and base words.** Understand and use meaningful word parts: prefixes *(un-, re-, pre-)*, suffixes *(-ful, -less)*, inflectional endings *(-s, -es, -ed, -ing)*, and base words. Identify compound words.*
1.L.5.a Sort words into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent.	**Understand word relationships.** Sort words into categories, define words by category, and identify real-life connections between words. Demonstrate understanding

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	of multiple-meaning words and shades of meaning.*
1.L.5.b Define words by category and by one or more key attributes (e.g., a duck is a bird that swims; a tiger is a large cat with stripes).	**Understand word relationships.** Sort words into categories, define words by category, and identify real-life connections between words. Demonstrate understanding of multiple-meaning words and shades of meaning.*
1.L.5.c Identify real-life connections between words and their use (e.g., note places at home that are cozy).	**Understand word relationships.** Sort words into categories, define words by category, and identify real-life connections between words. Demonstrate understanding of multiple-meaning words and shades of meaning.*
1.L.5.d Distinguish shades of meaning among verbs differing in manner (e.g., look, peek, glance, stare, glare, scowl) and adjectives differing in intensity (e.g., large, gigantic) by defining or choosing them or by acting out the meanings.	**Understand word relationships.** Sort words into categories, define words by category, and identify real-life connections between words. Demonstrate understanding of multiple-meaning words and shades of meaning.*
1.L.6 Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., because).	**Determine word meaning.** Understand the meaning of words and phrases in Level 1 literary or informational text, including academic and/or domain-specific words. Identify words or phrases that suggest feelings or appeal to the senses.* **Understand word relationships.** Sort words into categories, define words by category, and identify real-life connections between words. Demonstrate understanding of multiple-meaning words and shades of meaning.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 1 words used in literary

Grade 1 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	texts, grade-appropriate content areas, and other academic contexts.*

**This skill is related to the aligned standard*

Grade 2

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
2.RL.1 . . . Answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 2 literary or informational text. **Answer questions about key ideas and details.** Answer such questions as *who, what, where, when, why,* and *how* to demonstrate understanding of key details in Level 2 literary or informational text.
2.RL.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.	**Compare and contrast within a text.** Compare or contrast key details about characters and/or events within a Level 2 literary text. Compare or contrast people, events, and/or information within a Level 2 informational text.* **Identify cause-and-effect relationships.** Identify cause-and-effect relationships in Level 2 literary or informational text.* **Identify sequence of events.** Identify sequence of events in Level 2 literary or informational text.* **Describe story elements in literary text.** Identify and describe the plot, setting, and events in Level 2 literary text, including how the beginning introduces the story and the ending concludes the action.* **Retell literary text.** Retell and/or summarize a story, poem, or other Level 2 literary text.* **Describe characters in literary text.** Describe how characters in a story respond

**This skill is related to the aligned standard*

Grade 2 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	to major events and challenges in Level 2 literary text.* **Connect text and visuals in literary text.** Use details from illustrations and from text to describe the characters, setting, or events in Level 2 literary text.*
2.RL.2 . . . Determine . . . [the] central message, lesson, or moral [of stories].	**Determine the message, lesson, or moral in literary text.** Determine the central message, lesson, or moral in Level 2 literary text.
2.RL.2 Recount stories . . .	**Retell literary text.** Retell and/or summarize a story, poem, or other Level 2 literary text.
2.RL.2 Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral.	**Identify sequence of events.** Identify sequence of events in Level 2 literary or informational text.*
2.RL.3 Describe how characters in a story respond to major events and challenges.	**Describe characters in literary text.** Describe how characters in a story respond to major events and challenges in Level 2 literary text.
2.RL.4 Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song.	**Identify author's use of language.** Identify an author's use of descriptive language and/or literary devices, such as rhyme or alliteration, in Level 2 literary or informational text.*
2.RL.5 Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action.	**Describe story elements in literary text.** Identify and describe the plot, setting, and events in Level 2 literary text, including how the beginning introduces the story and the ending concludes the action.* **Retell literary text.** Retell and/or summarize a story, poem, or other Level 2 literary text.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 2 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
2.RL.6 Acknowledge differences in the points of view of characters, including by speaking in a different voice for each character when reading dialogue aloud.	**Identify point of view in literary text.** Identify the point of view of characters in Level 2 literary text.
2.RL.7 Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.	**Connect text and visuals in literary text.** Use details from illustrations and from text to describe the characters, setting, or events in Level 2 literary text.
2.RL.9 Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures.	**Compare story elements in two literary texts.** Compare versions of the same story presented in two Level 2 literary texts. **Compare and contrast within a text.** Compare or contrast key details about characters and/or events within a Level 2 literary text. Compare or contrast people, events, and/or information within a Level 2 informational text.* **Describe characters in literary text.** Describe how characters in a story respond to major events and challenges in Level 2 literary text.*
2.RI.1 . . . Answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 2 literary or informational text. **Answer questions about key ideas and details.** Answer such questions as *who, what, where, when, why,* and *how* to demonstrate understanding of key details in Level 2 literary or informational text.
2.RI.1 Ask and answer such questions as who, what, where, when, why, and how to	**Compare and contrast within a text.** Compare or contrast key details about characters and/or events within a Level 2

**This skill is related to the aligned standard*

Grade 2 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
demonstrate understanding of key details in a text.	literary text. Compare or contrast people, events, and/or information within a Level 2 informational text.* **Identify cause-and-effect relationships.** Identify cause-and-effect relationships in Level 2 literary or informational text.* **Identify sequence of events.** Identify sequence of events in Level 2 literary or informational text.* **Retell informational text.** Retell and/or summarize the most important ideas and details in Level 2 informational text.* **Determine main idea and key details in informational text.** Identify the main topic, the main idea, and/or key details in Level 2 informational text. Identify the focus of specific paragraphs within the text.*
2.RI.2 Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.	**Determine main idea and key details in informational text.** Identify the main topic, the main idea, and/or key details in Level 2 informational text. Identify the focus of specific paragraphs within the text. **Retell informational text.** Retell and/or summarize the most important ideas and details in Level 2 informational text.*
2.RI.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.	**Compare and contrast within a text.** Compare or contrast key details about characters and/or events within a Level 2 literary text. Compare or contrast people, events, and/or information within a Level 2 informational text.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 2 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Identify cause-and-effect relationships. Identify cause-and-effect relationships in Level 2 literary or informational text.* **Identify sequence of events.** Identify sequence of events in Level 2 literary or informational text.*
2.RI.4 Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.	**Determine word meaning.** Understand the meaning of words and phrases in Level 2 literary or informational text, including academic and/or domain-specific words. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 2 words used in literary texts, grade-appropriate content areas, and other academic contexts.
2.RI.5 Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.	**Use text features in informational text.** Use captions, pictures, bold print, headings, glossaries, indexes, or other text features to locate key facts or information in Level 2 informational text.
2.RI.6 Identify the main purpose of a text, including what the author wants to answer, explain, or describe.	**Identify author's purpose.** Identify the author's purpose in Level 2 literary or informational text.
2.RI.7 Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.	**Use text features in informational text.** Use captions, pictures, bold print, headings, glossaries, indexes, or other text features to locate key facts or information in Level 2 informational text.*
2.RI.8 Describe how reasons support specific points the author makes in a text.	**Evaluate argument in informational text.** Describe how reasons support specific points in Level 2 informational text.

**This skill is related to the aligned standard*

Grade 2 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
2.RI.9 Compare and contrast the most important points presented by two texts on the same topic.	**Compare important points in two informational texts.** Compare the most important points in two Level 2 informational texts on the same topic. **Compare and contrast within a text.** Compare or contrast key details about characters and/or events within a Level 2 literary text. Compare or contrast people, events, and/or information within a Level 2 informational text.* **Determine main idea and key details in informational text.** Identify the main topic, the main idea, and/or key details in Level 2 informational text. Identify the focus of specific paragraphs within the text.*
2.RF.3.a Distinguish long and short vowels when reading regularly spelled one-syllable words.	**Distinguish long and short vowels.** Distinguish long and short vowels when reading regularly spelled one-syllable words.
2.RF.3.b Know spelling-sound correspondences for additional common vowel teams.	**Decode regulary spelled one- and two-syllable words with common vowel teams.** Decode words with digraphs, diphthongs, and other vowel teams: *oo (moon), oo (foot), ie (piece); ou (out), ow (cow), oy (boy), oi (oil); ew (blew), ew (few), aw (law), au (author), ou (young).** **Decode two-syllable words with long vowels.** Decode regularly spelled two-syllable words with long vowels: open syllables, vowel team syllables, CVCe syllables.*
2.RF.3.c Decode regularly spelled two-syllable words with long vowels.	**Decode two-syllable words with long vowels.** Decode regularly spelled two-

**This skill is related to the aligned standard*

Grade 2 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	syllable words with long vowels: open syllables, vowel team syllables, CVCe syllables.
2.RF.3.d Decode words with common prefixes and suffixes.	**Decode two-syllable words with prefixes and suffixes.** Decode two-syllable words with common prefixes and suffixes.*
2.RF.3.e Identify words with inconsistent but common spelling-sound correspondences.	**Decode words with inconsistent sound-spelling correspondences.** Decode words with inconsistent but common sound-spelling correspondences, such as *come* or *kind.*
2.RF.3.f Recognize and read grade-appropriate irregularly spelled words.	**Recognize Level 2 high-frequency words.** Read high-frequency words, including common irregularly spelled words, such as the following: *going, walk, again, small, why, always, because, same, part, sleep, five, before, been, mother, school, morning, color.** **Recognize Level 2 high-frequency words.** Read high-frequency words, including common irregularly spelled words, such as the following: *pair, cold, work, first, should, every, many, once, name, open, live, soon, under.** **Recognize Level 2 high-frequency words.** Read high-frequency words, including common irregularly spelled words, such as the following: *while, each, seem, tree, could, does, goes, write, made, would, very, yours, around, year, left, house, away, yellow, don't, right, green, their, call, sure, thing, near, high.** **Recognize Level 2 high-frequency words.** Read high-frequency words, including

**This skill is related to the aligned standard*

Grade 2 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	common irregularly spelled words, such as the following: *through, keep, pull, both, which, also, until, gave, buy, those, use, down, began, such, way, most, best, upon, these, sing, wish.**
2.L.4.a Use sentence-level context as a clue to the meaning of a word or phrase.	**Determine word meaning.** Understand the meaning of words and phrases in Level 2 literary or informational text, including academic and/or domain-specific words. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 2 words used in literary texts, grade-appropriate content areas, and other academic contexts. **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, shades of meaning, and literary devices such as rhyme.*
2.L.4.b Determine the meaning of the new word formed when a known prefix is added to a known word (e.g., happy/unhappy, tell/retell).	**Use prefixes, suffixes, and base words.** Understand and use meaningful word parts: prefixes *(un-, re-, pre-)*, suffixes *(-ful, -less)*, and base words. Identify compound words.*
2.L.4.c Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., addition, additional).	**Use prefixes, suffixes, and base words.** Understand and use meaningful word parts: prefixes *(un-, re-, pre-)*, suffixes *(-ful, -less)*, and base words. Identify compound words.*
2.L.4.d Use knowledge of the meaning of individual words to predict the meaning of compound words (e.g., birdhouse, lighthouse, housefly; bookshelf, notebook, bookmark).	**Use prefixes, suffixes, and base words.** Understand and use meaningful word parts: prefixes *(un-, re-, pre-)*, suffixes *(-ful, -less)*, and base words. Identify compound words.*

**This skill is related to the aligned standard*

Grade 2 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
2.L.4.e Use glossaries and beginning dictionaries, both print and digital, to determine or clarify the meaning of words and phrases.	**Use text features in informational text.** Use captions, pictures, bold print, headings, glossaries, indexes, or other text features to locate key facts or information in Level 2 informational text.*
2.L.5.b Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny).	**Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, shades of meaning, and literary devices such as rhyme.*
2.L.6 Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., When other kids are happy that makes me happy).	**Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, shades of meaning, and literary devices such as rhyme.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 2 words used in literary texts, grade-appropriate content areas, and other academic contexts.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 3

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
3.RL.1 . . . Answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	**Answer questions about key ideas and details.** Answer questions to demonstrate understanding of key ideas and details in Level 3 literary or informational text, referring explicitly to the text as the basis for the answers.
3.RL.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 3 literary or informational text.* **Compare and contrast within a text.** Compare or contrast key details about characters and/or events within a Level 3 literary text. Compare or contrast people, events, and/or information within a Level 3 informational text.* **Identify cause-and-effect relationships.** Identify cause-and-effect relationships in Level 3 literary or informational text.* **Identify sequence of events.** Identify sequence of events in Level 3 literary or informational text.* **Identify story elements and the parts of a poem.** Identify the elements of Level 3 literary text, such as setting, plot, problem, and solution. Identify parts of a poem and determine how each successive element or part builds on earlier sections.* **Retell literary text.** Retell and/or summarize a story, poem, or other Level 3 literary text.*

**This skill is related to the aligned standard*

Grade 3 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Describe characters in literary text. Identify or infer characters' traits in Level 3 literary text, based on what they say, what they do, or how they feel. Determine how their actions contribute to the sequence of events.*
3.RL.2 . . . Determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.	**Determine the message, lesson, or moral in literary text.** Determine the central message, lesson, or moral in Level 3 literary text and identify how it is conveyed through key details.
3.RL.2 Recount stories . . .	**Retell literary text.** Retell and/or summarize a story, poem, or other Level 3 literary text.
3.RL.2 Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.	**Identify sequence of events.** Identify sequence of events in Level 3 literary or informational text.*
3.RL.3 Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.	**Describe characters in literary text.** Identify or infer characters' traits in Level 3 literary text, based on what they say, what they do, or how they feel. Determine how their actions contribute to the sequence of events. **Identify sequence of events.** Identify sequence of events in Level 3 literary or informational text.*
3.RL.4 Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.	**Interpret figurative language.** Identify or interpret an author's use of figurative language, including metaphors and similes, in Level 3 literary or informational text. **Determine word meaning.** Understand the meaning of words and phrases in Level

**This skill is related to the aligned standard*

Grade 3 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	3 literary or informational text, including academic and/or domain-specific words.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 3 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
3.RL.5 Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections.	**Identify story elements and the parts of a poem.** Identify the elements of Level 3 literary text, such as setting, plot, problem, and solution. Identify parts of a poem and determine how each successive element or part builds on earlier sections.* **Retell literary text.** Retell and/or summarize a story, poem, or other Level 3 literary text.*
3.RL.6 Distinguish their own point of view from that of the narrator or those of the characters.	**Identify point of view in literary text.** Identify the point of view of a narrator or a character in Level 3 literary text. Distinguish a narrator's or character's point of view from one's own point of view as a reader.*
3.RL.7 Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).	**Connect text and visuals in literary text.** Analyze how details in illustrations help convey mood or emphasize aspects of a character or setting in Level 3 literary text.
3.RL.9 Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series).	**Compare story elements and themes in two literary texts.** Compare the settings, plots, and themes of two Level 3 literary texts that contain the same or similar characters.

**This skill is related to the aligned standard*

Grade 3 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Identify sequence of events. Identify sequence of events in Level 3 literary or informational text.* **Identify story elements and the parts of a poem.** Identify the elements of Level 3 literary text, such as setting, plot, problem, and solution. Identify parts of a poem and determine how each successive element or part builds on earlier sections.* **Determine the message, lesson, or moral in literary text.** Determine the central message, lesson, or moral in Level 3 literary text and identify how it is conveyed through key details.* **Describe characters in literary text.** Identify or infer characters' traits in Level 3 literary text, based on what they say, what they do, or how they feel. Determine how their actions contribute to the sequence of events.*
3.RI.1 . . . Answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	**Answer questions about key ideas and details.** Answer questions to demonstrate understanding of key ideas and details in Level 3 literary or informational text, referring explicitly to the text as the basis for the answers.
3.RI.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 3 literary or informational text.* **Compare and contrast within a text.** Compare or contrast key details about characters and/or events within a Level 3

**This skill is related to the aligned standard*

Grade 3 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	literary text. Compare or contrast people, events, and/or information within a Level 3 informational text.* **Identify cause-and-effect relationships.** Identify cause-and-effect relationships in Level 3 literary or informational text.* **Identify sequence of events.** Identify sequence of events in Level 3 literary or informational text.* **Retell informational text.** Retell and/or summarize the main idea and key details of Level 3 informational text.* **Determine main idea and key details in informational text.** Identify the main idea in Level 3 informational text and explain how it is supported by key details.*
3.RI.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.	**Determine main idea and key details in informational text.** Identify the main idea in Level 3 informational text and explain how it is supported by key details. **Retell informational text.** Retell and/or summarize the main idea and key details of Level 3 informational text.*
3.RI.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.	**Compare and contrast within a text.** Compare or contrast key details about characters and/or events within a Level 3 literary text. Compare or contrast people, events, and/or information within a Level 3 informational text.*

**This skill is related to the aligned standard*

Grade 3 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Identify cause-and-effect relationships. Identify cause-and-effect relationships in Level 3 literary or informational text.* **Identify sequence of events.** Identify sequence of events in Level 3 literary or informational text.* **Identify text structure in informational text.** Identify the logical connection between particular sentences and paragraphs in Level 3 informational text, such as comparison, cause/effect, and sequence.*
3.RI.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.	**Determine word meaning.** Understand the meaning of words and phrases in Level 3 literary or informational text, including academic and/or domain-specific words. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 3 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
3.RI.5 Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.	**Use text features in informational text.** Use headings, graphics, or other text features to locate key facts or information in Level 3 informational text.
3.RI.6 Distinguish their own point of view from that of the author of a text.	**Identify author's point of view or purpose in informational text.** Identify the author's point of view or purpose in Level 3 informational text. Distinguish the author's point of view from one's own point of view as a reader.*
3.RI.7 Use information gained from illustrations (e.g., maps, photographs)	**Answer questions about key ideas and details.** Answer questions to demonstrate

**This skill is related to the aligned standard*

Grade 3 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).	understanding of key ideas and details in Level 3 literary or informational text, referring explicitly to the text as the basis for the answers.* **Use text features in informational text.** Use headings, graphics, or other text features to locate key facts or information in Level 3 informational text.*
3.RI.8 Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).	**Identify text structure in informational text.** Identify the logical connection between particular sentences and paragraphs in Level 3 informational text, such as comparison, cause/effect, and sequence. **Compare and contrast within a text.** Compare or contrast key details about characters and/or events within a Level 3 literary text. Compare or contrast people, events, and/or information within a Level 3 informational text.* **Identify cause-and-effect relationships.** Identify cause-and-effect relationships in Level 3 literary or informational text.* **Identify sequence of events.** Identify sequence of events in Level 3 literary or informational text.*
3.RI.9 Compare and contrast the most important points and key details presented in two texts on the same topic.	**Compare important points and key details in two informational texts.** Compare the most important points and key details in two Level 3 informational texts on the same topic.

**This skill is related to the aligned standard*

Grade 3 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Compare and contrast within a text. Compare or contrast key details about characters and/or events within a Level 3 literary text. Compare or contrast people, events, and/or information within a Level 3 informational text.* **Determine main idea and key details in informational text.** Identify the main idea in Level 3 informational text and explain how it is supported by key details.*
3.RF.3.a Identify and know the meaning of the most common prefixes and derivational suffixes.	**Use prefixes, suffixes, and base words.** Use common, grade-appropriate prefixes *(in-, dis-, mis-, non-)*, suffixes *(-y, -ly, -ily, -er, -est, -ness)*, and base words to determine the meaning of words and phrases.*
3.RF.3.b Decode words with common Latin suffixes.	**Decode multisyllabic words with prefixes and suffixes.** Decode multisyllabic words with common prefixes and suffixes.*
3.RF.3.c Decode multisyllable words.	**Decode multisyllabic words.** Decode common three- and four-syllable words. **Decode multisyllabic words.** Decode five-syllable words and less common three- and four-syllable words. **Identify syllable sounds.** Identify syllable sounds in multisyllabic words.* **Decode multisyllabic words with difficult letter-sound correspondences.** Decode multisyllabic words with difficult vowel + /r/ sounds.*

**This skill is related to the aligned standard*

Grade 3 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Decode multisyllabic words with schwa sounds. Decode multisyllabic words with schwa + *l* or schwa + *n* sounds.* **Use syllabication patterns to determine syllable sounds.** Determine syllable sounds in multisyllabic words.* **Decode multisyllabic words with a VV pattern.** Distinguish vowel pairs *(thief* vs. *science)* in order to decode multisyllabic words following a VV pattern.*
3.L.4.a Use sentence-level context as a clue to the meaning of a word or phrase.	**Determine word meaning.** Understand the meaning of words and phrases in Level 3 literary or informational text, including academic and/or domain-specific words. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 3 words used in literary texts, grade-appropriate content areas, and other academic contexts. **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, shades of meaning, and literary devices such as rhyme.*
3.L.4.b Determine the meaning of the new word formed when a known affix is added to a known word (e.g., agreeable/ disagreeable, comfortable/uncomfortable, care/careless, heat/preheat).	**Use prefixes, suffixes, and base words.** Use common, grade-appropriate prefixes *(in-, dis-, mis-, non-)*, suffixes *(-y, -ly, -ily, -er, -est, -ness)*, and base words to determine the meaning of words and phrases.*

Grade 3 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
3.L.4.c Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., company, companion).	**Use prefixes, suffixes, and base words.** Use common, grade-appropriate prefixes *(in-, dis-, mis-, non-)*, suffixes *(-y, -ly, -ily, -er, -est, -ness)*, and base words to determine the meaning of words and phrases.*
3.L.5.a Distinguish the literal and nonliteral meanings of words and phrases in context (e.g., take steps).	**Determine word meaning.** Understand the meaning of words and phrases in Level 3 literary or informational text, including academic and/or domain-specific words.* **Interpret figurative language.** Identify or interpret an author's use of figurative language, including metaphors and similes, in Level 3 literary or informational text.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, shades of meaning, and literary devices such as rhyme.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 3 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
3.L.5.c Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., knew, believed, suspected, heard, wondered).	**Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, shades of meaning, and literary devices such as rhyme.*
3.L.6 Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and	**Determine word meaning.** Understand the meaning of words and phrases in Level

**This skill is related to the aligned standard*

Grade 3 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
phrases, including those that signal spatial and temporal relationships (e.g., After dinner that night we went looking for them).	3 literary or informational text, including academic and/or domain-specific words.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, shades of meaning, and literary devices such as rhyme.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 3 words used in literary texts, grade-appropriate content areas, and other academic contexts.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 4

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
4.RL.1 Refer to details and examples in a text . . . when drawing inferences from the text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 4 literary or informational text.
4.RL.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	**Cite textual evidence.** Identify facts and details or cite explicit statements from Level 4 literary or informational text to explain what the text says explicitly or to support inferences made about the text.
4.RL.2 . . . Summarize the text.	**Summarize literary text.** Summarize a story, poem, or other Level 4 literary text.
4.RL.2 Determine a theme of a story, drama, or poem from details in the text . . .	**Determine theme in literary text.** Identify the theme or central idea using particular details in Level 4 literary text.
4.RL.3 Describe in depth a character . . . in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).	**Analyze characters in literary text.** Analyze characterization in Level 4 literary text, drawing on specific details in the text, such as a character's thoughts, words, or actions.
4.RL.3 Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).	**Analyze plot, setting, and events in literary text.** Identify and evaluate structural elements of the plot in Level 4 literary text, drawing on specific details.
4.RL.4 Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean).	**Determine word meaning.** Understand the meaning of words and phrases in Level 4 literary or informational text, including academic and/or domain-specific words.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 4 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
4.RL.5 Explain major differences between poems, drama, and prose, and refer to the	**Describe structural elements of literary text.** Describe the structural elements of

**This skill is related to the aligned standard*

Grade 4 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
structural elements of poems (e.g., verse, rhythm, meter) and drama (e.g., casts of characters, settings, descriptions, dialogue, stage directions) when writing or speaking about a text.	Level 4 poems and dramas, using terms such as verse, rhythm, meter; cast of characters, dialogue, stage directions.*
4.RL.6 Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.	**Identify narrator's point of view in literary text.** Identify and interpret a narrator's or speaker's point of view in Level 4 literary text. Distinguish between first-person and third-person narration.* **Compare point of view in two texts.** * • Compare a firsthand and secondhand account of the same event or topic in two Level 4 informational texts. • Compare the point of view from which two Level 4 literary texts are narrated.
4.RL.7 Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.	**Compare literary text to multimedia presentations and/or other literary text.** * • Make connections between a Level 4 literary text and a visual or oral presentation of the text. • Compare the treatment of similar themes and patterns of events in two Level 4 literary texts.
4.RL.9 Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.	**Determine theme in literary text.** Identify the theme or central idea using particular details in Level 4 literary text.* **Analyze plot, setting, and events in literary text.** Identify and evaluate structural elements of the plot in Level 4 literary text, drawing on specific details.* **Compare literary text to multimedia presentations and/or other literary text.** *

**This skill is related to the aligned standard*

Grade 4 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	• Make connections between a Level 4 literary text and a visual or oral presentation of the text. • Compare the treatment of similar themes and patterns of events in two Level 4 literary texts.
4.RI.1 Refer to details and examples in a text . . . when drawing inferences from the text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 4 literary or informational text.
4.RI.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	**Cite textual evidence.** Identify facts and details or cite explicit statements from Level 4 literary or informational text to explain what the text says explicitly or to support inferences made about the text.
4.RI.2 . . . Summarize the text.	**Summarize informational text.** Summarize main idea and supporting details in Level 4 informational text.
4.RI.2 Determine the main idea of a text and explain how it is supported by key details . . .	**Determine main idea and supporting details in informational text.** Identify the main idea of a Level 4 informational text and identify its relationship to supporting details.
4.RI.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.	**Analyze text structure in informational text.** Identify or analyze the text structures that an author uses to organize a Level 4 informational text (sequence, compare/contrast, or cause/effect), including how a particular sentence, paragraph, or section fits into the overall structure of a text and contributes to the development of the ideas.*
4.RI.4 Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.	**Determine word meaning.** Understand the meaning of words and phrases in Level 4 literary or informational text, including academic and/or domain-specific words.

**This skill is related to the aligned standard*

Grade 4 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Use general academic and domain-specific vocabulary. Demonstrate knowledge of Level 4 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
4.RI.5 Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.	**Analyze text structure in informational text.** Identify or analyze the text structures that an author uses to organize a Level 4 informational text (sequence, compare/contrast, or cause/effect), including how a particular sentence, paragraph, or section fits into the overall structure of a text and contributes to the development of the ideas.
4.RI.6 Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.	**Cite textual evidence.** Identify facts and details or cite explicit statements from Level 4 literary or informational text to explain what the text says explicitly or to support inferences made about the text.* **Compare point of view in two texts.** * • Compare a firsthand and secondhand account of the same event or topic in two Level 4 informational texts. • Compare the point of view from which two Level 4 literary texts are narrated.
4.RI.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.	**Use text features in informational text.** Use headings, graphics, or other text features to locate key facts or information in Level 4 informational text.*
4.RI.8 Explain how an author uses reasons and evidence to support particular points in a text.	**Evaluate argument in informational text.** Explain how an author uses reasons and evidence to support particular points in Level 4 informational text.

**This skill is related to the aligned standard*

Grade 4 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
4.RI.9 Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.	**Integrate information from two informational texts.** Integrate information from two Level 4 informational texts on the same topic. **Determine main idea and supporting details in informational text.** Identify the main idea of a Level 4 informational text and identify its relationship to supporting details.*
4.RF.3.a Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.	**Decode multisyllabic words.** Decode five-syllable words and less common three- and four-syllable words.* **Decode multisyllabic words with difficult letter-sound correspondences.** Decode multisyllabic words with difficult vowel + /r/ sounds.* **Decode multisyllabic words with schwa sounds.** Decode multisyllabic words with schwa + *l* or schwa + *n* sounds.* **Use syllabication patterns to determine syllable sounds.** Determine syllable sounds in multisyllabic words.* **Decode multisyllabic words with a VV pattern.** Distinguish vowel pairs *(thief* vs. *science)* in order to decode multisyllabic words following a VV pattern.*
4.L.4.a Use context (e.g., definitions, examples, or restatements in text) as a clue to the meaning of a word or phrase.	**Determine word meaning.** Understand the meaning of words and phrases in Level 4 literary or informational text, including academic and/or domain-specific words.

**This skill is related to the aligned standard*

Grade 4 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Use general academic and domain-specific vocabulary. Demonstrate knowledge of Level 4 words used in literary texts, grade-appropriate content areas, and other academic contexts. **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, idioms, alliteration, and figurative language, such as similes and metaphors.*
4.L.4.b Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., telegraph, photograph, autograph).	**Use prefixes, suffixes, and word roots.** Use common, grade-appropriate prefixes *(uni-, bi-, tri-, over-, de-, trans-, super-, ex-, sub-, en-, em-)*, suffixes *(-er/-or, -ent, -ion, -tion, -ation, -ition, -ist, -ment)*, and base words or word roots to determine the meaning of words and phrases.
4.L.5.a Explain the meaning of simple similes and metaphors (e.g., as pretty as a picture) in context.	**Interpret figurative language and literary devices.** Identify or interpret an author's use of figurative language, including metaphors and similes, in Level 4 literary or informational text. Identify literary devices such as alliteration or repetition.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, idioms, alliteration, and figurative language, such as similes and metaphors.*
4.L.5.b Recognize and explain the meaning of common idioms, adages, and proverbs.	**Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, idioms,

**This skill is related to the aligned standard*

Grade 4 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	alliteration, and figurative language, such as similes and metaphors.*
4.L.5.c Demonstrate understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms).	**Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, idioms, alliteration, and figurative language, such as similes and metaphors.*
4.L.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).	**Determine word meaning.** Understand the meaning of words and phrases in Level 4 literary or informational text, including academic and/or domain-specific words.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, idioms, alliteration, and figurative language, such as similes and metaphors.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 4 words used in literary texts, grade-appropriate content areas, and other academic contexts.*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 5

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
5.RL.1 Quote accurately from a text when . . . drawing inferences from the text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 5 literary or informational text.
5.RL.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.	**Cite textual evidence.** Identify facts and details or cite explicit statements from Level 5 literary or informational text to explain what the text says explicitly or to support inferences made about the text.
5.RL.2 . . . Summarize the text.	**Summarize literary text.** Summarize a story, poem, or other Level 5 literary text.
5.RL.2 Determine a theme of a story, drama, or poem from details in the text . . .	**Determine theme in literary text.** Identify the theme or central idea using particular details in Level 5 literary text.
5.RL.2 Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.	**Analyze characters in literary text.** Analyze characterization in Level 5 literary text. Identify how the characters change or respond to challenges.*
5.RL.3 Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).	**Analyze plot, setting, and events in literary text.** Identify and evaluate structural elements of the plot in Level 5 literary text. Explain how a series of scenes fits together to provide the overall structure of a particular story.* **Analyze characters in literary text.** Analyze characterization in Level 5 literary text. Identify how the characters change or respond to challenges.*
5.RL.4 Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes.	**Interpret figurative language.** Identify or interpret an author's use of figurative language, including metaphors and similes, in Level 5 informational or literary text.

**This skill is related to the aligned standard*

Grade 5 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Determine word meaning. Understand the meaning of words and phrases in Level 5 literary or informational text, including academic and/or domain-specific words.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, idioms, and figurative language, such as similes, metaphors, or personification.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 5 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
5.RL.5 Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.	**Analyze plot, setting, and events in literary text.** Identify and evaluate structural elements of the plot in Level 5 literary text. Explain how a series of scenes fits together to provide the overall structure of a particular story.*
5.RL.6 Describe how a narrator's or speaker's point of view influences how events are described.	**Identify narrator's point of view in literary text.** Identify how a narrator's or speaker's point of view influences how events are described in Level 5 literary text.
5.RL.7 Analyze how visual and multimedia elements contribute to the meaning, tone, or beauty of a text (e.g., graphic novel, multimedia presentation of fiction, folktale, myth, poem).	**Connect literary text and multimedia elements.** Analyze how audio, video, or other artistic elements contribute to the meaning or tone of a Level 5 literary text.
5.RL.9 Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics.	**Compare topic and theme in two literary texts.** Compare the approaches to similar topics and themes in two Level 5 literary texts of the same genre.

**This skill is related to the aligned standard*

Grade 5 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Determine theme in literary text. Identify the theme or central idea using particular details in Level 5 literary text.* **Analyze plot, setting, and events in literary text.** Identify and evaluate structural elements of the plot in Level 5 literary text. Explain how a series of scenes fits together to provide the overall structure of a particular story.*
5.RI.1 Quote accurately from a text when . . . drawing inferences from the text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 5 literary or informational text.
5.RI.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.	**Cite textual evidence.** Identify facts and details or cite explicit statements from Level 5 literary or informational text to explain what the text says explicitly or to support inferences made about the text.
5.RI.2 . . . Summarize the text.	**Summarize informational text.** Summarize main idea and supporting details in Level 5 informational text.
5.RI.2 Determine two or more main ideas of a text and explain how they are supported by key details . . .	**Determine main idea and supporting details in informational text.** Identify the main idea or multiple main ideas of a Level 5 informational text and analyze its relationship to supporting details.
5.RI.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.	**Analyze text structure in informational text.** Identify and analyze the text structure that an author uses to organize a Level 5 informational text (sequence, compare/contrast, or cause/effect), including how a particular sentence, paragraph, or section fits into the overall structure of a text and

**This skill is related to the aligned standard*

Grade 5 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	contributes to the development of the ideas.*
5.RI.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.	**Determine word meaning.** Understand the meaning of words and phrases in Level 5 literary or informational text, including academic and/or domain-specific words. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 5 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
5.RI.5 Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.	**Analyze text structure in informational text.** Identify and analyze the text structure that an author uses to organize a Level 5 informational text (sequence, compare/contrast, or cause/effect), including how a particular sentence, paragraph, or section fits into the overall structure of a text and contributes to the development of the ideas.* **Compare the presentation of information in two informational texts.** * • Analyze accounts of the same event or topic in two Level 5 informational texts and compare the point of view each account represents. • Compare the overall structure (sequence, compare/contrast, cause/effect, problem/solution) of events, ideas, or concepts in two Level 5 informational texts.
5.RI.6 Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.	**Identify author's point of view or purpose in informational text.** Determine an author's point of view or purpose in Level 5 informational text.*

**This skill is related to the aligned standard*

Grade 5 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Compare the presentation of information in two informational texts. * • Analyze accounts of the same event or topic in two Level 5 informational texts and compare the point of view each account represents. • Compare the overall structure (sequence, compare/contrast, cause/effect, problem/solution) of events, ideas, or concepts in two Level 5 informational texts.
5.RI.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.	**Integrate information from multiple informational sources.** Integrate information from two or more Level 5 informational sources on the same topic.*
5.RI.8 Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).	**Evaluate argument in informational text.** Explain how an author uses reasons and evidence to support particular points in Level 5 informational text, identifying which reasons and evidence support which point.
5.RI.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.	**Integrate information from multiple informational sources.** Integrate information from two or more Level 5 informational sources on the same topic.*
5.RF.3.a. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.	**Use syllabication patterns to determine syllable sounds.** Determine syllable sounds in multisyllabic words.* **Decode multisyllabic words with a VV pattern.** Distinguish vowel pairs *(thief* vs. *science)* in order to decode multisyllabic words following a VV pattern.*
5.L.4.a Use context (e.g., cause/effect relationships and comparisons in text) as a clue to the meaning of a word or phrase.	**Determine word meaning.** Understand the meaning of words and phrases in Level 5 literary or informational text, including academic and/or domain-specific words.

**This skill is related to the aligned standard*

Grade 5 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Use general academic and domain-specific vocabulary. Demonstrate knowledge of Level 5 words used in literary texts, grade-appropriate content areas, and other academic contexts. **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, idioms, and figurative language, such as similes, metaphors, or personification.*
5.L.4.b Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., photograph, photosynthesis).	**Use prefixes, suffixes, and word roots.** Use common, grade-appropriate prefixes *(im-, inter-, com-, con-, fore-, mid-, post-, semi-)*, suffixes *(-ity, -ty, -al, -ial, -ish, -en)*, and base words or word roots to determine the meaning of words and phrases.
5.L.5.a Interpret figurative language, including similes and metaphors, in context.	**Interpret figurative language.** Identify or interpret an author's use of figurative language, including metaphors and similes, in Level 5 informational or literary text. **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, idioms, and figurative language, such as similes, metaphors, or personification.*
5.L.5.b Recognize and explain the meaning of common idioms, adages, and proverbs.	**Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, idioms, and figurative language, such as similes, metaphors, or personification.*

**This skill is related to the aligned standard*

Grade 5 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
5.L.5.c Use the relationship between particular words (e.g., synonyms, antonyms, homographs) to better understand each of the words.	**Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of homophones, multiple-meaning words, idioms, and figurative language, such as similes, metaphors, or personification.*
5.L.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., however, although, nevertheless, similarly, moreover, in addition).	**Determine word meaning.** Understand the meaning of words and phrases in Level 5 literary or informational text, including academic and/or domain-specific words.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 5 words used in literary texts, grade-appropriate content areas, and other academic contexts.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 6

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
6.RL.1 Cite textual evidence to support analysis of . . . inferences drawn from the text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 6 literary or informational text.
6.RL.1 Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	**Cite textual evidence.** Identify facts and details or cite explicit statements from Level 6 literary or informational text to explain what the text says explicitly or to support inferences made about the text.
6.RL.2 . . . Provide a summary of the text distinct from personal opinions or judgments.	**Summarize literary text.** Summarize a story, poem, or other Level 6 literary text.
6.RL.2 Determine a theme or central idea of a text and how it is conveyed through particular details . . .	**Determine theme in literary text.** Identify the theme or central idea in Level 6 literary text and how it is conveyed through particular details.
6.RL.3 Describe . . . how the characters respond or change as the plot moves toward a resolution.	**Analyze characters in literary text.** Analyze characterization in Level 6 literary text. Describe how characters respond or change as the plot moves toward a resolution.
6.RL.3 Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution.	**Identify structural elements of plot in literary text.** Identify and analyze how a particular plot in Level 6 literary text unfolds in a series of episodes around a problem: rising action, climax, and resolution. Explain how a series of scenes, stanzas, or sections fits together to provide the overall structure of a particular text.*
6.RL.4 Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone.	**Interpret author's use of language.** Interpret an author's use of connotations, or shades of meaning, in Level 6 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary text.

**This skill is related to the aligned standard*

Grade 6 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Determine word meaning. Understand the meaning of words and phrases in Level 6 literary or informational text, including academic and/or domain-specific words.* **Interpret figurative language.** Identify or interpret an author's use of figurative language and/or literary devices in Level 6 informational or literary text.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 6 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
6.RL.5 Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot.	**Determine theme in literary text.** Identify the theme or central idea in Level 6 literary text and how it is conveyed through particular details.* **Identify structural elements of plot in literary text.** Identify and analyze how a particular plot in Level 6 literary text unfolds in a series of episodes around a problem: rising action, climax, and resolution. Explain how a series of scenes, stanzas, or sections fits together to provide the overall structure of a particular text.*
6.RL.6 Explain how an author develops the point of view of the narrator or speaker in a text.	**Identify narrator's point of view in literary text.** Identify how an author develops the point of view of the narrator or speaker in Level 6 literary text.
6.RL.7 Compare and contrast the experience of reading a story, drama, or poem to listening to or viewing an audio, video, or live version of the text, including	**Analyze characters in literary text.** Analyze characterization in Level 6 literary text. Describe how characters respond

**This skill is related to the aligned standard*

Grade 6 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
contrasting what they "see" and "hear" when reading the text to what they perceive when they listen or watch.	or change as the plot moves toward a resolution.* **Identify structural elements of plot in literary text.** Identify and analyze how a particular plot in Level 6 literary text unfolds in a series of episodes around a problem: rising action, climax, and resolution. Explain how a series of scenes, stanzas, or sections fits together to provide the overall structure of a particular text.* **Compare literary text to multimedia presentations and/or other literary text.** * • Compare the experience of reading a Level 6 literary text to listening to or viewing an audio or video presentation of the text. • Compare the approaches to similar topics and themes in two Level 6 literary texts of different genres.
6.RL.9 Compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics.	**Determine theme in literary text.** Identify the theme or central idea in Level 6 literary text and how it is conveyed through particular details.* **Identify structural elements of plot in literary text.** Identify and analyze how a particular plot in Level 6 literary text unfolds in a series of episodes around a problem: rising action, climax, and resolution. Explain how a series of scenes, stanzas, or sections fits together to provide the overall structure of a particular text.* **Compare literary text to multimedia presentations and/or other literary text.** *

**This skill is related to the aligned standard*

Grade 6 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	• Compare the experience of reading a Level 6 literary text to listening to or viewing an audio or video presentation of the text. • Compare the approaches to similar topics and themes in two Level 6 literary texts of different genres.
6.RI.1 Cite textual evidence to support analysis of . . . inferences drawn from the text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 6 literary or informational text.
6.RI.1 Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	**Cite textual evidence.** Identify facts and details or cite explicit statements from Level 6 literary or informational text to explain what the text says explicitly or to support inferences made about the text.
6.RI.2 . . . Provide a summary of the text distinct from personal opinions or judgments.	**Summarize informational text.** Summarize Level 6 informational text, identifying the central idea and the supporting ideas.
6.RI.2 Determine a central idea of a text and how it is conveyed through particular details . . .	**Determine central idea and supporting ideas in informational text.** Identify the central idea of a Level 6 informational text and how it is conveyed through particular details.
6.RI.3 Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).	**Determine central idea and supporting ideas in informational text.** Identify the central idea of a Level 6 informational text and how it is conveyed through particular details.* **Analyze text structure in informational text.** Identify and analyze the text structure that an author uses to organize a Level 6 informational text (sequence, compare/contrast, or cause/effect), including how a

Grade 6 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	particular sentence, paragraph, or section fits into the overall structure of a text and contributes to the development of the ideas.*
6.RI.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.	**Determine word meaning.** Understand the meaning of words and phrases in Level 6 literary or informational text, including academic and/or domain-specific words.* **Interpret author's use of language.** Interpret an author's use of connotations, or shades of meaning, in Level 6 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary text.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 6 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
6.RI.5 Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas.	**Analyze text structure in informational text.** Identify and analyze the text structure that an author uses to organize a Level 6 informational text (sequence, compare/contrast, or cause/effect), including how a particular sentence, paragraph, or section fits into the overall structure of a text and contributes to the development of the ideas.*
6.RI.6 Determine an author's point of view or purpose in a text and explain how it is conveyed in the text.	**Identify author's point of view or purpose.** Determine an author's point of view or purpose in Level 6 literary or informational text.
6.RI.7 Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to	**Determine central idea and supporting ideas in informational text.** Identify the central idea of a Level 6 informational text

**This skill is related to the aligned standard*

Grade 6 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
develop a coherent understanding of a topic or issue.	and how it is conveyed through particular details.* **Compare and integrate information from multiple informational sources.** * • Compare one author's presentation of ideas or events with that of another in two Level 6 informational texts on the same topic. • Analyze Level 6 informational text and integrate quantitative or technical data from other media or formats to understand key facts or information about a topic.
6.RI.8 Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.	**Identify and evaluate argument in informational text.** Identify the argument and the specific claims that an author makes in Level 6 informational text, distinguishing claims that are supported by reasons and evidence from claims that are not.
6.RI.9 Compare and contrast one author's presentation of events with that of another (e.g., a memoir written by and a biography on the same person).	**Identify author's point of view or purpose.** Determine an author's point of view or purpose in Level 6 literary or informational text.* **Compare and integrate information from multiple informational sources.** * • Compare one author's presentation of ideas or events with that of another in two Level 6 informational texts on the same topic. • Analyze Level 6 informational text and integrate quantitative or technical data from other media or formats to understand key facts or information about a topic.

**This skill is related to the aligned standard*

Grade 6 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
6.L.4.a Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.	**Determine word meaning.** Understand the meaning of words and phrases in Level 6 literary or informational text, including academic and/or domain-specific words. **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of multiple-meaning words, idioms, shades of meaning, and figurative language, such as analogies, metaphors, and similes. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 6 words used in literary texts, grade-appropriate content areas, and other academic contexts.
6.L.4.b Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).	**Use prefixes, suffixes, and word roots.** Use common, grade-appropriate prefixes *(pro-, hyper-)*, suffixes *(-logy, -ic, -ive, -ative, -itive, -ance, -ence)*, and base words or word roots to determine the meaning of words and phrases.
6.L.4.d Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context . . .).	**Determine word meaning.** Understand the meaning of words and phrases in Level 6 literary or informational text, including academic and/or domain-specific words. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 6 words used in literary texts, grade-appropriate content areas, and other academic contexts.
6.L.5.a Interpret figures of speech (e.g., personification) in context.	**Interpret figurative language.** Identify or interpret an author's use of figurative

**This skill is related to the aligned standard*

Grade 6 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	language and/or literary devices in Level 6 informational or literary text. **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of multiple-meaning words, idioms, shades of meaning, and figurative language, such as analogies, metaphors, and similes.*
6.L.5.b Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words.	**Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of multiple-meaning words, idioms, shades of meaning, and figurative language, such as analogies, metaphors, and similes.*
6.L.5.c Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., stingy, scrimping, economical, unwasteful, thrifty).	**Interpret author's use of language.** Interpret an author's use of connotations, or shades of meaning, in Level 6 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary text.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of multiple-meaning words, idioms, shades of meaning, and figurative language, such as analogies, metaphors, and similes.*
6.L.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.	**Determine word meaning.** Understand the meaning of words and phrases in Level 6 literary or informational text, including academic and/or domain-specific words.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of multiple-meaning words, idioms, shades of meaning,

Grade 6 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	and figurative language, such as analogies, metaphors, and similes.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 6 words used in literary texts, grade-appropriate content areas, and other academic contexts.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 7

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
7.RL.1 Cite several pieces of textual evidence to support analysis of . . . inferences drawn from the text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 7 literary or informational text.
7.RL.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	**Cite textual evidence.** Identify facts and details or cite explicit statements from Level 7 literary or informational text to explain what the text says explicitly or to support inferences made about the text.
7.RL.2 . . . Provide an objective summary of the text.	**Summarize literary text.** Summarize a story, poem, or other Level 7 literary text.
7.RL.2 Determine a theme or central idea of a text and analyze its development over the course of the text . . .	**Determine theme in literary text.** Identify or analyze the theme or central idea in Level 7 literary text, including its relationship to the characters, setting, and plot.
7.RL.3 Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).	**Analyze plot, setting, and events in literary text.** Interpret the relationship between elements of a story in Level 7 literary text. Analyze how setting shapes character or plot, or analyze how characters' actions, motivations, and/or conflicts advance the plot development. **Analyze characters in literary text.** Analyze characterization and motivation in Level 7 literary text through the narrator's description and/or the thoughts, words, and actions of the characters.*
7.RL.4 Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of rhymes and other repetitions of sounds (e.g., alliteration) on a specific verse or stanza of a poem or section of a story or drama.	**Determine word meaning.** Understand the meaning of words and phrases in Level 7 literary or informational text, including academic and/or domain-specific words.* **Interpret author's use of language.** Interpret an author's use of connotations,

**This skill is related to the aligned standard*

Grade 7 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	or shades of meaning, and/or descriptive language in Level 7 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text.* **Interpret figurative language.** Identify or interpret an author's use of figurative language and/or literary devices in Level 7 literary or informational text.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 7 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
7.RL.5 Analyze how a drama's or poem's form or structure (e.g., soliloquy, sonnet) contributes to its meaning.	**Analyze poetry.** Identify and analyze how the form or structure of a Level 7 poem (such as a sonnet) contributes to its overall meaning. Analyze the impact of rhymes and other repetitions of sounds (e.g., alliteration) on a specific verse or stanza of a poem.*
7.RL.6 Analyze how an author develops and contrasts the points of view of different characters or narrators in a text.	**Analyze point of view in literary text.** Identify or analyze how an author contrasts different points of view in Level 7 literary text, such as: narrator or characters and audience or reader; first-person and third-person; limited and omniscient point of view.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 7 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
7.RL.7 Compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film).	**Compare literary text to multimedia presentations and/or informational text.** * • Compare a Level 7 literary text to an audio, video, or other artistic presentation of the text, analyzing the effects of techniques that are unique to each medium. • Compare a fictional portrayal of a time, place, or character and a historical account of the same period in Level 7 literary and informational texts.
7.RL.9 Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.	**Compare literary text to multimedia presentations and/or informational text.** * • Compare a Level 7 literary text to an audio, video, or other artistic presentation of the text, analyzing the effects of techniques that are unique to each medium. • Compare a fictional portrayal of a time, place, or character and a historical account of the same period in Level 7 literary and informational texts.
7.RI.1 Cite several pieces of textual evidence to support analysis of . . . inferences drawn from the text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 7 literary or informational text.
7.RI.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	**Cite textual evidence.** Identify facts and details or cite explicit statements from Level 7 literary or informational text to explain what the text says explicitly or to support inferences made about the text.
7.RI.2 . . . Provide an objective summary of the text.	**Summarize informational text.** Summarize Level 7 informational text, identifying the central idea and the supporting ideas.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 7 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
7.RI.2 Determine two or more central ideas in a text and analyze their development over the course of the text . . .	**Determine central idea and supporting ideas in informational text.** Identify the central idea or multiple main ideas of a Level 7 informational text and analyze its relationship to supporting details.
7.RI.3 Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).	**Analyze text structure in informational text.** Identify and analyze the text structure that an author uses to organize a Level 7 informational text (sequence, compare/ contrast, or cause/effect), including how the major sections contribute to the whole and to the development of the ideas.*
7.RI.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.	**Determine word meaning.** Understand the meaning of words and phrases in Level 7 literary or informational text, including academic and/or domain-specific words.* **Interpret author's use of language.** Interpret an author's use of connotations, or shades of meaning, and/or descriptive language in Level 7 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text.* **Interpret figurative language.** Identify or interpret an author's use of figurative language and/or literary devices in Level 7 literary or informational text.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 7 words used in literary texts, grade-appropriate content areas, and other academic contexts.*

**This skill is related to the aligned standard*

Grade 7 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
7.RI.5 Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas.	**Analyze text structure in informational text.** Identify and analyze the text structure that an author uses to organize a Level 7 informational text (sequence, compare/ contrast, or cause/effect), including how the major sections contribute to the whole and to the development of the ideas.
7.RI.6 Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.	**Identify author's point of view or purpose in informational text.** Determine an author's point of view or purpose in Level 7 informational text. Analyze how the author distinguishes his or her position from that of others.
7.RI.7 Compare and contrast a text to an audio, video, or multimedia version of the text, analyzing each medium's portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words).	**Compare informational text to multimedia presentations and/or other informational text.** * • Compare a Level 7 informational text to an audio, video, or other artistic presentation of the text, analyzing each medium's portrayal of the subject. • Compare how two authors writing about the same topic emphasize different evidence or advance different interpretations of facts to shape their presentations in Level 7 informational text.
7.RI.8 Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.	**Identify and evaluate argument in informational text.** Identify the argument and the specific claims that an author makes in Level 7 informational text. Assess whether the reasoning and the evidence are sufficient to support the argument and/or any specific claims.
7.RI.9 Analyze how two or more authors writing about the same topic shape their presentations of key information	**Identify author's point of view or purpose in informational text.** Determine an author's point of view or purpose in Level 7 informational text. Analyze how the

**This skill is related to the aligned standard*

Grade 7 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
by emphasizing different evidence or advancing different interpretations of facts.	author distinguishes his or her position from that of others.* **Identify and evaluate argument in informational text.** Identify the argument and the specific claims that an author makes in Level 7 informational text. Assess whether the reasoning and the evidence are sufficient to support the argument and/or any specific claims.* **Compare informational text to multimedia presentations and/or other informational text.** * • Compare a Level 7 informational text to an audio, video, or other artistic presentation of the text, analyzing each medium's portrayal of the subject. • Compare how two authors writing about the same topic emphasize different evidence or advance different interpretations of facts to shape their presentations in Level 7 informational text.
7.L.4.a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.	**Determine word meaning.** Understand the meaning of words and phrases in Level 7 literary or informational text, including academic and/or domain-specific words. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 7 words used in literary texts, grade-appropriate content areas, and other academic contexts. **Understand word relationships.** Recognize synonyms and antonyms.

**This skill is related to the aligned standard*

Grade 7 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes.*
7.L.4.b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., belligerent, bellicose, rebel).	**Use prefixes, suffixes, and word roots.** Use common, grade-appropriate prefixes *(hydro-, multi-)*, suffixes *(-hood, -ous, -eous, -ious, -ism, -dom)*, and base words or word roots to determine the meaning of words and phrases.
7.L.4.d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context . . .).	**Determine word meaning.** Understand the meaning of words and phrases in Level 7 literary or informational text, including academic and/or domain-specific words. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 7 words used in literary texts, grade-appropriate content areas, and other academic contexts.
7.L.5.b. Use the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words.	**Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes.*
7.L.5.c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., refined, respectful, polite, diplomatic, condescending).	**Interpret author's use of language.** Interpret an author's use of connotations, or shades of meaning, and/or descriptive language in Level 7 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes.*

**This skill is related to the aligned standard*

Grade 7 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
7.L.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.	**Determine word meaning.** Understand the meaning of words and phrases in Level 7 literary or informational text, including academic and/or domain-specific words.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 7 words used in literary texts, grade-appropriate content areas, and other academic contexts.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grade 8

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
8.RL.1 Cite the textual evidence that most strongly supports an analysis of . . . inferences drawn from the text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 8 literary or informational text.
8.RL.1 Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.	**Cite textual evidence.** Cite several pieces of textual evidence that strongly support analysis of Level 8 literary or informational text.
8.RL.2 . . . Provide an objective summary of the text.	**Summarize literary text.** Summarize a story, poem, or other Level 8 literary text.
8.RL.2 Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot . . .	**Determine theme in literary text.** Identify or analyze the theme or central idea in Level 8 literary text, including its relationship to the characters, setting, and plot.
8.RL.3 Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.	**Analyze plot in literary text.** Identify and evaluate structural elements of the plot, such as subplots, parallel episodes, or climax, in Level 8 literary text. Analyze how characters' actions, motivations, and/or conflicts advance the plot development.* **Analyze characters in literary text.** Analyze characterization and motivation in Level 8 literary text through the narrator's description and/or the thoughts, words, and actions of the characters.*
8.RL.4 Determine the meaning of words and phrases as they are used in a text, including . . . connotative meanings; analyze the impact of specific word choices on meaning and tone . . .	**Interpret author's use of language.** Interpret an author's use of connotations, or shades of meaning, in Level 8 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text.
8.RL.4 Determine the meaning of words and phrases as they are used in a text, including figurative . . . meanings . . .	**Interpret figurative language.** Identify or interpret an author's use of figurative

**This skill is related to the aligned standard*

Grade 8 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	language and/or other literary devices in Level 8 literary or informational text.
8.RL.4 Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	**Determine word meaning.** Understand the meaning of words and phrases in Level 8 literary or informational text, including academic and/or domain-specific words.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 8 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
8.RL.5 Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style.	**Analyze plot in literary text.** Identify and evaluate structural elements of the plot, such as subplots, parallel episodes, or climax, in Level 8 literary text. Analyze how characters' actions, motivations, and/or conflicts advance the plot development.* **Compare literary text to multimedia presentations and/or other literary text.** * • Compare a Level 8 literary text to an audio or video presentation of the text, analyzing the extent to which the multimedia version follows or departs from the text. • Compare the structure of two Level 8 literary texts and analyze how the differing structure of each text contributes to its overall meaning or style.
8.RL.6 Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor.	**Analyze point of view in literary text.** Identify or contrast points of view (such as narrator or characters and audience or reader; first-person and third-person; limited and omniscient point of view) in Level 8 literary text, and analyze how these

**This skill is related to the aligned standard*

Grade 8 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	differences clarify the central idea or create such effects as suspense or humor.
8.RL.7 Analyze the extent to which a filmed or live production of a story or drama stays faithful to or departs from the text or script, evaluating the choices made by the director or actors.	**Compare literary text to multimedia presentations and/or other literary text.** * • Compare a Level 8 literary text to an audio or video presentation of the text, analyzing the extent to which the multimedia version follows or departs from the text. • Compare the structure of two Level 8 literary texts and analyze how the differing structure of each text contributes to its overall meaning or style.
8.RL.9 Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new.	**Analyze literary allusion.** Analyze how a modern author draws on character types, patterns of events, or themes from myths, traditional stories, or religious works in one or more Level 8 literary texts. **Determine theme in literary text.** Identify or analyze the theme or central idea in Level 8 literary text, including its relationship to the characters, setting, and plot.*
8.RI.1 Cite the textual evidence that most strongly supports an analysis of . . . inferences drawn from the text.	**Make inferences based on textual evidence.** Draw conclusions or make inferences in Level 8 literary or informational text.
8.RI.1 Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.	**Cite textual evidence.** Cite several pieces of textual evidence that strongly support analysis of Level 8 literary or informational text.
8.RI.2 . . . Provide an objective summary of the text.	**Summarize informational text.** Summarize Level 8 informational text,

**This skill is related to the aligned standard*

Grade 8 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	identifying the central idea and the supporting ideas.
8.RI.2 Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas . . .	**Determine central idea and supporting ideas in informational text.** Identify the central idea of a Level 8 informational text and analyze its relationship to supporting details.
8.RI.3 Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).	**Analyze text structure in informational text.** Identify and analyze the text structure (sequence, compare/contrast, or cause/effect) that an author uses in Level 8 informational text to make connections among and distinctions between individuals, ideas, or events.*
8.RI.4 Determine the meaning of words and phrases as they are used in a text, including . . . connotative . . . meanings; analyze the impact of specific word choices on meaning and tone . . .	**Interpret author's use of language.** Interpret an author's use of connotations, or shades of meaning, in Level 8 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text.
8.RI.4 Determine the meaning of words and phrases as they are used in a text, including figurative . . . meanings . . .	**Interpret figurative language.** Identify or interpret an author's use of figurative language and/or other literary devices in Level 8 literary or informational text.
8.RI.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	**Determine word meaning.** Understand the meaning of words and phrases in Level 8 literary or informational text, including academic and/or domain-specific words.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 8 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
8.RI.5 Analyze in detail the structure of a specific paragraph in a text, including the	**Analyze individual paragraph structure in informational text.** Analyze in detail

**This skill is related to the aligned standard*

Grade 8 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
role of particular sentences in developing and refining a key concept.	the structure of a specific paragraph in a Level 8 informational text, including the role of particular sentences in developing and refining a key concept. **Determine central idea and supporting ideas in informational text.** Identify the central idea of a Level 8 informational text and analyze its relationship to supporting details.* **Analyze text structure in informational text.** Identify and analyze the text structure (sequence, compare/contrast, or cause/effect) that an author uses in Level 8 informational text to make connections among and distinctions between individuals, ideas, or events.*
8.RI.6 Determine an author's point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.	**Identify author's point of view or purpose.** Determine an author's point of view or purpose in Level 8 literary or informational text.*
8.RI.7 Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea.	**Compare informational text to multimedia presentations and/or other informational text.** * • Evaluate the advantages and disadvantages of using different mediums, such as text, audio, video, and/or other artistic works, to present information about a particular Level 8 topic or idea. • Analyze two Level 8 informational sources that provide conflicting information on the same topic and identify where the sources disagree on matters of fact or interpretation.

**This skill is related to the aligned standard*

Grade 8 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
8.RI.8 Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.	**Identify and evaluate argument in informational text.** Identify the argument and the specific claims that an author makes in Level 8 informational text. Assess whether the reasoning and the evidence are sufficient to support the argument and/or any specific claims. Identify irrelevant evidence.
8.RI.9 Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation.	**Compare informational text to multimedia presentations and/or other informational text.** * • Evaluate the advantages and disadvantages of using different mediums, such as text, audio, video, and/or other artistic works, to present information about a particular Level 8 topic or idea. • Analyze two Level 8 informational sources that provide conflicting information on the same topic and identify where the sources disagree on matters of fact or interpretation.
8.L.4.a Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.	**Determine word meaning.** Understand the meaning of words and phrases in Level 8 literary or informational text, including academic and/or domain-specific words. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 8 words used in literary texts, grade-appropriate content areas, and other academic contexts. **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms,

**This skill is related to the aligned standard*

Grade 8 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	shades of meaning, and figurative language, such as analogies, metaphors, or similes.*
8.L.4.b Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., precede, recede, secede).	**Use prefixes, suffixes, and word roots.** Use common, grade-appropriate prefixes *(auto-, anti-)*, suffixes *(-cracy, -meter, -ible, -able)*, and base words or word roots to determine the meaning of words and phrases.
8.L.4.d Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context . . .).	**Determine word meaning.** Understand the meaning of words and phrases in Level 8 literary or informational text, including academic and/or domain-specific words. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 8 words used in literary texts, grade-appropriate content areas, and other academic contexts.
8.L.5.b Use the relationship between particular words to better understand each of the words.	**Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes.*
8.L.5.c Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., bullheaded, willful, firm, persistent, resolute).	**Interpret author's use of language.** Interpret an author's use of connotations, or shades of meaning, in Level 8 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes.*

**This skill is related to the aligned standard*

Grade 8 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
8.L.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.	**Determine word meaning.** Understand the meaning of words and phrases in Level 8 literary or informational text, including academic and/or domain-specific words.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 8 words used in literary texts, grade-appropriate content areas, and other academic contexts.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grades 9 - 10

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
9-10.RL.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	**Cite textual evidence and make inferences.** • Cite several pieces of textual evidence that strongly support a statement about what a Level 9 literary or informational text says explicitly. • Draw conclusions or make inferences in Level 9 literary or informational text, based on textual evidence. **Cite textual evidence and make inferences.** • Cite several pieces of textual evidence that strongly support a statement about what a Level 10 literary or informational text says explicitly. • Draw conclusions or make inferences in Level 10 literary or informational text, based on textual evidence.
9-10.RL.2 . . . Provide an objective summary of the text.	**Summarize literary text.** Summarize a story, poem, or other Level 9 literary text.
9-10.RL.2 Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details . . .	**Determine theme in literary text.** Identify or analyze the theme or central idea in one or more Level 9 literary texts, including how specific details help develop the theme or central idea.
9-10.RL.2 Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.	**Determine theme in literary text. Summarize the text.** • Identify or analyze the theme or central idea in one or more Level 10 literary texts, including how specific details help develop the theme or central idea. • Summarize a story, poem, or other Level 10 literary text.
9-10.RL.3 Analyze how complex characters (e.g., those with multiple or conflicting	**Analyze characters in literary text.** Analyze how authors develop a portrait of

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
motivations) develop over the course of a text . . .	a complex character, such as someone with multiple or conflicting motivations, in Level 10 literary text.
9-10.RL.3 Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.	**Analyze characters and plot in literary text.** * • Analyze how authors develop a portrait of a complex character, such as someone with multiple or conflicting motivations, in Level 9 literary text. • Identify and evaluate structural elements of the plot, such as subplots, parallel episodes, and/or climax, in Level 9 literary text. Analyze how characters' actions, motivations, and/or conflicts advance the plot development. **Analyze plot in literary text.** Identify and evaluate structural elements of the plot, such as subplots, parallel episodes, and/or climax, in Level 10 literary text. Analyze how characters' actions, motivations, and/or conflicts advance the plot development.*
9-10.RL.4 Determine the meaning of words and phrases as they are used in the text, including . . . connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language evokes a sense of time and place; how it sets a formal or informal tone).	**Determine word meaning. Interpret author's use of language.** • Understand the meaning of words and phrases in Level 10 literary or informational text, including academic and/or domain-specific words. • Interpret an author's use of connotations, or shades of meaning, in Level 10 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text.
9-10.RL.4 Determine the meaning of words and phrases as they are used in the text, including figurative . . . meanings . . .	**Interpret figurative language.** Identify or interpret an author's use of figurative

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	language and/or other literary devices in Level 10 literary or informational text.
9-10.RL.4 Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language evokes a sense of time and place; how it sets a formal or informal tone).	**Determine word meaning. Interpret figurative language and author's use of language.** • Understand the meaning of words and phrases in Level 9 literary or informational text, including academic and/or domain-specific words. • Identify or interpret an author's use of figurative language and/or other literary devices in Level 9 literary or informational text. • Interpret an author's use of connotations, or shades of meaning, in Level 9 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text. **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 9)* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 9 words used in literary texts, grade-appropriate content areas, and other academic contexts. * **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language,

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	such as analogies, metaphors, or similes. (Level 10)* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 10 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
9-10.RL.5 Analyze how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise.	**Analyze structural elements in literary text.** Analyze how the author structures text, orders events, and manipulates time to create effects (mystery, surprise) in one or more Level 9 literary texts. **Analyze structural elements in literary text.** Analyze how the author structures text, orders events, and manipulates time to create effects (mystery, surprise) in one or more Level 10 literary texts. **Analyze characters and plot in literary text.** * • Analyze how authors develop a portrait of a complex character, such as someone with multiple or conflicting motivations, in Level 9 literary text. • Identify and evaluate structural elements of the plot, such as subplots, parallel episodes, and/or climax, in Level 9 literary text. Analyze how characters' actions, motivations, and/or conflicts advance the plot development. **Analyze plot in literary text.** Identify and evaluate structural elements of the plot, such as subplots, parallel episodes, and/or climax, in Level 10 literary text. Analyze

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	how characters' actions, motivations, and/or conflicts advance the plot development.*
9-10.RL.6 Analyze a particular point of view or cultural experience reflected in a work of literature from outside the United States, drawing on a wide reading of world literature.	**Analyze point of view in literary text.** Analyze a particular point of view or cultural experience reflected in a Level 9 literary text drawn from a range of world literature. **Analyze point of view in literary text.** Analyze a particular point of view or cultural experience reflected in a Level 10 literary text drawn from a range of world literature.
9-10.RL.7 Analyze the representation of a subject or a key scene in two different artistic mediums, including what is emphasized or absent in each treatment (e.g., Auden's "Musée des Beaux Arts" and Breughel's Landscape with the Fall of Icarus).	**Analyze subject matter and literary allusions across literary texts and/or artistic mediums.** * • Analyze presentation of Level 9 artistic and/or literary subject matter in two or more artistic mediums. • Analyze how an author draws on and transforms themes or topics developed by major authors (Ovid, Shakespeare) in one or more Level 9 literary texts and/or artistic mediums. **Analyze subject matter and literary allusions across literary texts and/or artistic mediums.** * • Analyze presentation of Level 10 artistic and/or literary subject matter in two or more artistic mediums. • Analyze how an author draws on and transforms themes or topics developed by major authors (Ovid, Shakespeare) in one or more Level 10 literary texts and/or artistic mediums.

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
9-10.RL.9 Analyze how an author draws on and transforms source material in a specific work (e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare).	**Analyze subject matter and literary allusions across literary texts and/or artistic mediums.** * • Analyze presentation of Level 9 artistic and/or literary subject matter in two or more artistic mediums. • Analyze how an author draws on and transforms themes or topics developed by major authors (Ovid, Shakespeare) in one or more Level 9 literary texts and/or artistic mediums. **Analyze subject matter and literary allusions across literary texts and/or artistic mediums.** * • Analyze presentation of Level 10 artistic and/or literary subject matter in two or more artistic mediums. • Analyze how an author draws on and transforms themes or topics developed by major authors (Ovid, Shakespeare) in one or more Level 10 literary texts and/or artistic mediums.
9-10.RI.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	**Cite textual evidence and make inferences.** • Cite several pieces of textual evidence that strongly support a statement about what a Level 9 literary or informational text says explicitly. • Draw conclusions or make inferences in Level 9 literary or informational text, based on textual evidence. **Cite textual evidence and make inferences.** • Cite several pieces of textual evidence that strongly support a statement about

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	what a Level 10 literary or informational text says explicitly. • Draw conclusions or make inferences in Level 10 literary or informational text, based on textual evidence.
9-10.RI.2 Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.	**Determine central idea and supporting ideas in informational text. Summarize the text.** • Identify the central idea in Level 9 informational text and analyze how specific details contribute to the development of the central idea. • Summarize Level 9 informational text, identifying the central idea and supporting ideas. **Determine central idea and supporting ideas in informational text. Summarize the text.** • Identify the central idea in Level 10 informational text and analyze how specific details contribute to the development of the central idea. • Summarize Level 10 informational text, identifying the central idea and supporting ideas.
9-10.RI.3 Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.	**Analyze text structure in informational text.** Analyze how an author develops an analysis or series of ideas or events in Level 9 informational text, including how the author introduces, orders, and draws connections between each point. **Analyze text structure in informational text.** Analyze how an author develops an analysis or series of ideas or events in Level 10 informational text, including how

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	the author introduces, orders, and draws connections between each point.
9-10.RI.4 Determine the meaning of words and phrases as they are used in a text, including . . . connotative and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone . . .	**Determine word meaning. Interpret author's use of language.** • Understand the meaning of words and phrases in Level 10 literary or informational text, including academic and/or domain-specific words. • Interpret an author's use of connotations, or shades of meaning, in Level 10 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text.
9-10.RI.4 Determine the meaning of words and phrases as they are used in a text, including figurative . . . meanings . . .	**Interpret figurative language.** Identify or interpret an author's use of figurative language and/or other literary devices in Level 10 literary or informational text.
9-10.RI.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).	**Determine word meaning. Interpret figurative language and author's use of language.** • Understand the meaning of words and phrases in Level 9 literary or informational text, including academic and/or domain-specific words. • Identify or interpret an author's use of figurative language and/or other literary devices in Level 9 literary or informational text. • Interpret an author's use of connotations, or shades of meaning, in Level 9 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text.

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Understand word relationships. Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 9)* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 9 words used in literary texts, grade-appropriate content areas, and other academic contexts. * **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 10)* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 10 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
9-10.RI.5 Analyze in detail how an author's ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter).	**Analyze the development of ideas in informational text. Determine the author's point of view or purpose, and compare points of view between texts.** * • Analyze in detail the structure of Level 9 informational text, including the role of particular sentences, paragraphs, and larger portions of text in developing and refining the author's ideas or claims. • Identify an author's point of view or purpose in Level 9 informational text and analyze the rhetorical techniques an

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	author uses to support that point of view or purpose. • Compare the point of view of two authors and how each treats the same or similar topics in Level 9 informational text. **Analyze the development of ideas in informational text. Determine the author's point of view or purpose, and compare points of view between texts.** * • Analyze in detail the structure of Level 10 informational text, including the role of particular sentences, paragraphs, and larger portions of text in developing and refining the author's ideas or claims. • Identify an author's point of view or purpose in Level 10 informational text and analyze the rhetorical techniques an author uses to support that point of view or purpose. • Compare the point of view of two authors and how each treats the same or similar topics in Level 10 informational text.
9-10.RI.6 Determine an author's point of view or purpose in a text and analyze how an author uses rhetoric to advance that point of view or purpose.	**Analyze the development of ideas in informational text. Determine the author's point of view or purpose, and compare points of view between texts.** * • Analyze in detail the structure of Level 9 informational text, including the role of particular sentences, paragraphs, and larger portions of text in developing and refining the author's ideas or claims. • Identify an author's point of view or purpose in Level 9 informational text and analyze the rhetorical techniques an

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	author uses to support that point of view or purpose. • Compare the point of view of two authors and how each treats the same or similar topics in Level 9 informational text. **Analyze the development of ideas in informational text. Determine the author's point of view or purpose, and compare points of view between texts.** * • Analyze in detail the structure of Level 10 informational text, including the role of particular sentences, paragraphs, and larger portions of text in developing and refining the author's ideas or claims. • Identify an author's point of view or purpose in Level 10 informational text and analyze the rhetorical techniques an author uses to support that point of view or purpose. • Compare the point of view of two authors and how each treats the same or similar topics in Level 10 informational text.
9-10.RI.7 Analyze various accounts of a subject told in different mediums (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account.	**Analyze the development of ideas in informational text. Determine the author's point of view or purpose, and compare points of view between texts.** * • Analyze in detail the structure of Level 9 informational text, including the role of particular sentences, paragraphs, and larger portions of text in developing and refining the author's ideas or claims. • Identify an author's point of view or purpose in Level 9 informational text and analyze the rhetorical techniques an

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	author uses to support that point of view or purpose. • Compare the point of view of two authors and how each treats the same or similar topics in Level 9 informational text. **Analyze the development of ideas in informational text. Determine the author's point of view or purpose, and compare points of view between texts.** * • Analyze in detail the structure of Level 10 informational text, including the role of particular sentences, paragraphs, and larger portions of text in developing and refining the author's ideas or claims. • Identify an author's point of view or purpose in Level 10 informational text and analyze the rhetorical techniques an author uses to support that point of view or purpose. • Compare the point of view of two authors and how each treats the same or similar topics in Level 10 informational text.
9-10.RI.8 Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.	**Identify and evaluate argument in informational text.** Identify the argument and the specific claims that an author makes in Level 9 informational text. Assess whether the reasoning and the evidence are sufficient to support the argument and/or any specific claims that an author makes. Identify false statements and flawed reasoning. **Identify and evaluate argument in informational text.** Identify the argument and the specific claims that an author makes

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	in Level 10 informational text. Assess whether the reasoning and the evidence are sufficient to support the argument and/or any specific claims that an author makes. Identify false statements and flawed reasoning.
9-10.RI.9 Analyze seminal U.S. documents of historical and literary significance (e.g., Washington's Farewell Address, the Gettysburg Address, Roosevelt's Four Freedoms speech, King's "Letter from Birmingham Jail"), including how they address related themes and concepts.	**Analyze literary elements in historical documents.** Analyze how one or more U.S. historical documents suitable to Level 10 use literary techniques to develop themes and concepts appropriate to a particular historical situation.
9-10.L.4.a Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.	**Determine word meaning. Interpret figurative language and author's use of language.** * • Understand the meaning of words and phrases in Level 9 literary or informational text, including academic and/or domain-specific words. • Identify or interpret an author's use of figurative language and/or other literary devices in Level 9 literary or informational text. • Interpret an author's use of connotations, or shades of meaning, in Level 9 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text. **Determine word meaning. Interpret author's use of language.** * • Understand the meaning of words and phrases in Level 10 literary or informational text, including academic and/or domain-specific words.

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	• Interpret an author's use of connotations, or shades of meaning, in Level 10 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text. **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 9)* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 9 words used in literary texts, grade-appropriate content areas, and other academic contexts. * **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 10)* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 10 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
9-10.L.4.c Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word	**Consult reference materials.** Use reference materials, such as a dictionary, glossary, or thesaurus, to find meanings, confirm pronunciations, or determine parts of speech. (Level 9)

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
or determine or clarify its precise meaning [or] its part of speech . . .	**Consult reference materials.** Use reference materials, such as a dictionary, glossary, or thesaurus, to find meanings, confirm pronunciations, or determine parts of speech. (Level 10)
9-10.L.4.d Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning . . . in a dictionary).	**Consult reference materials.** Use reference materials, such as a dictionary, glossary, or thesaurus, to find meanings, confirm pronunciations, or determine parts of speech. (Level 9) **Consult reference materials.** Use reference materials, such as a dictionary, glossary, or thesaurus, to find meanings, confirm pronunciations, or determine parts of speech. (Level 10)
9-10.L.4.d Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).	**Determine word meaning. Interpret figurative language and author's use of language.** * • Understand the meaning of words and phrases in Level 9 literary or informational text, including academic and/or domain-specific words. • Identify or interpret an author's use of figurative language and/or other literary devices in Level 9 literary or informational text. • Interpret an author's use of connotations, or shades of meaning, in Level 9 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text. **Determine word meaning. Interpret author's use of language.** *

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	• Understand the meaning of words and phrases in Level 10 literary or informational text, including academic and/or domain-specific words. • Interpret an author's use of connotations, or shades of meaning, in Level 10 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 9 words used in literary texts, grade-appropriate content areas, and other academic contexts. * **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 10 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
9-10.L.5.b Analyze nuances in the meaning of words with similar denotations.	**Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 9)* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 10)*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
9-10.L.6 Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.	**Determine word meaning. Interpret figurative language and author's use of language.** * • Understand the meaning of words and phrases in Level 9 literary or informational text, including academic and/or domain-specific words. • Identify or interpret an author's use of figurative language and/or other literary devices in Level 9 literary or informational text. • Interpret an author's use of connotations, or shades of meaning, in Level 9 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text. **Determine word meaning. Interpret author's use of language.** * • Understand the meaning of words and phrases in Level 10 literary or informational text, including academic and/or domain-specific words. • Interpret an author's use of connotations, or shades of meaning, in Level 10 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text. **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 9 words used in literary texts, grade-appropriate content areas, and other academic contexts. *

**This skill is related to the aligned standard*

Grades 9 - 10 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Use general academic and domain-specific vocabulary. Demonstrate knowledge of Level 10 words used in literary texts, grade-appropriate content areas, and other academic contexts.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grades 11 - 12

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
11-12.RL.1 Cite strong and thorough textual evidence to support analysis of . . . inferences drawn from the text . . .	**Make inferences.** Draw conclusions or make inferences in Level 11 literary or informational text.
11-12.RL.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly . . .	**Cite textual evidence.** Cite several pieces of textual evidence that strongly support a statement about what a Level 11 literary or informational text says explicitly.
11-12.RL.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.	**Cite textual evidence and make inferences.** • Cite several pieces of textual evidence that strongly support a statement about what a Level 12 literary or informational text says explicitly. • Draw conclusions or make inferences in Level 12 literary or informational text.
11-12.RL.2 Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.	**Determine multiple themes in a literary text. Summarize the text. Compare themes or topics across two or more texts. *** • Identify two or more themes or central ideas in a Level 11 literary text and analyze the interaction of those themes in the text. • Summarize a story, poem, or other Level 11 literary text. • Demonstrate knowledge of eighteenth- through early twentieth–century foundational works of American literature and analyze how two or more Level 11 texts from the same period treat similar themes or topics. **Determine multiple themes in a literary text. Summarize the text. Compare themes or topics across two or more texts. ***

**This skill is related to the aligned standard*

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	• Identify two or more themes or central ideas in a Level 12 literary text and analyze the interaction of those themes in the text. • Summarize a story, poem, or other Level 12 literary text. • Demonstrate knowledge of eighteenth- through early twentieth–century foundational works of American literature and analyze how two or more Level 12 texts from the same period treat similar themes or topics.
11-12.RL.3 Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed).	**Analyze the impact of story elements in literary text.** Identify and evaluate the impact of author's choices regarding structural elements of Level 11 literary text, such as setting, plot, and character development. **Analyze the impact of story elements in literary text.** Identify and evaluate the impact of author's choices regarding structural elements of Level 12 literary text, such as setting, plot, and character development.
11-12.RL.4 Determine the meaning of words and phrases as they are used in the text . . .	**Determine word meaning.** Understand the meaning of words and phrases in Level 12 literary or informational text, including academic and/or domain-specific words.
11-12.RL.4 Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone . . .	**Interpret figurative language and author's use of language.** • Identify or interpret an author's use of figurative language and/or other literary devices in Level 12 literary or informational text. • Interpret an author's use of connotations, or shades of meaning, in Level 12

**This skill is related to the aligned standard*

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text.
11-12.RL.4 Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful.	**Determine word meaning. Interpret figurative language and author's use of language.** • Understand the meaning of words and phrases in Level 11 literary or informational text, including academic and/or domain-specific words. • Identify or interpret an author's use of figurative language and/or other literary devices in Level 11 literary or informational text. • Interpret an author's use of connotations, or shades of meaning, in Level 11 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text. **Understand word relationships** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 11)* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 11 words used in literary texts, grade-appropriate content areas, and other academic contexts.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms,

**This skill is related to the aligned standard*

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 12)* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 12 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
11-12.RL.5 Analyze how an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall structure and meaning as well as its aesthetic impact.	**Analyze the structure of text.** * • Analyze the structure of Level 11 informational text and evaluate the impact of the structure on the clarity, persuasiveness, and engagement of the text. • Analyze how the author structures specific parts within Level 11 literary text and evaluate how those choices contribute to the whole structure, meaning, and aesthetic value of the text. **Analyze the structure of text.** * • Analyze the structure of Level 12 informational text and evaluate the impact of the structure on the clarity, persuasiveness, and engagement of the text. • Analyze how the author structures specific parts within Level 12 literary text and evaluate how those choices contribute to the whole structure, meaning, and aesthetic value of the text.
11-12.RL.6 Analyze a case in which grasping point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement).	**Analyze point of view or author's purpose.** * • Identify point of view in Level 11 literary text and analyze how it is conveyed through a tension between

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	explicit and implicit meaning, such as satire, sarcasm, irony, or understatement. • Identify an author's point of view or purpose in Level 11 informational text and analyze how style and content work together to make the rhetoric effective. • Compare opposing points of view on the same event, issue, or topic in Level 11 informational text and evaluate each author's reasoning and presentation of relevant supporting evidence in the text. **Analyze point of view or author's purpose.** * • Identify point of view in Level 12 literary text and analyze how it is conveyed through a tension between explicit and implicit meaning, such as satire, sarcasm, irony, or understatement. • Identify an author's point of view or purpose in Level 12 informational text and analyze how style and content work together to make the rhetoric effective. • Compare opposing points of view on the same event, issue, or topic in Level 12 informational text and evaluate each author's reasoning and presentation of relevant supporting evidence in the text.
11-12.RL.7 Analyze multiple interpretations of a story, drama, or poem (e.g., recorded or live production of a play or recorded novel or poetry), evaluating how each version interprets the source text.	**Analyze multiple interpretations of a story, drama, or poem.** Analyze multiple interpretations of Level 11 literary text, including different print versions of a story or poem, as well as audio or video versions of a book or play. Evaluate how each version interprets the source text. **Analyze multiple interpretations of a story, drama, or poem.** Analyze multiple

**This skill is related to the aligned standard*

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	interpretations of Level 12 literary text, including different print versions of a story or poem, as well as audio or video versions of a book or play. Evaluate how each version interprets the source text.
11-12.RL.9 Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics.	**Determine multiple themes in a literary text. Summarize the text. Compare themes or topics across two or more texts.** * • Identify two or more themes or central ideas in a Level 11 literary text and analyze the interaction of those themes in the text. • Summarize a story, poem, or other Level 11 literary text. • Demonstrate knowledge of eighteenth- through early twentieth–century foundational works of American literature and analyze how two or more Level 11 texts from the same period treat similar themes or topics. **Determine multiple themes in a literary text. Summarize the text. Compare themes or topics across two or more texts.** * • Identify two or more themes or central ideas in a Level 12 literary text and analyze the interaction of those themes in the text. • Summarize a story, poem, or other Level 12 literary text. • Demonstrate knowledge of eighteenth- through early twentieth–century foundational works of American literature and analyze how two or more Level 12 texts from the same period treat similar themes or topics.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for English Language Arts to Skills (continued)

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
11-12.RI.1 Cite strong and thorough textual evidence to support analysis of . . . inferences drawn from the text . . .	**Make inferences.** Draw conclusions or make inferences in Level 11 literary or informational text.
11-12.RI.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly . . .	**Cite textual evidence.** Cite several pieces of textual evidence that strongly support a statement about what a Level 11 literary or informational text says explicitly.
11-12.RI.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.	**Cite textual evidence and make inferences.** • Cite several pieces of textual evidence that strongly support a statement about what a Level 12 literary or informational text says explicitly. • Draw conclusions or make inferences in Level 12 literary or informational text.
11-12.RI.2 Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text.	**Determine multiple central ideas in an informational text. Summarize the text.** • Identify two or more central ideas of a Level 11 informational text and analyze the interaction of those ideas in the text. • Summarize Level 11 informational text, identifying the central idea and the supporting ideas. **Analyze complex ideas and details, including multiple central ideas, in informational text. Summarize the text.** * • Evaluate the overall impact of how an author develops a complex set of ideas or sequence of events in Level 12 informational text, with particular attention to how specific individuals, ideas, or events interact. • Identify two or more central ideas of a Level 12 informational text and analyze the interaction of those ideas in the text.

**This skill is related to the aligned standard*

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	• Summarize Level 12 informational text, identifying the central idea and the supporting ideas.
11-12.RI.3 Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.	**Analyze complex ideas in informational text.** Evaluate the overall impact of how an author develops a complex set of ideas or sequence of events in Level 11 informational text, with particular attention to how specific individuals, ideas, or events interact. **Analyze complex ideas and details, including multiple central ideas, in informational text. Summarize the text.** * • Evaluate the overall impact of how an author develops a complex set of ideas or sequence of events in Level 12 informational text, with particular attention to how specific individuals, ideas, or events interact. • Identify two or more central ideas of a Level 12 informational text and analyze the interaction of those ideas in the text. • Summarize Level 12 informational text, identifying the central idea and the supporting ideas.
11-12.RI.4 Determine the meaning of words and phrases as they are used in a text . . .	**Determine word meaning.** Understand the meaning of words and phrases in Level 12 literary or informational text, including academic and/or domain-specific words.
11-12.RI.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how	**Determine word meaning. Interpret figurative language and author's use of language.** * • Understand the meaning of words and phrases in Level 11 literary or informational text, including academic and/or domain-specific words.

**This skill is related to the aligned standard*

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
Madison defines faction in Federalist No. 10).	• Identify or interpret an author's use of figurative language and/or other literary devices in Level 11 literary or informational text. • Interpret an author's use of connotations, or shades of meaning, in Level 11 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text. **Understand word relationships** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 11)* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 11 words used in literary texts, grade-appropriate content areas, and other academic contexts.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 12)* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 12 words used in literary texts, grade-appropriate content areas, and other academic contexts.*

**This skill is related to the aligned standard*

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Interpret figurative language and author's use of language. * • Identify or interpret an author's use of figurative language and/or other literary devices in Level 12 literary or informational text. • Interpret an author's use of connotations, or shades of meaning, in Level 12 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text.
11-12.RI.5 Analyze and evaluate the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging.	**Analyze the structure of text.** * • Analyze the structure of Level 11 informational text and evaluate the impact of the structure on the clarity, persuasiveness, and engagement of the text. • Analyze how the author structures specific parts within Level 11 literary text and evaluate how those choices contribute to the whole structure, meaning, and aesthetic value of the text. **Analyze the structure of text.** * • Analyze the structure of Level 12 informational text and evaluate the impact of the structure on the clarity, persuasiveness, and engagement of the text. • Analyze how the author structures specific parts within Level 12 literary text and evaluate how those choices contribute to the whole structure, meaning, and aesthetic value of the text.
11-12.RI.6 Determine an author's point of view or purpose in a text in which the	**Analyze point of view or author's purpose.** *

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
rhetoric is particularly effective, analyzing how style and content contribute to the power, persuasiveness, or beauty of the text.	• Identify point of view in Level 11 literary text and analyze how it is conveyed through a tension between explicit and implicit meaning, such as satire, sarcasm, irony, or understatement. • Identify an author's point of view or purpose in Level 11 informational text and analyze how style and content work together to make the rhetoric effective. • Compare opposing points of view on the same event, issue, or topic in Level 11 informational text and evaluate each author's reasoning and presentation of relevant supporting evidence in the text. **Analyze point of view or author's purpose.** * • Identify point of view in Level 12 literary text and analyze how it is conveyed through a tension between explicit and implicit meaning, such as satire, sarcasm, irony, or understatement. • Identify an author's point of view or purpose in Level 12 informational text and analyze how style and content work together to make the rhetoric effective. • Compare opposing points of view on the same event, issue, or topic in Level 12 informational text and evaluate each author's reasoning and presentation of relevant supporting evidence in the text.
11-12.RI.7 Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.	**Analyze multiple sources of information presented in varied formats.** Analyze Level 11 informational text and translate, integrate, and evaluate multiple sources of information presented in varied formats and media.

**This skill is related to the aligned standard*

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	Analyze multiple sources of information presented in varied formats. Analyze Level 12 informational text and translate, integrate, and evaluate multiple sources of information presented in varied formats and media.
11-12.RI.8 Delineate and evaluate the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning (e.g., in U.S. Supreme Court majority opinions and dissents) and the premises, purposes, and arguments in works of public advocacy (e.g., The Federalist, presidential addresses).	**Delineate and evaluate reasoning in historical documents.** Trace and evaluate an author's premises, reasoning, and evidence in U.S. historical text suitable to Level 11. **Delineate and evaluate reasoning in historical documents.** Trace and evaluate an author's premises, reasoning, and evidence in U.S. historical text suitable to Level 12.
11-12.RI.9 Analyze seventeenth-, eighteenth-, and nineteenth-century foundational U.S. documents of historical and literary significance (including The Declaration of Independence, the Preamble to the Constitution, the Bill of Rights, and Lincoln's Second Inaugural Address) for their themes, purposes, and rhetorical features.	**Analyze literary elements in historical documents.** Analyze how one or more U.S. historical documents suitable to Level 11 use literary techniques to develop themes and concepts appropriate to a particular historical situation. **Analyze literary elements in historical documents.** Analyze how one or more U.S. historical documents suitable to Level 12 use literary techniques to develop themes and concepts appropriate to a particular historical situation.
11-12.L.4.a Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.	**Determine word meaning. Interpret figurative language and author's use of language.** * • Understand the meaning of words and phrases in Level 11 literary or informational text, including academic and/or domain-specific words.

**This skill is related to the aligned standard*

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	• Identify or interpret an author's use of figurative language and/or other literary devices in Level 11 literary or informational text. • Interpret an author's use of connotations, or shades of meaning, in Level 11 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text. **Determine word meaning.** Understand the meaning of words and phrases in Level 12 literary or informational text, including academic and/or domain-specific words.* **Understand word relationships** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 11)* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 11 words used in literary texts, grade-appropriate content areas, and other academic contexts.* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 12)* **Use general academic and domain-specific vocabulary.** Demonstrate

**This skill is related to the aligned standard*

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	knowledge of Level 12 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
11-12.L.4.c Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning [or] its part of speech . . .	**Consult reference materials.** Use reference materials, such as a dictionary, glossary, or thesaurus, to find meanings, confirm pronunciations, or determine parts of speech. (Level 11) **Consult reference materials.** Use reference materials, such as a dictionary, glossary, or thesaurus, to find meanings, confirm pronunciations, or determine parts of speech. (Level 12)
11-12.L.4.d Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning . . . in a dictionary).	**Consult reference materials.** Use reference materials, such as a dictionary, glossary, or thesaurus, to find meanings, confirm pronunciations, or determine parts of speech. (Level 11) **Consult reference materials.** Use reference materials, such as a dictionary, glossary, or thesaurus, to find meanings, confirm pronunciations, or determine parts of speech. (Level 12)
11-12.L.4.d Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).	**Determine word meaning. Interpret figurative language and author's use of language.** * • Understand the meaning of words and phrases in Level 11 literary or informational text, including academic and/or domain-specific words. • Identify or interpret an author's use of figurative language and/or other literary devices in Level 11 literary or informational text.

**This skill is related to the aligned standard*

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
	• Interpret an author's use of connotations, or shades of meaning, in Level 11 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text. **Determine word meaning.** Understand the meaning of words and phrases in Level 12 literary or informational text, including academic and/or domain-specific words.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 11 words used in literary texts, grade-appropriate content areas, and other academic contexts.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 12 words used in literary texts, grade-appropriate content areas, and other academic contexts.*
11-12.L.5.b Analyze nuances in the meaning of words with similar denotations.	**Understand word relationships** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 11)* **Understand word relationships.** Recognize synonyms and antonyms. Demonstrate understanding of idioms, shades of meaning, and figurative language, such as analogies, metaphors, or similes. (Level 12)*

**This skill is related to the aligned standard*

Grades 11 - 12 (continued)

Arizona's College and Career Ready Standards for English Language Arts	Aligned Skills
11-12.L.6 Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.	**Determine word meaning. Interpret figurative language and author's use of language.** * • Understand the meaning of words and phrases in Level 11 literary or informational text, including academic and/or domain-specific words. • Identify or interpret an author's use of figurative language and/or other literary devices in Level 11 literary or informational text. • Interpret an author's use of connotations, or shades of meaning, in Level 11 literary or informational text. Interpret the impact of an author's specific word choice on mood or tone in literary or informational text. **Determine word meaning.** Understand the meaning of words and phrases in Level 12 literary or informational text, including academic and/or domain-specific words.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 11 words used in literary texts, grade-appropriate content areas, and other academic contexts.* **Use general academic and domain-specific vocabulary.** Demonstrate knowledge of Level 12 words used in literary texts, grade-appropriate content areas, and other academic contexts.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to i-Ready Diagnostic Mathematics Skills

Grade K

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
K.CC.1 Count to 100 by . . . tens.	Count by 10s to 100.
K.CC.1 Count to 100 by ones . . .	Count by 1s to 100.
K.CC.1 Count to 100 by ones and by tens.	Count forward by 1s from any number less than 100.*
K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	Count forward by 1s from any number less than 100.
K.CC.3 . . . Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	Count up to 20 objects.
K.CC.4.a When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.	Count up to 20 objects.
K.CC.4.b Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	Count up to 20 objects.
K.CC.4.c Understand that each successive number name refers to a quantity that is one larger.	Identify the number that is one more than a given number to ten.*
K.CC.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.	Count up to 20 objects.* Make a set of up to 10 objects.*
K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	Compare two sets with up to 10 objects. Count up to 20 objects.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade K (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
K.CC.7 Compare two numbers between 1 and 10 presented as written numerals.	Identify the number that is one more than a given number to ten.* Identify the number that is one less than a given number to ten.*
K.0A.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	Write and solve number sentences for combining and joining situations with numbers to 10.* Write and solve number sentences for separation and take away situations with numbers to 10.*
K.0A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	Write and solve number sentences for combining and joining situations with numbers to 10.* Solve addition problems by counting on with numbers to 10.* Write and solve number sentences for separation and take away situations with numbers to 10.* Identify and find sums for doubles addition facts.* Identify the number that is one more than a given number to ten.* Identify the number that is one less than a given number to ten.* Use a number line to count up or back to add or subtract 1 or 2 from numbers to 20.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade K (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	Count back to subtract 1, 2, or 3 from numbers up to 10.* Add and subtract within 5.* Build number sentences to represent real-world subtraction problems involving take from, take apart, or comparison situations. * Solve addition problems for combining, joining, or comparison situations.*
K.0A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	Find different number pairs with the same sum for sums to 10.* Find combinations of 10 and identify missing addends.* Relate addition and subtraction to part-part-whole concepts.*
K.0A.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	Relate addition and subtraction to part-part-whole concepts.*
K.0A.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing. . .	Find combinations of 10 and identify missing addends.
K.0A.5 Fluently add and subtract within 5.	Add and subtract within 5. Solve addition problems by counting on with numbers to 10.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade K (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	Write and solve number sentences for separation and take away situations with numbers to 10.* Identify the number that is one more than a given number to ten.* Identify the number that is one less than a given number to ten.* Use a number line to count up or back to add or subtract 1 or 2 from numbers to 20.* Count back to subtract 1, 2, or 3 from numbers up to 10.* Add within 20.* Subtract within 20.*
K.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	Express numbers from 11 to 19 using tens and ones.
K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	Identify measurable attributes of objects using informal language (how long, wide, thick, deep, short or tall they are, or how much they weigh or hold). Compare the length of two objects (longer, taller, shorter, thicker).*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade K (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.	Compare the length of two objects (longer, taller, shorter, thicker).* Identify measurable attributes of objects using informal language (how long, wide, thick, deep, short or tall they are, or how much they weigh or hold).*
K.MD.3 Classify objects into given categories . . .	Sort objects according to one or more attributes.
K.G.1 Describe objects in the environment using names of shapes . . .	Identify basic two-dimensional shapes (square, circle, rectangle, triangle). Identify basic three-dimensional shapes (cube, cone, cylinder, sphere).
K.G.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.	Identify spatial relationships (out, above, below) and follow directions to move objects into relative positions (over, under, top, bottom, behind, between).*
K.G.2 Correctly name shapes regardless of their orientations or overall size.	Identify basic two-dimensional shapes (square, circle, rectangle, triangle). Identify basic three-dimensional shapes (cube, cone, cylinder, sphere).
K.G.3 Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").	Identify basic two-dimensional shapes (square, circle, rectangle, triangle).* Identify basic three-dimensional shapes (cube, cone, cylinder, sphere).*
K.G.4 Analyze and compare two- . . . dimensional shapes . . . using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) . . .	Describe parts of two-dimensional shapes using informal language such as the number of sides and corners.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade K (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
K.G.4 Analyze and compare two- . . . dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	Compare and contrast attributes of two-dimensional shapes (circle, square, rectangle, triangle, diamond).
K.G.6 Compose simple shapes to form larger shapes.	Combine and separate two-dimensional shapes to create other two-dimensional shapes and predict the results.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 1

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
1.OA.1 Use . . . subtraction within 20 to solve word problems involving situations of . . . comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Solve subtraction problems for comparison situations.
1.OA.1 Use . . . subtraction within 20 to solve word problems involving situations of . . . taking from . . . [or] taking apart . . . with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Solve subtraction problems for separation or take away situations.
1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Build number sentences to represent real-world subtraction problems involving take from, take apart, or comparison situations. Solve addition problems for combining, joining, or comparison situations. Write and solve number sentences for combining and joining situations with numbers to 10.* Solve addition problems by counting on with numbers to 10.* Write and solve number sentences for separation and take away situations with numbers to 10.* Identify and find sums for doubles addition facts.*

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	Solve subtraction problems for separation or take away situations and check the solution using addition.* Count back to subtract 1, 2, or 3 from numbers up to 10.* Add within 20.* Subtract within 20.*
1.OA.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Add within 20.* Add 3 one-digit numbers.*
1.OA.3 Apply properties of operations as strategies to add and subtract.	Demonstrate an understanding of the commutative and associative properties without using the terms associative and commutative. Build number sentences to represent real-world addition problems, recognizing that the order of addends does not affect the sum.* Determine the unknown number in an addition or subtraction equation.*
1.OA.4 Understand subtraction as an unknown-addend problem.	Find combinations of 10 and identify missing addends.* Relate addition and subtraction to part-part-whole concepts.*
1.OA.5 Relate counting to . . . subtraction (e.g., by counting on 2 to add 2).	Solve basic subtraction facts by counting back to subtract 1, 2, or 3.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 1 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	Solve basic subtraction facts by counting on. Solve subtraction problems by counting on. Count back to subtract 1, 2, or 3 from numbers up to 10.
1.OA.5 Relate counting to addition . . . (e.g., by counting on 2 to add 2).	Solve addition problems by counting on with numbers to 10. Solve addition problems by counting on.
1.OA.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	Use a number line to count up or back to add or subtract 1 or 2 from numbers to 20.
1.OA.6 . . . Subtract within 20 . . .	Subtract within 20.
1.OA.6 . . . Use strategies such as . . . using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4) . . .	Know addition/subtraction fact families.
1.OA.6 Add . . . within 20 . . .	Add within 20.
1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).	Solve addition problems by counting on with numbers to 10.* Write and solve number sentences for separation and take away situations with numbers to 10.* Identify and find sums for doubles addition facts.* Solve basic subtraction facts by counting back to subtract 1, 2, or 3.* Solve basic subtraction facts by counting on.*

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	Solve subtraction problems for separation or take away situations and check the solution using addition.* Write, solve, and use addition to check subtraction number sentences for part-part-whole situations.* Solve subtraction problems for comparison situations.* Use a number line to count up or back to add or subtract 1 or 2 from numbers to 20.* Count back to subtract 1, 2, or 3 from numbers up to 10.* Build number sentences to represent real-world subtraction problems involving take from, take apart, or comparison situations. * Solve addition problems for combining, joining, or comparison situations.*
1.OA.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.	Demonstrate an understanding of the equal sign and determine if equations involving addition and subtraction are true or false.
1.OA.8 Determine the unknown whole number in an addition . . . equation relating to three whole numbers.	Find combinations of 10 and identify missing addends.
1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.	Determine the unknown number in an addition or subtraction equation.
1.NBT.1 Count to 120, starting at any number less than 120. In this range, read	Recognize numerals to 10.*

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
and write numerals and represent a number of objects with a written numeral.	Count forward by 1s from any number less than 100.* Recognize numerals up to 100.* Read and write whole numbers through hundreds using number words, standard form, and expanded form.*
1.NBT.2.a 10 can be thought of as a bundle of ten ones - called a "ten."	Group up to 100 objects in sets of 10.* Use base-ten models to represent a two-digit number and identify the corresponding numeral.*
1.NBT.2.b The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.	Use base-ten models to represent a two-digit number and identify the corresponding numeral.*
1.NBT.2.c The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).	Group up to 100 objects in sets of 10.* Use base-ten models to represent a two-digit number and identify the corresponding numeral.*
1.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.	Compare and order two-digit numbers.
1.NBT.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit	Add two-digit numbers with regrouping. Solve addition problems by counting on with numbers to 10.* Know addition/subtraction fact families.* Use a number line to count up or back to add or subtract 1 or 2 from numbers to 20.*

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	Add within 20.* Add two-digit numbers without regrouping.*
1.NBT.4 Add within 100, including adding a two-digit number and a one-digit number. . . using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction . . .	Add a two-digit number and a one-digit number.
1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	Subtract 10 from two-digit numbers.
1.NBT.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	Subtract 10 from two-digit numbers.*
1.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.	Compare the length of two objects (longer, taller, shorter, thicker).* Solve problems involving comparing lengths of objects.*
1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.	Tell time to the hour and half hour on an analog clock and select appropriate units to measure time (hours, days, minutes).*
1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of	Organize, represent, and interpret several categories of data in a picture graph.*

**This skill is related to the aligned standard*

Grade 1 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
data points, how many in each category, and how many more or less are in one category than in another.	Create a picture graph with a single-unit scale to represent data that includes multiple categories.* Construct a bar graph with a single-unit scale to represent data that includes multiple categories.*
1.G.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) . . .	Identify defining attributes of two-dimensional shapes.
1.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) . . . to create a composite shape . . .	Combine and separate two-dimensional shapes to create other two-dimensional shapes and predict the results.
1.G.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	Identify fractions (1/2, 1/4, 3/4) as parts of a whole using pictures.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 2

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
2.OA.1 Use . . . subtraction within 100 to solve one- . . . step word problems involving situations of . . . comparing . . .	Solve subtraction problems for comparison situations.
2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	Solve subtraction problems for separation or take away situations.* Solve subtraction problems for separation or take away situations and check the solution using addition.* Write, solve, and use addition to check subtraction number sentences for part-part-whole situations.* Solve subtraction problems by counting back 1, 2, or 3.* Add two-digit numbers with regrouping.* Subtract a one-digit number from a two-digit number.* Build number sentences to represent real-world subtraction problems involving take from, take apart, or comparison situations. * Solve addition problems for combining, joining, or comparison situations.*
2.OA.2 Fluently . . . subtract within 20 using mental strategies. . .	Subtract within 20.
2.OA.2 Fluently add . . . within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	Add within 20.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 2 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
2.OA.2 Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	Solve subtraction problems for separation or take away situations and check the solution using addition.* Write, solve, and use addition to check subtraction number sentences for part-part-whole situations.* Solve subtraction problems for comparison situations.*
2.OA.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.	Demonstrate an understanding that a group of objects is an even number of objects if it can be divided into complete pairs and is odd if it cannot; express even numbers as doubles facts. Identify odd and even numbers up to 100.* Count and group by 2s, 5s, and 10s to 100.*
2.OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.	Write a multiplication sentence to represent objects in a rectangular array, recognizing that the order of factors does not affect the product. Write multiplication sentences to represent equal groups and repeated addition.*
2.NBT.1.a 100 can be thought of as a bundle of ten tens - called a "hundred."	Identify the value of the digits in three-digit numbers. Model three-digit numbers.*
2.NBT.1.b The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).	Model three-digit numbers. Identify the value of the digits in three-digit numbers.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 2 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
2.NBT.2 . . . skip-count by 5s, 10s, and 100s.	Count and skip-count by 5s, 10s, and 100s to 1,000.
2.NBT.2 Count within 1000; skip-count by 5s, 10s, and 100s.	Count by 2s to 20 using a chart or models.* Count by 5s to 100 using a chart or models.* Count and group by 2s, 5s, and 10s to 100.*
2.NBT.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	Read and write whole numbers through hundreds using number words, standard form, and expanded form. Recognize numerals up to 100.* Read and write number words from 1 to 120.* Model three-digit numbers.*
2.NBT.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.	Compare and order three-digit numbers.
2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	Identify and find sums for doubles addition facts.* Solve subtraction problems for separation or take away situations and check the solution using addition.* Write, solve, and use addition to check subtraction number sentences for part-part-whole situations.* Solve subtraction problems for comparison situations.*

**This skill is related to the aligned standard*

Grade 2 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	Add within 20.* Subtract within 20.* Add a two-digit number and a one-digit number.* Add two-digit numbers without regrouping.* Subtract 10 from two-digit numbers.* Add two-digit numbers with regrouping.* Subtract a one-digit number from a two-digit number.* Subtract two-digit numbers with regrouping.* Subtract two-digit numbers without regrouping.*
2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.	Add within 20.* Add two-digit numbers without regrouping.* Add two-digit numbers with regrouping.*
2.NBT.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit	Add two-digit numbers without regrouping.* Subtract 10 from two-digit numbers.* Add two-digit numbers with regrouping.*

**This skill is related to the aligned standard*

Grade 2 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.	Subtract a one-digit number from a two-digit number.* Subtract two-digit numbers with regrouping.* Subtract two-digit numbers without regrouping.* Add three-digit numbers with regrouping.* Subtract three-digit numbers with regrouping.*
2.NBT.8 Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.	Subtract 10 from two-digit numbers.*
2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations.	Add two-digit numbers without regrouping.* Subtract 10 from two-digit numbers.* Add a two-digit number and a one-digit number.* Add two-digit numbers with regrouping.* Subtract a one-digit number from a two-digit number.* Subtract two-digit numbers with regrouping.* Subtract two-digit numbers without regrouping.*

**This skill is related to the aligned standard*

Grade 2 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	Add three-digit numbers with regrouping.* Subtract three-digit numbers with regrouping.*
2.MD.1 Measure the length of an object by . . . using appropriate tools such as rulers . . .	Use a ruler to measure length in inches. Use a ruler to measure length to 1/4 inch. Use a ruler to measure length in centimeters.
2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	Solve problems involving comparing lengths of objects.
2.MD.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.	Solve problems involving comparing lengths of objects.*
2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	Tell time to the nearest five minutes.
2.MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ . . . symbols appropriately.	Solve problems involving counting dollar bills and coins, and use the dollar symbol.
2.MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately.	Solve problems with dollar bills and coins and use dollar and cent symbols.
2.MD.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where	Show measurements of objects in a line plot with a scale in whole-number units.

**This skill is related to the aligned standard*

Grade 2 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
the horizontal scale is marked off in whole-number units.	
2.MD.10 Draw a . . . bar graph (with single-unit scale) to represent a data set with up to four categories . . .	Construct a bar graph with a single-unit scale to represent data that includes multiple categories.
2.MD.10 Draw a picture graph . . . (with single-unit scale) to represent a data set with up to four categories . . .	Create a picture graph with a single-unit scale to represent data that includes multiple categories.
2.MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	Organize, represent, and interpret several categories of data in a picture graph.*
2.G.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	Identify squares, rectangles, parallelograms, rhombuses, and trapezoids, and recognize them as examples of quadrilaterals.*
2.G.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	Find the total number of square units in a rectangle divided into same-size squares.*
2.G.3 Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	Identify fractions (1/2, 1/4, 3/4) as parts of a whole using pictures.* Identify fractions that name part of a whole (denominators of 2, 3, 4, 5, 6, 8, 10, 12).*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 3

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.	Write multiplication sentences to represent equal groups and repeated addition.* Write a multiplication sentence to represent objects in a rectangular array, recognizing that the order of factors does not affect the product.*
3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.	Solve problems involving partitioning in equal groups, including identifying the remainder.* Solve problems involving sharing equal groups, including identifying the remainder.*
3.OA.3 Use . . . division within 100 to solve word problems in situations involving equal groups . . .	Solve problems involving partitioning in equal groups, including identifying the remainder. Solve problems involving sharing equal groups, including identifying the remainder.
3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	Multiply or divide whole numbers to solve real-world problems involving multiplicative comparisons.*
3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers.	Know multiplication/division fact families.*
3.OA.5 Apply properties of operations as strategies to multiply and divide.	Know multiplication facts through 9 times 9. Know multiplication/division fact families.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 3 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
3.OA.6 Understand division as an unknown-factor problem.	Solve problems involving partitioning in equal groups, including identifying the remainder.* Solve problems involving sharing equal groups, including identifying the remainder.* Know multiplication/division fact families.*
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	Solve real-world problems involving division of a two-digit number by a one-digit number.* Know multiplication facts through 9 times 9.* Know division facts through 81 divided by 9.*
3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 ÷ 5 = 40, one knows 40 ÷ 5 = 8) . . .	Know multiplication/division fact families.
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	Write and solve two-step real-world problems using addition, subtraction, multiplication, and division. Determine the operation(s) needed to solve one- and two-step problems involving all four operations with whole numbers.*
3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.	Find and explain arithmetic patterns such as every multiple of 5 will end in either a 0 or a 5.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 3 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	Round whole numbers to the nearest ten and hundred.
3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	Add a two-digit number and a one-digit number.* Add two-digit numbers with regrouping.* Subtract a one-digit number from a two-digit number.* Subtract two-digit numbers with regrouping.* Subtract two-digit numbers without regrouping.* Add three-digit numbers with regrouping.* Subtract three-digit numbers with regrouping.*
3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.	Multiply 10 or a multiple of 10 by a one-digit number. Multiply a whole number by a power of 10 or a multiple of 10. Multiply two-digit numbers by one-digit numbers.*
3.NF.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.	Identify fractions (1/2, 1/4, 3/4) as parts of a whole using pictures. Identify fractions that name part of a whole (denominators of 2, 3, 4, 5, 6, 8, 10, 12).

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 3 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
3.NF.2.a Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.	Identify fractions shown on a number line.*
3.NF.2.b Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.	Identify fractions shown on a number line.
3.NF.3.a Understand two fractions as equivalent (equal) if they are the same size . . .	Use models to find equivalent fractions.
3.NF.3.b . . . Explain why the fractions are equivalent, e.g., by using a visual fraction model.	Use models to find equivalent fractions.
3.NF.3.b . . . Generate simple equivalent fractions, (e.g., 1/2 = 2/4, 4/6 = 2/3). . .	Write equivalent fractions, including fractions in simplest form.
3.NF.3.d Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	Use symbols to compare fractions represented by pictures or models.* Compare and order fractions using fraction bars.* Compare two fractions with unlike denominators.*
3.MD.1 . . . Measure time intervals in minutes . . .	Find elapsed time in minutes. Solve real-world problems involving elapsed time.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 3 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
3.MD.1 Tell . . . time to the nearest minute . . .	Tell time to the minute.
3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	Add hours or minutes to determine elapsed time.*
3.MD.2 . . . Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.	Use the four operations and drawings to solve one-step word problems involving masses or volumes expressed in like units.
3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.	Use a balance scale to measure and compare weights in ounces and pounds.*
3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.	Construct and interpret scaled bar graphs and scaled picture graphs.
3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.	Show data on a line plot with a scale that includes whole-number units.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 3 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
3.MD.5.a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.	Cover a plane figure with unit squares, and count squares to measure area.*
3.MD.5.b A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.	Cover a plane figure with unit squares, and count squares to measure area.
3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).	Cover a plane figure with unit squares, and count squares to measure area.
3.MD.7.a Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.	Cover a plane figure with unit squares, and count squares to measure area.* Use formulas to find the area of rectangles and squares.*
3.MD.7.b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.	Write a multiplication sentence to represent objects in a rectangular array, recognizing that the order of factors does not affect the product.* Use formulas to find the area of rectangles and squares.*
3.MD.7.d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.	Solve area problems by decomposing figures into non-overlapping rectangles and adding the areas of the rectangles.
3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the	Use side lengths to solve problems involving perimeter.

**This skill is related to the aligned standard*

Grade 3 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
same perimeter and different areas or with the same area and different perimeters.	
3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	Identify squares, rectangles, parallelograms, rhombuses, and trapezoids, and recognize them as examples of quadrilaterals.
3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	Describe areas of equal parts of a shape using unit fractions.

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 4

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	Write multiplication sentences to represent equal groups and repeated addition.* Multiply or divide whole numbers to solve real-world problems involving multiplicative comparisons.*
4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	Multiply or divide whole numbers to solve real-world problems involving multiplicative comparisons. Solve problems involving partitioning in equal groups, including identifying the remainder.* Solve problems involving sharing equal groups, including identifying the remainder.* Divide up to three-digit numbers by one-digit numbers.*
4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	Write and solve number sentences with variables to determine the answers to multi-step real-world problems using the four operations and whole numbers. Interpret the remainder in a real-world problem involving division of up to a three-digit number by a one-digit number.*
4.OA.4 . . . Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. . .	Identify multiples of whole numbers with products to 100.
4.OA.4 . . . Determine whether a given whole number in the range 1-100 is prime or composite.	Determine whether a whole number from 1 to 100 is prime or composite.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 4 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
4.OA.4 Find all factor pairs for a whole number in the range 1-100 . . .	Identify factor pairs of whole numbers up to 100.
4.OA.5 Generate a number . . . pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.	Describe, extend, analyze, and make generalizations about numeric patterns.
4.NBT.1 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.	Read and write whole numbers through hundred millions in expanded form and standard form and identify the value of the digits.*
4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals . . . and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	Read and write whole numbers through hundred thousands in expanded form and standard form and identify the value of the digits.
4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	Read and write whole numbers through hundred millions in expanded form and standard form and identify the value of the digits.* Compare and order numbers through hundred millions.* Compare and order numbers through hundred thousands.*
4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.	Round whole numbers to the nearest ten and hundred.* Round whole numbers to the nearest ten, hundred, and thousand.*
4.NBT.4 Fluently . . . subtract multi-digit whole numbers using the standard algorithm.	Subtract multi-digit numbers.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 4 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
4.NBT.4 Fluently add . . . multi-digit whole numbers using the standard algorithm.	Add multi-digit numbers.
4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.	Add three-digit numbers with regrouping.* Subtract three-digit numbers with regrouping.*
4.NBT.5 . . . multiply two two-digit numbers . . .	Multiply two-digit numbers by two-digit numbers.
4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Multiply two-digit numbers by one-digit numbers.* Multiply three-digit numbers by one-digit numbers.*
4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Identify the remainder in a problem involving division of a two-digit number by a one-digit number.* Divide up to three-digit numbers by one-digit numbers.*
4.NF.1 Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	Use models to find equivalent fractions. Write equivalent fractions, including fractions in simplest form.
4.NF.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators . . .	Compare two fractions with unlike denominators.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 4 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
4.NF.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	Use symbols to compare fractions represented by pictures or models.* Compare and order fractions using fraction bars.*
4.NF.3.a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	Add and subtract fractions with like denominators. Add and subtract fractions and mixed numbers with unlike denominators.
4.NF.3.b Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. . .	Decompose a fraction into a sum of fractions with like denominators.
4.NF.3.c Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.	Add and subtract fractions with like denominators.*
4.NF.3.d Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.	Add and subtract fractions with like denominators.*
4.NF.4.b Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number.	Multiply a whole number by a fraction.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 4 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
4.NF.4.c Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.	Multiply a whole number by a fraction.*
4.NF.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.	Write equivalent fractions, including fractions in simplest form.* Add and subtract fractions and mixed numbers with unlike denominators.*
4.NF.6 Use decimal notation for fractions with denominators 10 or 100.	Express fractions with denominators of 10 or 100 as decimals.
4.NF.7 Compare two decimals to hundredths by reasoning about their size . . .	Compare decimals in the context of money.
4.NF.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.	Compare and order decimals through hundredths.*
4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.	Convert and compare customary units of length (inches, feet, yards, miles).* Convert and compare metric units of length (millimeters, centimeters, meters, kilometers).* Convert customary units of weight and metric units of mass.* Convert customary and metric units of capacity.*

**This skill is related to the aligned standard*

Grade 4 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	Convert and compare customary units of weight and metric units of mass involving whole-number measures.* Convert and compare customary and metric units of capacity involving whole-number measures.* Solve multi-step, real-world problems involving conversion among measurement units within a system.*
4.MD.2 Use the four operations to solve word problems . . . including . . . problems that require expressing measurements given in a larger unit in terms of a smaller unit . . .	Solve multi-step, real-world problems involving conversion among measurement units within a system.
4.MD.2 Use the four operations to solve word problems involving . . . liquid volumes . . . [or] masses of objects . . .	Use the four operations and drawings to solve one-step word problems involving masses or volumes expressed in like units.
4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	Select and use appropriate operations to solve problems involving whole-number money amounts.* Solve problems with dollar bills and coins and use dollar and cent symbols.* Solve real-world problems involving elapsed time.*
4.MD.3 Apply the area . . . formulas for rectangles in real world and mathematical problems.	Use formulas to find the area of rectangles and squares.
4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	Use side lengths to solve problems involving perimeter.*

**This skill is related to the aligned standard*

Grade 4 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots.	Construct and interpret a line plot using data in fractional units. Construct and interpret line plots.*
4.MD.5.a An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.	Measure angles using a virtual protractor.
4.MD.5.b An angle that turns through n one-degree angles is said to have an angle measure of n degrees.	Measure angles using a virtual protractor.
4.MD.6 Measure angles in whole-number degrees using a protractor . . .	Measure angles using a virtual protractor.
4.MD.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	Use addition and subtraction to find unknown angle measures shown in a diagram.
4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	Identify points, lines, line segments, rays, and planes in two-dimensional figures.* Identify acute, obtuse, right, and straight angles and perpendicular and parallel lines.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 4 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size . . .	Classify two-dimensional figures based on their parallel and perpendicular lines or angle measures.
4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	Identify squares, rectangles, parallelograms, rhombuses, and trapezoids, and recognize them as examples of quadrilaterals.* Sort and classify triangles according to their side lengths and angle measures.*
4.G.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	Identify one or more lines of symmetry in two-dimensional figures and predict and identify reflections of two-dimensional figures.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 5

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	Write and evaluate expressions with grouping symbols.
5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	Write and interpret numerical expressions that represent calculations. Write and evaluate numerical expressions with whole-number exponents.*
5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.	Show the relationship between an independent and dependent variable with graphs, tables, and equations.*
5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	Demonstrate an understanding of place value in base-ten by showing how the places increase by powers of 10 from right to left.
5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	Multiply and divide multi-digit decimals by positive powers of 10 and demonstrate an understanding of the patterns involved in multiplying and dividing by powers of 10.*
5.NBT.3.a Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.	Read and write decimals to thousandths in standard form, word form, and expanded form.
5.NBT.3.b Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	Compare two decimals through thousandths.

**This skill is related to the aligned standard*

Grade 5 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	Compare decimals in the context of money.*
5.NBT.4 Use place value understanding to round decimals to any place.	Round decimals to any place.
5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	Multiply two-digit numbers by one-digit numbers.* Multiply three-digit numbers by one-digit numbers.* Multiply two-digit numbers by two-digit numbers.*
5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division . . .	Divide multi-digit whole numbers.
5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Divide four-digit numbers by two-digit numbers using models. Divide up to three-digit numbers by one-digit numbers.*
5.NBT.7 . . . Multiply. . . decimals to hundredths . . .	Multiply decimal numbers through hundredths.
5.NBT.7 Add . . . [and] subtract . . . decimals to hundredths . . .	Add and subtract decimals through hundredths.
5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on	Solve one- and two-step real-world problems involving addition, subtraction, and multiplication of decimals.*

**This skill is related to the aligned standard*

Grade 5 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	Multiply a decimal number by a whole number.* Divide a decimal number by a one-digit whole number.* Divide multi-digit decimals.*
5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.	Add and subtract fractions and mixed numbers with unlike denominators.
5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.	Add and subtract fractions with like denominators.* Add and subtract fractions and mixed numbers with unlike denominators.*
5.NF.3 Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b) . . .	Understand a fraction as the division of the numerator by the denominator.
5.NF.4.a Interpret the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b.	Multiply a whole number by a fraction.*
5.NF.4.b Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths	Multiply fractions.*

**This skill is related to the aligned standard*

Grade 5 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
to find areas of rectangles, and represent fraction products as rectangular areas.	
5.NF.5.a Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.	Multiply a whole number by a fraction.* Multiply fractions.*
5.NF.5.b Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence a/b = (n×a)/(n×b) to the effect of multiplying a/b by 1.	Multiply a whole number by a fraction.* Multiply fractions.*
5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	Multiply a whole number by a fraction.* Multiply fractions.*
5.NF.7.a Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.	Divide a unit fraction by a whole number or a whole number by a unit fraction. Divide fractions.*
5.NF.7.b Interpret division of a whole number by a unit fraction, and compute such quotients.	Divide a unit fraction by a whole number or a whole number by a unit fraction. Divide fractions.*
5.NF.7.c Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.	Divide fractions.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 5 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	Solve multi-step, real-world problems involving conversion among measurement units within a system. Convert and compare metric units of length (millimeters, centimeters, meters, kilometers).* Convert customary units of weight and metric units of mass.* Convert customary and metric units of capacity.* Convert and compare customary units of weight and metric units of mass involving whole-number measures.* Convert and compare customary and metric units of capacity involving whole-number measures.*
5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.	Construct and interpret a line plot using data in fractional units. Construct and interpret line plots.*
5.MD.3.a A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.	Use unit cubes to find the volume of right rectangular prisms with fractional edge lengths.* Use unit cubes to find the volume of right rectangular prisms.*
5.MD.3.b A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.	Use unit cubes to find the volume of right rectangular prisms with fractional edge lengths.*

**This skill is related to the aligned standard*

Grade 5 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	Use unit cubes to find the volume of right rectangular prisms.*
5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	Use unit cubes to find the volume of right rectangular prisms with fractional edge lengths.* Use unit cubes to find the volume of right rectangular prisms.*
5.MD.5.a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes . . .	Use unit cubes to find the volume of right rectangular prisms.
5.MD.5.a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.	Use formulas to find the volume of cubes and rectangular prisms.*
5.MD.5.b Apply the formulas V = l × w × h and V = b × h for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.	Use a formula to find the volume of right rectangular prisms with fractional edge lengths. Use formulas to find the volume of cubes and rectangular prisms.
5.MD.5.c Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	Use formulas to find the volume of cubes and rectangular prisms.*
5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate	Locate and plot ordered pairs on a coordinate grid and find the distance

**This skill is related to the aligned standard*

Grade 5 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	between two points with the same *x*- or *y*-coordinate.* Locate and plot points in all four quadrants of the coordinate plane and use the points to find horizontal and vertical distances.*
5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	Locate and plot ordered pairs on a coordinate grid and find the distance between two points with the same *x*- or *y*-coordinate.* Locate and plot points in all four quadrants of the coordinate plane and use the points to find horizontal and vertical distances.*
5.G.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.	Use properties to classify two-dimensional figures into categories.*
5.G.4 Classify two-dimensional figures in a hierarchy based on properties.	Use properties to classify two-dimensional figures into categories.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 6

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.	Write a ratio to describe the relationship between two quantities using the forms *a:b* and *a/b*.
6.RP.2 Understand the concept of a unit rate a/b associated with a ratio a:b with b is not equal to 0, and use rate language in the context of a ratio relationship.	Solve problems involving unit rate.
6.RP.3.a Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.	Find equivalent ratios.*
6.RP.3.b Solve unit rate problems including those involving unit pricing and constant speed.	Solve problems involving unit rate.
6.RP.3.c . . . Solve problems involving finding the whole, given a part and the percent.	Solve problems involving finding the whole, given a part and the percent.
6.RP.3.c Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity) . . .	Solve problems involving percent of a number.
6.RP.3.d Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	Convert and compare customary units of weight and metric units of mass involving whole-number measures.* Convert and compare customary and metric units of capacity involving whole-number measures.* Solve multi-step, real-world problems involving conversion among measurement units within a system.*
6.NS.1 . . . Compute quotients of fractions . . .	Divide fractions.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 6 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.	Divide a unit fraction by a whole number or a whole number by a unit fraction.*
6.NS.2 Fluently divide multi-digit numbers using the standard algorithm.	Divide multi-digit whole numbers. Divide four-digit numbers by two-digit numbers using models.*
6.NS.3 Fluently . . . divide multi-digit decimals using the standard algorithm . . .	Divide multi-digit decimals.
6.NS.3 Fluently . . . multiply . . . multi-digit decimals using the standard algorithm . . .	Multiply multi-digit decimals.
6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	Add and subtract decimals through hundredths.* Multiply decimal numbers through hundredths.*
6.NS.4 . . . Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor.	Use the distributive property to write a sum of two numbers as a product of the greatest common factor of the two numbers and a sum of two different numbers.
6.NS.4 Find . . . the least common multiple of two whole numbers less than or equal to 12 . . .	Find the least common multiple of two whole numbers through 12.
6.NS.4 Find the greatest common factor of two whole numbers less than or equal to 100 . . .	Find the greatest common factor of two whole numbers through 100.
6.NS.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative	Represent and compare positive and negative rational numbers as points on the number line.*

**This skill is related to the aligned standard*

Grade 6 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	
6.NS.6.a Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., -(-3) = 3, and that 0 is its own opposite.	Represent and compare positive and negative rational numbers as points on the number line.*
6.NS.6.b Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.	Locate and plot points on a coordinate plane in all four quadrants.
6.NS.6.c . . Find and position pairs of integers and other rational numbers on a coordinate plane.	Locate and plot points on a coordinate plane in all four quadrants.
6.NS.6.c Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.	Represent and compare positive and negative rational numbers as points on the number line.* Locate and plot points in all four quadrants of the coordinate plane and use the points to find horizontal and vertical distances.*
6.NS.7.a Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.	Represent and compare positive and negative rational numbers as points on the number line.*
6.NS.7.b Write, interpret, and explain statements of order for rational numbers in real-world contexts.	Represent and compare positive and negative rational numbers as points on the number line.*
6.NS.7.c Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value	Understand absolute value and interpret it in the context of a real-world situation.

**This skill is related to the aligned standard*

Grade 6 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
as magnitude for a positive or negative quantity in a real-world situation.	
6.NS.7.d Distinguish comparisons of absolute value from statements about order.	Understand absolute value and interpret it in the context of a real-world situation.*
6.NS.8 Solve . . . mathematical problems by graphing points in all four quadrants of the coordinate plane. . .	Locate and plot points on a coordinate plane in all four quadrants.
AZ.6.NS.9 Convert between expressions for positive rational numbers, including . . . decimals and percents.	Express decimals as percents and percents as decimals.
AZ.6.NS.9 Convert between expressions for positive rational numbers, including fractions . . . and percents.	Express fractions as percents and percents as fractions.
6.EE.1 Write and evaluate numerical expressions involving whole-number exponents.	Write and evaluate numerical expressions with whole-number exponents.
6.EE.2.a Write expressions that record operations with numbers and with letters standing for numbers.	Write a variable expression to represent a real-world or mathematical problem. Read, write, and identify variable expressions using mathematical terms (sum, term, product, factor, quotient, coefficient).*
6.EE.2.b Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.	Read, write, and identify variable expressions using mathematical terms (sum, term, product, factor, quotient, coefficient).*
6.EE.2.c . . .Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).	Use Order of Operations rules, including applications with formulas.
6.EE.2.c Evaluate expressions at specific values of their variables . . .	Evaluate expressions for given values of the variables.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 6 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
6.EE.3 Apply the properties of operations to generate equivalent expressions.	Use properties of operations to write and identify equivalent expressions. Use properties to write equivalent linear expressions.
6.EE.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).	Use properties of operations to write and identify equivalent expressions.
6.EE.5 . . . Use substitution to determine whether a given number in a specified set makes an . . . inequality true.	Use substitution to determine whether a solution to an inequality is true.
6.EE.5 . . . Use substitution to determine whether a given number in a specified set makes an equation . . . true.	Use substitution to determine whether a solution to an equation is true.
6.EE.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$, where p, q, and x are all nonnegative rational numbers.* Solve and graph the solutions of equations of the form $px + q = r$ or $p(x + q) = r$ where p, q, and r are rational numbers.*
6.EE.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	Write a variable expression to represent a real-world or mathematical problem. Read, write, and identify variable expressions using mathematical terms (sum, term, product, factor, quotient, coefficient).*
6.EE.7 Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers.	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$, where p, q, and x are all nonnegative rational numbers.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 6 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
6.EE.8 . . . Represent solutions of such inequalities on number line diagrams.	Represent inequalities in the form $x > c$ or $x < c$ on number lines.
6.EE.8 Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. . .	Write an inequality of the form $x > c$ or $x < c$ to represent a real-world or mathematical problem.
6.EE.9 . . . Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.	Show the relationship between an independent and dependent variable with graphs, tables, and equations.
6.EE.9 . . . Write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable . . .	Write an equation in two variables for a real-world problem in which a dependent and independent variable change in relationship to one another.
6.G.1 Find the area of . . . polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	Solve problems involving composing and decomposing polygons into rectangles and triangles to find area.
6.G.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	Use formulas to solve problems involving finding the area of two-dimensional figures composed of triangles, quadrilaterals, and polygons.*
6.G.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths . . .	Use unit cubes to find the volume of right rectangular prisms with fractional edge lengths.
6.G.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by	Use a formula to find the volume of right rectangular prisms with fractional edge lengths.*

**This skill is related to the aligned standard*

Grade 6 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	Use unit cubes to find the volume of right rectangular prisms.*
6.G.3 . . . Use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.	Find the length of a side of a polygon using two points with the same first coordinate or the same second coordinate.
6.G.3 Draw polygons in the coordinate plane given coordinates for the vertices . . . Apply these techniques in the context of solving real-world and mathematical problems.	Use given coordinates as vertices to draw polygons in the coordinate plane.
6.G.4 . . . Use . . . nets to find the surface area of . . . figures . . .	Find the surface area of three-dimensional figures using nets.
6.G.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	Identify two-dimensional nets that form three-dimensional figures.* Given a net formed by rectangles and triangles, identify the three-dimensional figure that can be formed.* Apply knowledge of nets of three-dimensional figures to solve real-world and mathematical problems involving spatial representation and surface area.*
6.SP.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.	Find, use, and interpret mean, median, mode, range, and maximum and minimum. Use mean, median, mode, range, and maximum and minimum to describe and compare data sets.

**This skill is related to the aligned standard*

Grade 6 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
6.SP.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	Find, use, and interpret mean, median, mode, range, and maximum and minimum. Use mean, median, mode, range, and maximum and minimum to describe and compare data sets.
6.SP.4 Display numerical data in plots on a number line, including . . . box plots.	Display numerical data in box plots.
6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	Display numerical data in dot plots, draw inferences, and describe patterns in the data.* Display numerical data in histograms and draw inferences from the data.*
6.SP.5.c Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.	Find, use, and interpret mean, median, mode, range, and maximum and minimum.* Use mean, median, mode, range, and maximum and minimum to describe and compare data sets.* Find, use, and interpret mean, median, mode, range, and maximum and minimum using data in box plots.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 7

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
7.RP.1 Compute unit rates associated with ratios of fractions . . .	Compute unit rates associated with ratios of fractions.
7.RP.2.a Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	Identify a proportional relationship and its constant of proportionality.
7.RP.2.b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	Identify a proportional relationship and its constant of proportionality.
7.RP.2.c Represent proportional relationships by equations.	Use an equation to represent a proportional relationship and interpret the meaning of a point on the graph of the equation. Compare two different proportional relationships expressed in different forms, such as tables, graphs, or equations.*
7.RP.2.d Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.	Use an equation to represent a proportional relationship and interpret the meaning of a point on the graph of the equation. Interpret the slope of a graph of a proportional relationship as the unit rate.*
7.RP.3 Use proportional relationships to solve multistep ratio and percent problems.	Use proportions to solve real-world and mathematical problems. Solve multi-step ratio and percent problems.
7.NS.1.b Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of	Add positive and negative rational numbers.*

**This skill is related to the aligned standard*

Grade 7 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
rational numbers by describing real-world contexts.	
7.NS.1.c Understand subtraction of rational numbers as adding the additive inverse, p - q = p + (-q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.	Subtract positive and negative rational numbers.*
7.NS.1.d Apply properties of operations as strategies to add and subtract rational numbers.	Add positive and negative rational numbers. Subtract positive and negative rational numbers.
7.NS.2.a Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.	Multiply positive and negative rational numbers.*
7.NS.2.b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then -(p/q) = (-p)/q = p/(-q). Interpret quotients of rational numbers by describing real-world contexts.	Divide positive and negative rational numbers.*
7.NS.2.c Apply properties of operations as strategies to multiply and divide rational numbers.	Multiply positive and negative rational numbers. Divide positive and negative rational numbers.
7.NS.2.d Convert a rational number to a decimal using long division; know that	Use division to convert a rational number to a decimal and understand that the decimal

**This skill is related to the aligned standard*

Grade 7 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
the decimal form of a rational number terminates in 0s or eventually repeats.	form of a rational number either repeats or terminates in 0.
7.NS.3 Solve . . . mathematical problems involving the four operations with rational numbers.	Solve mathematical problems involving the four operations with both positive and negative rational numbers, including complex fractions.
7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.	Divide multi-digit decimals.* Divide fractions.* Add positive and negative rational numbers.* Subtract positive and negative rational numbers.* Multiply positive and negative rational numbers.* Divide positive and negative rational numbers.* Perform multi-step computations using all operations with both positive and negative rational numbers.*
7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	Use properties to write equivalent linear expressions. Use properties of operations to write and identify equivalent expressions.* Write equivalent expressions in different forms to show relationships.*
7.EE.2 Understand that rewriting an expression in different forms in a problem	Write equivalent expressions in different forms to show relationships.

**This skill is related to the aligned standard*

Grade 7 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
context can shed light on the problem and how the quantities in it are related.	Use properties of operations to write and identify equivalent expressions.* Use properties to write equivalent linear expressions.*
7.EE.3 Solve multi-step . . . mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals) . . .	Perform multi-step computations using all operations with both positive and negative rational numbers.
7.EE.3 Solve multi-step real-life . . . problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals) . . .	Solve multi-step problems involving all forms of rational numbers.
7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.	Express fractions as percents and percents as fractions.* Express decimals as percents and percents as decimals.*
7.EE.4.a Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$, where p, q, and x are all nonnegative rational numbers.* Solve and graph the solutions of equations of the form $px + q = r$ or $p(x + q) = r$ where p, q, and r are rational numbers.* Use variables to write equations for real-world problems and solve by reasoning about the quantities.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 7 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
7.EE.4.b Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality . . .	Solve and graph the solutions of inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are rational numbers.
7.EE.4.b Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	Use variables to write inequalities for real-world and mathematical problems and solve by reasoning about the quantities.*
7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	Use scale drawings to solve problems, including finding actual lengths and areas and creating different scales.
7.G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	Given the measures of three sides or three angles, determine what type of triangle, if any, can be formed.*
7.G.4 Know the formulas for the area and circumference of a circle and use them to solve problems . . .	Use formulas to find the area and circumference of circles.
7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	Use understanding of supplementary, complementary, vertical, and adjacent angles to find the measures of unknown angles in a figure.
7.G.6 Solve real-world and mathematical problems involving . . . surface area of . . . three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	Use formulas to find the surface area of three-dimensional figures composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

**This skill is related to the aligned standard*

Grade 7 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
7.G.6 Solve real-world and mathematical problems involving . . . volume . . . of . . . three-dimensional objects composed of . . . cubes . . . and right prisms.	Use formulas to find the volume of three-dimensional objects composed of cubes and right prisms.
7.G.6 Solve real-world and mathematical problems involving area . . . of two- . . . dimensional objects composed of triangles, quadrilaterals, [and] polygons . . .	Use formulas to solve problems involving finding the area of two-dimensional figures composed of triangles, quadrilaterals, and polygons.
7.SP.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	Understand that random sampling tends to produce representative samples and identify samples that are representative of a population.
7.SP.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest . . .	Make inferences about a population given information drawn from a random sample of that population.
7.SP.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.	Compare inferences made from numerical data for two populations using measures of center and variability.
7.SP.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.	Compare inferences made from numerical data for two populations using measures of center and variability.
7.SP.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates	Express the likelihood of the occurrence of an event as a number between 0 and 1.

**This skill is related to the aligned standard*

Grade 7 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	
7.SP.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.	Use frequency data of an event to approximate the probability of that event.*
7.SP.7.a Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.	Develop and use a probability model with equal outcomes to determine probabilities of events.
7.SP.7.b Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.	Develop a probability model (which may not be uniform) from observed frequencies and use it to determine probabilities of events.
7.SP.8.a Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
7.SP.8.b Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.*
7.SP.8.c . . . Use a simulation to generate frequencies for compound events.	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 8

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
8.NS.1 Know that numbers that are not rational are called irrational . . .	Understand and identify irrational numbers.
8.NS.2 Use rational approximations of irrational numbers to compare the size of irrational numbers . . .	Use rational numbers to approximate and compare irrational numbers.
8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions.	Use properties of integer exponents to simplify and evaluate expressions.
8.EE.2 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that the square root of 2 is irrational.	Solve equations with squares and cubes ($x2 = p$ and $x3 = p$) and find square and cube roots of perfect squares and cubes.
8.EE.3 Use numbers expressed in the form of a single digit times an integer power of 10 . . . to express how many times as much one is than the other.	Compare numbers expressed as a single digit times an integer power of 10.
8.EE.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	Compare numbers expressed as a single digit times an integer power of 10.*
8.EE.5 . . . Compare two different proportional relationships represented in different ways.	Compare two different proportional relationships expressed in different forms, such as tables, graphs, or equations.
8.EE.5 . . . Interpret . . . the unit rate as the slope of the graph. . .	Interpret the slope of a graph of a proportional relationship as the unit rate.

**This skill is related to the aligned standard*

Grade 8 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
8.EE.6 Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.	Explain why the slope of a non-vertical line in the coordinate plane is the same between any two points on the line and use this understanding to derive the slope-intercept form of an equation y = mx + b. Find the slope and *y*-intercept of a line and relate these to an equation in the form *y* = *mx* + *b*.*
8.EE.7.a Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).	Solve linear equations in one variable with one solution, infinitely many solutions, or no solutions.
8.EE.7.b Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	Solve linear equations with positive and negative rational coefficients by expanding expressions and collecting like terms.
8.EE.8.a Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.	Estimate solutions to systems of linear equations by graphing the equations.* Solve systems of equations algebraically.* Solve real-world problems using systems of equations.*
8.EE.8.b Solve systems of two linear equations in two variables algebraically . . .	Solve systems of equations algebraically.
8.EE.8.b Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.	Solve real-world problems using systems of equations.*

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 8 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
8.EE.8.c Solve . . . mathematical problems leading to two linear equations in two variables.	Solve systems of equations algebraically.
8.EE.8.c Solve real-world . . . problems leading to two linear equations in two variables.	Solve real-world problems using systems of equations.
8.F.1 Understand that a function is a rule that assigns to each input exactly one output. . .	Understand and identify functions as one-to-one and many-to-one relationships.
8.F.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	Compare properties of two functions with different representations (in equations, graphs, tables, words).
8.F.3 Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.	Use and understand the equation $y = mx + b$; identify a function as linear or not linear.
8.F.4 . . . Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. . .	Find the rate of change and initial value of a function from a description or from a set of x and y values shown in a table or graph.
8.F.4 . . . Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Interpret the rate of change and initial value of a linear function modeled in a graph or a table of values.
8.F.4 Construct a function to model a linear relationship between two quantities. . .	Model a linear relationship with a function.
8.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	Describe a function shown in a graph; sketch a graph for a description of a function.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 8 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
8.G.1.a Verify experimentally the properties of rotations, reflections, and translations: Lines are taken to lines, and line segments to line segments of the same length.	Describe the results of rotations, reflections, and translations as they relate to line segments and angles of two-dimensional figures.
8.G.1.b Verify experimentally the properties of rotations, reflections, and translations: Angles are taken to angles of the same measure.	Describe the results of rotations, reflections, and translations as they relate to line segments and angles of two-dimensional figures.
8.G.1.c Verify experimentally the properties of rotations, reflections, and translations: Parallel lines are taken to parallel lines.	Describe the results of rotations, reflections, and translations as they relate to line segments and angles of two-dimensional figures.
8.G.2 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	Describe a sequence of rotations, reflections, and translations that are used to create a pair of congruent figures.
8.G.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	Describe the results of rotations, reflections, and translations as they relate to line segments and angles of two-dimensional figures.
8.G.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	Describe a sequence of rotations, reflections, translations, and dilations that are used to create a pair of similar figures.
8.G.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.	Find unknown measures of interior and exterior angles of triangles, and use this information to identify similar triangles.*

**This skill is related to the aligned standard*

Grade 8 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
8.G.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two . . . dimensions.	Use the Pythagorean theorem to solve problems involving right triangles.
8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	Apply the Pythagorean theorem to calculate the distance between two points on a coordinate grid.
8.G.9 Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	Use formulas to find the volume of cones, cylinders, and spheres.
8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	Construct and describe patterns in scatter plots, such as clustering, outliers, positive or negative association, and linear or non-linear association.
8.SP.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	Identify a line of fit to model and analyze a relationship between two quantitative variables.
8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.	Solve problems by interpreting the slope and intercept in equations of linear models for data with two quantitative variables.
8.SP.4 . . . Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects . . .	Construct and interpret a two-way table showing data collected about the same subject for two different categories.

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 9

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.N-Q.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.	Solve multi-step real-world and mathematical problems by utilizing units • Understand problems and guide the solution of multi-step problems by utilizing units. • Choose units in formulas and scales in graphs and data displays. • Interpret units in formulas and scales and origin in graphs and data displays.
HS.N-Q.2 Define appropriate quantities for the purpose of descriptive modeling.	Determine and apply appropriate quantities to solve problems. • Determine the quantities to be used to model real world situations and use them to solve problems. • Determine the appropriate level of accuracy in reporting quantities.
HS.N-Q.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	Determine and apply appropriate quantities to solve problems. • Determine the quantities to be used to model real world situations and use them to solve problems. • Determine the appropriate level of accuracy in reporting quantities.
HS.A-CED.1 Create [linear and simple exponential] equations and inequalities in one variable and use them to solve problems.	Represent linear and simple exponential relationships as algebraic equations and inequalities to solve mathematical and real-world problems • Create linear and simple exponential equations and inequalities in one variable and use them to solve problems. • Create linear and simple exponential equations in two or more variables to represent relationships between quantities; graph linear and simple exponential equations on coordinate axes with labels and scales.

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Represent constraints by linear equations or inequalities, and by systems of linear equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.
HS.A-CED.1 Create [simple rational, exponential, and root] equations and inequalities in one variable and use them to solve problems.	Represent all kinds of relationships, including simple root functions, as algebraic equations to solve mathematical and real-world problems. • Create equations and inequalities in one variable that may include simple rational, exponential, and root functions and use them to solve problems • Create equations in two or more variables that model complex situations and graph them on the coordinate plane. • Solve systems of equations and inequalities that model complex situations, and interpret the results. • Solve literal functions that model complex situations for a specific variable, including formulas involving simple roots.
HS.A-REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	Justify algebraic solutions to linear equations using the properties of algebra
HS.A-REI.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	Solve linear and literal equations and inequalities for one variable.
HS.A-REI.5 Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation	Represent linear and simple exponential relationships as algebraic equations and

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
and a multiple of the other produces a system with the same solutions.	inequalities to solve mathematical and real-world problems * • Create linear and simple exponential equations and inequalities in one variable and use them to solve problems. • Create linear and simple exponential equations in two or more variables to represent relationships between quantities; graph linear and simple exponential equations on coordinate axes with labels and scales. • Represent constraints by linear equations or inequalities, and by systems of linear equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.
HS.A-REI.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	Solve systems of linear equations using graphing and linear combination. • Show that linear combination results in one solution, infinitely many solutions or no solution that is shared by both lines. • Solve systems of linear equations algebraically and graphically.
HS.A-REI.10 Understand that the graph of an [linear and simple exponential] equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).	Represent and solve linear and simple exponential equations graphically. • Demonstrate an understanding that the graph of an equation in two variables is the set of all the ordered pairs in the coordinate plane that are solutions to the equation. • Recognize that when the graphs of two functions intersect, the x-value of the point of intersection produces the same y-value in both functions such that f(x)=g(x); estimate these intersections by graphing, creating tables of x- and y- values, or finding successive approximations.

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Graph half-planes to represent linear inequalities in two variables; graph the solution set to a system of linear inequalities in two variables as the intersection of half-planes.
HS.A-REI.10 Understand that the graph of an [polynomial, rational, radical, absolute value and exponential] equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).	Graphically solve problems using polynomial, rational, radical, absolute value, and exponential equations or inequalities.
HS.A-REI.12 Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	Represent and solve linear and simple exponential equations graphically. • Demonstrate an understanding that the graph of an equation in two variables is the set of all the ordered pairs in the coordinate plane that are solutions to the equation. • Recognize that when the graphs of two functions intersect, the x-value of the point of intersection produces the same y-value in both functions such that f(x)=g(x); estimate these intersections by graphing, creating tables of x- and y- values, or finding successive approximations. • Graph half-planes to represent linear inequalities in two variables; graph the solution set to a system of linear inequalities in two variables as the intersection of half-planes.
HS.F-IF.1 Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output	Demonstrate an understanding of functions, apply functional notation, and evaluate functions. • Understand the definition of a function in terms of its domain and range; Understand that f(x) denotes the graph

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
of f corresponding to the input x. The graph of f is the graph of the equation y = f(x).	of the ordered pairs of the output (the y-coordinates) corresponding to the input (the x-coordinates). • Use function notation to interpret linear and exponential functions and parts of these functions in real-world contexts. Evaluate linear and exponential functions given inputs from their domains. • Recognize that geometric and arithmetic sequences are functions that are defined by determining the next number in the sequence (i.e., recursively).
HS.F-IF.2 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	Demonstrate an understanding of functions, apply functional notation, and evaluate functions. • Understand the definition of a function in terms of its domain and range; Understand that f(x) denotes the graph of the ordered pairs of the output (the y-coordinates) corresponding to the input (the x-coordinates). • Use function notation to interpret linear and exponential functions and parts of these functions in real-world contexts. Evaluate linear and exponential functions given inputs from their domains. • Recognize that geometric and arithmetic sequences are functions that are defined by determining the next number in the sequence (i.e., recursively).
HS.F-IF.3 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.	Demonstrate an understanding of functions, apply functional notation, and evaluate functions. • Understand the definition of a function in terms of its domain and range; Understand that f(x) denotes the graph

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	of the ordered pairs of the output (the y-coordinates) corresponding to the input (the x-coordinates). • Use function notation to interpret linear and exponential functions and parts of these functions in real-world contexts. Evaluate linear and exponential functions given inputs from their domains. • Recognize that geometric and arithmetic sequences are functions that are defined by determining the next number in the sequence (i.e., recursively).
HS.F-IF.6 Calculate and interpret the average rate of change of a [linear or exponential] function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	Analyze, compare, and contrast linear and exponential models in real-world and mathematical situations. • Show that linear functions have a constant rate of change regardless of intervals, and that for exponential functions, the rate of change over one interval is a factor or multiple of the rate of change over another interval. • Identify situations in which one quantity changes at a constant rate over one interval, but at a different rate of change over another interval. • Identify situations that have a constant percent growth or decay rate. • Demonstrate using different representations of functions that exponential graphs grow more quickly than linear, quadratic, or polynomial functions. Interpret linear and exponential functions in real-world and mathematical situations. • For a linear or exponential function, interpret key features of graphs and

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	tables in terms of the intercepts and the intervals on which the function is increasing or decreasing. • Sketch graphs of functions given the intercepts, the intervals on which the function is increasing or decreasing, and the end behavior. • Determine an appropriate domain of a function and describe its effect on the graph. • Determine the average rate of change of a linear or exponential function over a specified interval using an equation or table, or estimate the rate of change using a graph.
HS.F-IF.6 Calculate and interpret the average rate of change of a [quadratic or exponential] function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	Interpret quadratic functions in real-world and mathematical situations. • For quadratic functions, interpret models represented as graphs and tables in terms of the intercepts, maxima, minima, and intervals where the function is increasing and decreasing. • Sketch graphs of functions given the intercepts, intervals on which the function is increasing or decreasing, symmetry, end behavior, and a maximum or a minimum of the graph. • Determine an appropriate domain of a function for its graph, using only functions that could be modeled by quadratic functions or exponential functions with rational exponents. • Determine the average rate of change over a specified interval of a quadratic or exponential function with rational exponents using an equation or table. • Estimate the average rate of change over a specified interval of a quadratic

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	or exponential function with rational exponents using a graph.
HS.F-IF.6 Calculate and interpret the average rate of change of a [rational, square root or cube root] function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	Interpret a variety of functions, including rational and root functions, in real-world and mathematical situations. • For rational, square root, and cube root functions, interpret models represented as graphs and tables in terms of intercepts; intervals on which the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; and end behavior. • Sketch graphs of rational, square root, and cube root functions using the intercepts; intervals on which the function is increasing or decreasing; intervals on which the function is positive or negative; symmetry; end behavior; and any maximums or minimums of the graphs. • Determine an appropriate domain of a function and relate it to its graph. Use only functions that could be modeled by rational, square root, and cube root functions. • Determine and interpret the average rate of change of a rational, square root, or cube root function presented in an equation or table over a specified interval. • Estimate the rate of change of of a rational, square root, or cube root function from a graph over a specified interval.
HS.F-BF.1.a Determine an explicit expression, a recursive process, or steps for calculation from a context.	Construct new representations of functions from algebraic, graphic, numerical,

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	or verbal representations of linear and exponential functions. • Determine an algebraic expression or steps for calculation of a linear or exponential function that model real world situations. • Create new functions by using arithmetic operations on functions. • Write algebraic expression or steps for calculation to determine terms in arithmetic and geometric sequences and convert from one representation to the other.
HS.F-BF.2 Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.	Construct new representations of functions from algebraic, graphic, numerical, or verbal representations of linear and exponential functions. • Determine an algebraic expression or steps for calculation of a linear or exponential function that model real world situations. • Create new functions by using arithmetic operations on functions. • Write algebraic expression or steps for calculation to determine terms in arithmetic and geometric sequences and convert from one representation to the other.
HS.F-LE.1.a Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.	Analyze, compare, and contrast linear and exponential models in real-world and mathematical situations. • Show that linear functions have a constant rate of change regardless of intervals, and that for exponential functions, the rate of change over one interval is a factor or multiple of the rate of change over another interval.

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Identify situations in which one quantity changes at a constant rate over one interval, but at a different rate of change over another interval. • Identify situations that have a constant percent growth or decay rate. • Demonstrate using different representations of functions that exponential graphs grow more quickly than linear, quadratic, or polynomial functions.
HS.F-LE.1.b Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.	Analyze, compare, and contrast linear and exponential models in real-world and mathematical situations. • Show that linear functions have a constant rate of change regardless of intervals, and that for exponential functions, the rate of change over one interval is a factor or multiple of the rate of change over another interval. • Identify situations in which one quantity changes at a constant rate over one interval, but at a different rate of change over another interval. • Identify situations that have a constant percent growth or decay rate. • Demonstrate using different representations of functions that exponential graphs grow more quickly than linear, quadratic, or polynomial functions.
HS.F-LE.1.c Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	Analyze, compare, and contrast linear and exponential models in real-world and mathematical situations. • Show that linear functions have a constant rate of change regardless of intervals, and that for exponential functions, the rate of change over one

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	interval is a factor or multiple of the rate of change over another interval. • Identify situations in which one quantity changes at a constant rate over one interval, but at a different rate of change over another interval. • Identify situations that have a constant percent growth or decay rate. • Demonstrate using different representations of functions that exponential graphs grow more quickly than linear, quadratic, or polynomial functions.
HS.F-LE.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	Construct new representations of functions from algebraic, graphic, numerical, or verbal representations of linear and exponential functions. * • Determine an algebraic expression or steps for calculation of a linear or exponential function that model real world situations. • Create new functions by using arithmetic operations on functions. • Write algebraic expression or steps for calculation to determine terms in arithmetic and geometric sequences and convert from one representation to the other.
HS.G-CO.1 Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.	Demonstrate an understanding of geometric terms and how they are used to create precise definitions of Euclidean geometry figures, such as line segment, angle, and circle. • Angle - two rays that share the same endpoint; • Circle - the set of all points equidistant from another point, called the center.

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Perpendicular lines - lines that intersect at a right angle. • Parallel lines - lines that are in the same plane, but never intersect. • Line segment - a portion of a line that has two endpoints. • Line segment Distance - the distance along the line from endpoint to endpoint of the segment.
HS.G-CO.2 Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).	Represent, describe, and model transformations in the plane. • Represent and describe transformations in the plane as functions. Contrast transformations that are rigid motions to transformations that contain dilations. • Identify and describe transformations that carry quadrilaterals and regular polygons onto themselves. • Develop definitions of the rigid motion transformations using the geometric terms of parallel lines, perpendicular lines, angles, and circles. • Represent the image of a given rigid motion transformation given the pre-image and the specific rotation, translation, or reflection. Determine what sequence of transformations will carry the pre-image of a figure onto its image. Demonstrate a fundamental understanding of congruence as it relates to transformations of rigid motions, including those involving triangles.* • Describe translations, rotations, and reflections using geometric terms, and predict the impact of these transformations on figures. Use the

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	definition of congruence in terms of rigid motions to decide if two figures are congruent. • Show that two triangles are congruent if and only if the corresponding sides and angles are congruent using the definition of congruence in terms of rigid motions. • Using congruence in terms of rigid motions, show how the congruence criteria for triangles (ASA, SAS, and SSS) follows.
HS.G-CO.3 Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.	Represent, describe, and model transformations in the plane. • Represent and describe transformations in the plane as functions. Contrast transformations that are rigid motions to transformations that contain dilations. • Identify and describe transformations that carry quadrilaterals and regular polygons onto themselves. • Develop definitions of the rigid motion transformations using the geometric terms of parallel lines, perpendicular lines, angles, and circles. • Represent the image of a given rigid motion transformation given the pre-image and the specific rotation, translation, or reflection. Determine what sequence of transformations will carry the pre-image of a figure onto its image. Demonstrate a fundamental understanding of congruence as it relates to transformations of rigid motions, including those involving triangles.* • Describe translations, rotations, and reflections using geometric

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	terms, and predict the impact of these transformations on figures. Use the definition of congruence in terms of rigid motions to decide if two figures are congruent. • Show that two triangles are congruent if and only if the corresponding sides and angles are congruent using the definition of congruence in terms of rigid motions. • Using congruence in terms of rigid motions, show how the congruence criteria for triangles (ASA, SAS, and SSS) follows.
HS.G-CO.4 Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	Represent, describe, and model transformations in the plane. • Represent and describe transformations in the plane as functions. Contrast transformations that are rigid motions to transformations that contain dilations. • Identify and describe transformations that carry quadrilaterals and regular polygons onto themselves. • Develop definitions of the rigid motion transformations using the geometric terms of parallel lines, perpendicular lines, angles, and circles. • Represent the image of a given rigid motion transformation given the pre-image and the specific rotation, translation, or reflection. Determine what sequence of transformations will carry the pre-image of a figure onto its image.
HS.G-CO.5 Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software.	Represent, describe, and model transformations in the plane. • Represent and describe transformations in the plane as functions. Contrast

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Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
Specify a sequence of transformations that will carry a given figure onto another.	transformations that are rigid motions to transformations that contain dilations. • Identify and describe transformations that carry quadrilaterals and regular polygons onto themselves. • Develop definitions of the rigid motion transformations using the geometric terms of parallel lines, perpendicular lines, angles, and circles. • Represent the image of a given rigid motion transformation given the pre-image and the specific rotation, translation, or reflection. Determine what sequence of transformations will carry the pre-image of a figure onto its image.
HS.G-CO.6 Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.	Demonstrate a fundamental understanding of congruence as it relates to transformations of rigid motions, including those involving triangles. • Describe translations, rotations, and reflections using geometric terms, and predict the impact of these transformations on figures. Use the definition of congruence in terms of rigid motions to decide if two figures are congruent. • Show that two triangles are congruent if and only if the corresponding sides and angles are congruent using the definition of congruence in terms of rigid motions. • Using congruence in terms of rigid motions, show how the congruence criteria for triangles (ASA, SAS, and SSS) follows.
HS.G-CO.7 Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if	Demonstrate a fundamental understanding of congruence as it relates to

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	transformations of rigid motions, including those involving triangles. • Describe translations, rotations, and reflections using geometric terms, and predict the impact of these transformations on figures. Use the definition of congruence in terms of rigid motions to decide if two figures are congruent. • Show that two triangles are congruent if and only if the corresponding sides and angles are congruent using the definition of congruence in terms of rigid motions. • Using congruence in terms of rigid motions, show how the congruence criteria for triangles (ASA, SAS, and SSS) follows.
HS.G-CO.8 Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.	Demonstrate a fundamental understanding of congruence as it relates to transformations of rigid motions, including those involving triangles. • Describe translations, rotations, and reflections using geometric terms, and predict the impact of these transformations on figures. Use the definition of congruence in terms of rigid motions to decide if two figures are congruent. • Show that two triangles are congruent if and only if the corresponding sides and angles are congruent using the definition of congruence in terms of rigid motions. • Using congruence in terms of rigid motions, show how the congruence criteria for triangles (ASA, SAS, and SSS) follows.
HS.G-CO.12 Make formal geometric constructions with a variety of tools and	Identify the steps in the process of more advanced geometric constructions.*

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).	• Construction of an equilateral triangle • Construction of a square • Construction of a regular hexagon inscribed in a circle.
HS.G-CO.13 Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.	Identify the steps in the process of more advanced geometric constructions. • Construction of an equilateral triangle • Construction of a square • Construction of a regular hexagon inscribed in a circle.
HS.G-GPE.5 Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).	Use coordinate geometry to prove geometric theorems and to solve real-world and mathematical problems. • Prove simple geometric theorems using the rectangular coordinate system. • Prove that lines with the same slope are either the same line or parallel lines; Prove that lines are perpendicular if and only if the slopes have a product of -1. Find the equation of a line parallel or perpendicular to a given line through a specified point. • Find the perimeters of polygons and areas of triangles and rectangles using the rectangular coordinate system.
HS.G-GPE.6 Find the point on a directed line segment between two given points that partitions the segment in a given ratio.	Use coordinate geometry to prove geometric theorems and to solve real-world and mathematical problems.* • Prove simple geometric theorems using the rectangular coordinate system. • Prove that lines with the same slope are either the same line or parallel lines; Prove that lines are perpendicular if and only if the slopes have a product of -1. Find the equation of a line parallel or perpendicular to a given line through a specified point.

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Find the perimeters of polygons and areas of triangles and rectangles using the rectangular coordinate system.
HS.G-GPE.7 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.	Use coordinate geometry to prove geometric theorems and to solve real-world and mathematical problems.* • Prove simple geometric theorems using the rectangular coordinate system. • Prove that lines with the same slope are either the same line or parallel lines; Prove that lines are perpendicular if and only if the slopes have a product of -1. Find the equation of a line parallel or perpendicular to a given line through a specified point. • Find the perimeters of polygons and areas of triangles and rectangles using the rectangular coordinate system.
HS.S-ID.1 Represent data with plots on the real number line (dot plots, histograms, and box plots).	Model, describe, and interpret representations of data in one variable. • Create box plots and histograms. • Compare the measures of central tendency and the distribution of two or more sets of data. • Explain the statistical differences in the context of the data sets; state why there is a difference in shape, center, or spread.
HS.S-ID.2 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.	Model, describe, and interpret representations of data in one variable.* • Create box plots and histograms. • Compare the measures of central tendency and the distribution of two or more sets of data. • Explain the statistical differences in the context of the data sets; state why

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	there is a difference in shape, center, or spread.
HS.S-ID.3 Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).	Model, describe, and interpret representations of data in one variable. • Create box plots and histograms. • Compare the measures of central tendency and the distribution of two or more sets of data. • Explain the statistical differences in the context of the data sets; state why there is a difference in shape, center, or spread.
HS.S-ID.5 Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.	Analyze, describe and summarize categorical data represented in two-way frequency tables. • Analyze and interpret joint, marginal, and conditional relative frequencies in context. • Determine possible trends or associations in the data.
HS.S-ID.6.a Fit a function to the data; use functions fitted to data to solve problems in the context of the data.	Analyze data on a scatter plot and determine a good model. • Determine if a linear model is a good fit from a scatterplot of the data. • Determine a linear function that best fits data in a scatterplot that suggests a linear model, and use the functions to estimate future trends. • Determine from a plot of the residuals of a scatterplot whether a linear model is a good fit for the data.
HS.S-ID.6.b Informally assess the fit of a function by plotting and analyzing residuals.	Analyze data on a scatter plot and determine a good model. • Determine if a linear model is a good fit from a scatterplot of the data. • Determine a linear function that best fits data in a scatterplot that suggests a linear

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	model, and use the functions to estimate future trends. • Determine from a plot of the residuals of a scatterplot whether a linear model is a good fit for the data.
HS.S-ID.6.c Fit a linear function for a scatter plot that suggests a linear association.	Analyze data on a scatter plot and determine a good model. • Determine if a linear model is a good fit from a scatterplot of the data. • Determine a linear function that best fits data in a scatterplot that suggests a linear model, and use the functions to estimate future trends. • Determine from a plot of the residuals of a scatterplot whether a linear model is a good fit for the data.
HS.S-ID.7 Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.	Analyze and interpret linear models in the context of measurement and data. • Analyze and interpret the slope and intercepts of a linear model. • Use technology to determine the correlation coefficient of a linear fit and use the correlation coefficient to describe how well the model fits the data. • Identify associations of data that are based on correlation versus causation and explain the difference.
HS.S-ID.8 Compute (using technology) and interpret the correlation coefficient of a linear fit.	Analyze and interpret linear models in the context of measurement and data. • Analyze and interpret the slope and intercepts of a linear model. • Use technology to determine the correlation coefficient of a linear fit and use the correlation coefficient to describe how well the model fits the data.

**This skill is related to the aligned standard*

Grade 9 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Identify associations of data that are based on correlation versus causation and explain the difference.
HS.S-ID.9 Distinguish between correlation and causation.	Analyze and interpret linear models in the context of measurement and data. • Analyze and interpret the slope and intercepts of a linear model. • Use technology to determine the correlation coefficient of a linear fit and use the correlation coefficient to describe how well the model fits the data. • Identify associations of data that are based on correlation versus causation and explain the difference.

**This skill is related to the aligned standard*

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.A-CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Represent all kinds of relationships, including simple root functions, as algebraic equations to solve mathematical and real-world problems. • Create equations and inequalities in one variable that may include simple rational, exponential, and root functions and use them to solve problems • Create equations in two or more variables that model complex situations and graph them on the coordinate plane. • Solve systems of equations and inequalities that model complex situations, and interpret the results. • Solve literal functions that model complex situations for a specific variable, including formulas involving simple roots.
HS.A-CED.2 Create [linear and simple exponential] equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Represent linear and simple exponential relationships as algebraic equations and inequalities to solve mathematical and real-world problems • Create linear and simple exponential equations and inequalities in one variable and use them to solve problems. • Create linear and simple exponential equations in two or more variables to represent relationships between quantities; graph linear and simple exponential equations on coordinate axes with labels and scales. • Represent constraints by linear equations or inequalities, and by systems of linear equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.

Grades 9 - 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.A-CED.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.	Solve systems of linear equations using graphing and linear combination. * • Show that linear combination results in one solution, infinitely many solutions or no solution that is shared by both lines. • Solve systems of linear equations algebraically and graphically. Represent all kinds of relationships, including simple root functions, as algebraic equations to solve mathematical and real-world problems. * • Create equations and inequalities in one variable that may include simple rational, exponential, and root functions and use them to solve problems • Create equations in two or more variables that model complex situations and graph them on the coordinate plane. • Solve systems of equations and inequalities that model complex situations, and interpret the results. • Solve literal functions that model complex situations for a specific variable, including formulas involving simple roots.
HS.A-CED.3 Represent constraints by [linear] equations or inequalities, and by systems of [linear] equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.	Represent linear and simple exponential relationships as algebraic equations and inequalities to solve mathematical and real-world problems • Create linear and simple exponential equations and inequalities in one variable and use them to solve problems. • Create linear and simple exponential equations in two or more variables to represent relationships between quantities; graph linear and simple

Grades 9 - 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	exponential equations on coordinate axes with labels and scales. • Represent constraints by linear equations or inequalities, and by systems of linear equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.
HS.A-CED.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.	Solve literal formulas for a specific variable.
HS.A-CED.4 Rearrange formulas [including simple roots] to highlight a quantity of interest, using the same reasoning as in solving equations.	Represent all kinds of relationships, including simple root functions, as algebraic equations to solve mathematical and real-world problems. • Create equations and inequalities in one variable that may include simple rational, exponential, and root functions and use them to solve problems • Create equations in two or more variables that model complex situations and graph them on the coordinate plane. • Solve systems of equations and inequalities that model complex situations, and interpret the results. • Solve literal functions that model complex situations for a specific variable, including formulas involving simple roots.
HS.A-REI.11 Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where f(x) and/or g(x) are	Represent and solve linear and simple exponential equations graphically. • Demonstrate an understanding that the graph of an equation in two variables is the set of all the ordered pairs in the coordinate plane that are solutions to the equation. • Recognize that when the graphs of two functions intersect, the x-value

Grades 9 - 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
linear, polynomial, rational, absolute value, exponential, and logarithmic functions.	of the point of intersection produces the same y-value in both functions such that f(x)=g(x); estimate these intersections by graphing, creating tables of x- and y- values, or finding successive approximations. • Graph half-planes to represent linear inequalities in two variables; graph the solution set to a system of linear inequalities in two variables as the intersection of half-planes. Graphically solve problems using polynomial, rational, radical, absolute value, and exponential equations or inequalities.*
HS.F-IF.4 For a [linear and exponential] function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.	Interpret linear and exponential functions in real-world and mathematical situations. • For a linear or exponential function, interpret key features of graphs and tables in terms of the intercepts and the intervals on which the function is increasing or decreasing. • Sketch graphs of functions given the intercepts, the intervals on which the function is increasing or decreasing, and the end behavior. • Determine an appropriate domain of a function and describe its effect on the graph. • Determine the average rate of change of a linear or exponential function over a specified interval using an equation or table, or estimate the rate of change using a graph.
HS.F-IF.4 For a [quadratic] function that models a relationship between two quantities, interpret key features of graphs	Interpret quadratic functions in real-world and mathematical situations.

**This skill is related to the aligned standard*

Grades 9 - 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.	• For quadratic functions, interpret models represented as graphs and tables in terms of the intercepts, maxima, minima, and intervals where the function is increasing and decreasing. • Sketch graphs of functions given the intercepts, intervals on which the function is increasing or decreasing, symmetry, end behavior, and a maximum or a minimum of the graph. • Determine an appropriate domain of a function for its graph, using only functions that could be modeled by quadratic functions or exponential functions with rational exponents. • Determine the average rate of change over a specified interval of a quadratic or exponential function with rational exponents using an equation or table. • Estimate the average rate of change over a specified interval of a quadratic or exponential function with rational exponents using a graph.
HS.F-IF.4 For a [rational, square root, and cube root] function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.	Interpret a variety of functions, including rational and root functions, in real-world and mathematical situations. • For rational, square root, and cube root functions, interpret models represented as graphs and tables in terms of intercepts; intervals on which the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; and end behavior. • Sketch graphs of rational, square root, and cube root functions using the intercepts; intervals on which the function is increasing or decreasing;

Grades 9 - 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	intervals on which the function is positive or negative; symmetry; end behavior; and any maximums or minimums of the graphs. • Determine an appropriate domain of a function and relate it to its graph. Use only functions that could be modeled by rational, square root, and cube root functions. • Determine and interpret the average rate of change of a rational, square root, or cube root function presented in an equation or table over a specified interval. • Estimate the rate of change of of a rational, square root, or cube root function from a graph over a specified interval.
HS.F-IF.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.	Interpret linear and exponential functions in real-world and mathematical situations. * • For a linear or exponential function, interpret key features of graphs and tables in terms of the intercepts and the intervals on which the function is increasing or decreasing. • Sketch graphs of functions given the intercepts, the intervals on which the function is increasing or decreasing, and the end behavior. • Determine an appropriate domain of a function and describe its effect on the graph. • Determine the average rate of change of a linear or exponential function over a specified interval using an equation or table, or estimate the rate of change using a graph.

**This skill is related to the aligned standard*

Grades 9 - 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.F-IF.5 Relate the domain of a [linear or exponential] function to its graph and, where applicable, to the quantitative relationship it describes.	Demonstrate an understanding of functions, apply functional notation, and evaluate functions. • Understand the definition of a function in terms of its domain and range; Understand that f(x) denotes the graph of the ordered pairs of the output (the y-coordinates) corresponding to the input (the x-coordinates). • Use function notation to interpret linear and exponential functions and parts of these functions in real-world contexts. Evaluate linear and exponential functions given inputs from their domains. • Recognize that geometric and arithmetic sequences are functions that are defined by determining the next number in the sequence (i.e., recursively).
HS.F-IF.5 Relate the domain of a [quadratic] function to its graph and, where applicable, to the quantitative relationship it describes.	Interpret quadratic functions in real-world and mathematical situations. • For quadratic functions, interpret models represented as graphs and tables in terms of the intercepts, maxima, minima, and intervals where the function is increasing and decreasing. • Sketch graphs of functions given the intercepts, intervals on which the function is increasing or decreasing, symmetry, end behavior, and a maximum or a minimum of the graph. • Determine an appropriate domain of a function for its graph, using only functions that could be modeled by quadratic functions or exponential functions with rational exponents. • Determine the average rate of change over a specified interval of a quadratic

Grades 9 - 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	or exponential function with rational exponents using an equation or table. • Estimate the average rate of change over a specified interval of a quadratic or exponential function with rational exponents using a graph.
HS.F-IF.5 Relate the domain of a [rational, square root and cube root] function to its graph and, where applicable, to the quantitative relationship it describes.	Interpret a variety of functions, including rational and root functions, in real-world and mathematical situations. • For rational, square root, and cube root functions, interpret models represented as graphs and tables in terms of intercepts; intervals on which the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; and end behavior. • Sketch graphs of rational, square root, and cube root functions using the intercepts; intervals on which the function is increasing or decreasing; intervals on which the function is positive or negative; symmetry; end behavior; and any maximums or minimums of the graphs. • Determine an appropriate domain of a function and relate it to its graph. Use only functions that could be modeled by rational, square root, and cube root functions. • Determine and interpret the average rate of change of a rational, square root, or cube root function presented in an equation or table over a specified interval. • Estimate the rate of change of of a rational, square root, or cube root

Grades 9 - 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	function from a graph over a specified interval.
HS.F-IF.9 Compare properties of two [linear or exponential] functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	Analyze, compare, and contrast representations of linear and exponential functions • Graph linear functions and specify intercepts. • Graph exponential functions, specify intercepts and explain end behavior. • Compare and contrast two linear and/ or simple exponential functions each represented in a different way. Compare and analyze the growth of exponential functions using tables or graphs to other functions. • Compare to linear functions • Compare to other exponential functions • Compare to quadratic functions • Compare to simple polynomial functions of degree 3 or higher
HS.F-IF.9 Compare properties of two [rational or radical] functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	Analyze representations of rational and radical functions. • Translate between algebraic representations of functions to highlight the properties of the functions • Compare and contrast two functions that are represented in different ways
HS.F-BF.1.b Combine standard function types using arithmetic operations.	Construct new representations of functions from algebraic, graphic, numerical, or verbal representations of linear and exponential functions. • Determine an algebraic expression or steps for calculation of a linear or exponential function that model real world situations.

Grades 9 - 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Create new functions by using arithmetic operations on functions. • Write algebraic expression or steps for calculation to determine terms in arithmetic and geometric sequences and convert from one representation to the other. Construct new representations of a variety of functions from algebraic, graphical, numerical, or verbal representations. • Create new functions using arithmetic operations by combining standard functions, such as polynomial functions, rational functions, logarithmic functions, absolute value functions, piece-wise defined functions, step functions, etc. • Demonstrate an understanding of composition of functions; state the domain and range for newly composed functions and represent functions that are compositions of functions algebraically.
HS.F-BF.3 Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology.	Analyze transformations of exponential, simple radical, and rational functions • Determine the impact on a graph by replacing F(x) by F(x+k), F(x)+k,k(f(x)) or F(x) by F(kx), and determine what values of k will result in a new graph • Use technology to represent and explain the impact of these changes on the graphs • Determine whether a function is even or odd based on its algebraic or graphical representation Analyze translations of linear functions and exponential functions. *

**This skill is related to the aligned standard*

Grades 9 - 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Determine the impact on the graph of F(x) when F(x) is replaced by F(kx), kF(x), F(x+k) or F(x)+k, and determine what values of k will result in a new graph. • Use technology to represent and explain the impact of these changes on the graphs. • Determine whether a function is even or odd based on its algebraic or graphical representation.
HS.F-BF.4.a Solve an equation of the form f(x) = c for a simple [exponential, radical, rational or logarithmic] function f that has an inverse and write an expression for the inverse.	Determine whether an exponential, simple radical, rational, or logarithmic function has an inverse and if so, write an expression for the inverse.
HS.F-BF.4.a Solve an equation of the form f(x) = c for a simple [linear, quadratic or absolute value] function f that has an inverse and write an expression for the inverse.	Determine whether a linear, quadratic, or absolute value function has an inverse and write the inverse function.
HS.F-LE.3 Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.	Analyze, compare, and contrast linear and exponential models in real-world and mathematical situations. • Show that linear functions have a constant rate of change regardless of intervals, and that for exponential functions, the rate of change over one interval is a factor or multiple of the rate of change over another interval. • Identify situations in which one quantity changes at a constant rate over one interval, but at a different rate of change over another interval. • Identify situations that have a constant percent growth or decay rate.

**This skill is related to the aligned standard*

Grades 9 - 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Demonstrate using different representations of functions that exponential graphs grow more quickly than linear, quadratic, or polynomial functions. Compare and analyze the growth of exponential functions using tables or graphs to other functions. * • Compare to linear functions • Compare to other exponential functions • Compare to quadratic functions • Compare to simple polynomial functions of degree 3 or higher

**This skill is related to the aligned standard*

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 10

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.N-RN.1 Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.	Demonstrate an understanding of rational exponents and use them in representations of radicals; convert between algebraic representations that use radicals or rational exponents.
HS.N-RN.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents.	Demonstrate an understanding of rational exponents and use them in representations of radicals; convert between algebraic representations that use radicals or rational exponents. Simplify expressions involving radicals and rational exponents using the properties of exponents.
HS.N-RN.3 Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.	Understand and prove theorems about rational and irrational numbers and their operations. Demonstrate understanding and prove: • That the sum or difference of rational numbers is rational given that integers are closed on multiplication, addition, and subtraction. • That if two numbers sum to a rational number, and one of the two numbers is rational, then the other number must be rational given that non-zero integers are closed on multiplication and division. • That the product of rational numbers is rational given that integers are closed on multiplication. • That if the product of two non-zero numbers is rational, and one of the two numbers is rational, then the other number must be rational given that non-zero integers are closed on multiplication and division.

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.N-CN.1 Know there is a complex number i such that $i^2 = -1$, and every complex number has the form a + bi with a and b real.	Demonstrate a deep understanding of complex numbers by using them in polynomial theorems and identities. • Use complex numbers in rewriting algebraic expressions. • Determine the number of roots for a polynomial of any degree. • Prove that all quadratic polynomials have two roots.
HS.N-CN.2 Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.	Find and use conjugates of complex numbers * • Find the conjugate of a complex number • Find the moduli of complex numbers • Find quotients of complex numbers
HS.N-CN.7 Solve quadratic equations with real coefficients that have complex solutions.	Demonstrate a deep understanding of complex numbers by using them in polynomial theorems and identities. * • Use complex numbers in rewriting algebraic expressions. • Determine the number of roots for a polynomial of any degree. • Prove that all quadratic polynomials have two roots. Use inspection and completing the square to solve quadratic equations.*
HS.A-SSE.1.a Interpret parts of a [linear and simple exponential] expression, such as terms, factors and coefficients.	Interpret algebraic expressions including linear and simple exponential expressions • Interpret parts of a linear and simple exponential expression, such as terms, factors, and coefficients. • Interpret complicated linear and simple exponential expressions by viewing one or more of their parts as a single entity.

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.A-SSE.1.a Interpret parts of an expression, such as terms, factors, and coefficients.	Interpret algebraic expressions, including quadratic and exponential expressions with rational exponents. • Interpret parts of quadratic and exponential functions, such as terms, factors, and coefficients. • Interpret complicated quadratic and exponential expressions by viewing one or more of their parts as a single entity. • Simplify and rewrite algebraic expressions by interpreting their structure.
HS.A-SSE.1.b Interpret complicated [linear and simple exponential] expressions by viewing one or more of their parts as a single entity.	Interpret algebraic expressions including linear and simple exponential expressions • Interpret parts of a linear and simple exponential expression, such as terms, factors, and coefficients. • Interpret complicated linear and simple exponential expressions by viewing one or more of their parts as a single entity.
HS.A-SSE.1.b Interpret complicated [quadratic and exponential] expressions by viewing one or more of their parts as a single entity.	Interpret algebraic expressions, including quadratic and exponential expressions with rational exponents. • Interpret parts of quadratic and exponential functions, such as terms, factors, and coefficients. • Interpret complicated quadratic and exponential expressions by viewing one or more of their parts as a single entity. • Simplify and rewrite algebraic expressions by interpreting their structure.
HS.A-SSE.2 Use the structure of an [quadratic and exponential] expression to identify ways to rewrite it.	Interpret algebraic expressions, including quadratic and exponential expressions with rational exponents.

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Interpret parts of quadratic and exponential functions, such as terms, factors, and coefficients. • Interpret complicated quadratic and exponential expressions by viewing one or more of their parts as a single entity. • Simplify and rewrite algebraic expressions by interpreting their structure.
HS.A-SSE.3.a Factor a quadratic expression to reveal the zeros of the function it defines.	Analyze, perform operations, and solve quadratic expressions and equations. • Factor quadratic expressions • Determine the maximum or minimum of a quadratic function by completing the square.
HS.A-SSE.3.b Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.	Analyze, perform operations, and solve quadratic expressions and equations. • Factor quadratic expressions • Determine the maximum or minimum of a quadratic function by completing the square. Use inspection and completing the square to solve quadratic equations.*
HS.A-SSE.3.c Use the properties of exponents to transform expressions for exponential functions.	Analyze translations of linear functions and exponential functions. * • Determine the impact on the graph of F(x) when F(x) is replaced by F(kx), kF(x), F(x+k) or F(x)+k, and determine what values of k will result in a new graph. • Use technology to represent and explain the impact of these changes on the graphs. • Determine whether a function is even or odd based on its algebraic or graphical representation.

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.A-REI.4.a Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.	Use inspection and completing the square to solve quadratic equations.*
HS.A-REI.4.b Solve quadratic equations by inspection (e.g., for $x^2 = 49$), . . . completing the square . . .	Use inspection and completing the square to solve quadratic equations.
HS.A-REI.7 Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically.	Represent all kinds of relationships, including simple root functions, as algebraic equations to solve mathematical and real-world problems. * • Create equations and inequalities in one variable that may include simple rational, exponential, and root functions and use them to solve problems • Create equations in two or more variables that model complex situations and graph them on the coordinate plane. • Solve systems of equations and inequalities that model complex situations, and interpret the results. • Solve literal functions that model complex situations for a specific variable, including formulas involving simple roots.
HS.F-IF.7.a Graph linear and quadratic functions and show intercepts, maxima, and minima.	Analyze, compare, and contrast representations of linear and exponential functions • Graph linear functions and specify intercepts. • Graph exponential functions, specify intercepts and explain end behavior. • Compare and contrast two linear and/or simple exponential functions each represented in a different way.

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	Interpret quadratic functions in real-world and mathematical situations. * • For quadratic functions, interpret models represented as graphs and tables in terms of the intercepts, maxima, minima, and intervals where the function is increasing and decreasing. • Sketch graphs of functions given the intercepts, intervals on which the function is increasing or decreasing, symmetry, end behavior, and a maximum or a minimum of the graph. • Determine an appropriate domain of a function for its graph, using only functions that could be modeled by quadratic functions or exponential functions with rational exponents. • Determine the average rate of change over a specified interval of a quadratic or exponential function with rational exponents using an equation or table. • Estimate the average rate of change over a specified interval of a quadratic or exponential function with rational exponents using a graph.
HS.F-IF.8.a Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.	Analyze, perform operations, and solve quadratic expressions and equations. • Factor quadratic expressions • Determine the maximum or minimum of a quadratic function by completing the square. Interpret quadratic functions in real-world and mathematical situations. * • For quadratic functions, interpret models represented as graphs and tables in terms of the intercepts, maxima, minima, and

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	intervals where the function is increasing and decreasing. • Sketch graphs of functions given the intercepts, intervals on which the function is increasing or decreasing, symmetry, end behavior, and a maximum or a minimum of the graph. • Determine an appropriate domain of a function for its graph, using only functions that could be modeled by quadratic functions or exponential functions with rational exponents. • Determine the average rate of change over a specified interval of a quadratic or exponential function with rational exponents using an equation or table. • Estimate the average rate of change over a specified interval of a quadratic or exponential function with rational exponents using a graph.
HS.F-IF.8.b Use the properties of exponents to interpret expressions for exponential functions.	Simplify expressions involving radicals and rational exponents using the properties of exponents.*
HS.G-CO.9 Prove theorems about lines and angles.	Prove simple theorems about lines and angles. • Prove vertical angles are congruent. • Prove that when a transversal crosses parallel lines, alternate interior angles are congruent. • Prove that when a transversal crosses parallel lines, corresponding angles are congruent. • Prove that any point on a perpendicular bisector of a line segment is equidistant from the line segment's endpoints.
HS.G-CO.10 Prove theorems about triangles.	Prove simple theorems about triangles and parallelograms in the Euclidean plane

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Prove the measures of interior angles of a triangle sum to 180°. • Prove the base angles of isosceles triangles are congruent. • Prove the segment joining midpoints of two sides of a triangle is parallel to the third side. • Prove the segment joining midpoints of two sides of a triangle is half the length of the third side. • Prove the medians of a triangle meet at a point. • Prove opposite sides of a parallelogram are congruent. • Prove opposite angles of a parallelogram are congruent. • Prove the diagonals of a parallelogram bisect each other. • Prove that parallelograms with congruent diagonals are rectangles
HS.G-CO.11 Prove theorems about parallelograms.	Prove simple theorems about triangles and parallelograms in the Euclidean plane • Prove the measures of interior angles of a triangle sum to 180°. • Prove the base angles of isosceles triangles are congruent. • Prove the segment joining midpoints of two sides of a triangle is parallel to the third side. • Prove the segment joining midpoints of two sides of a triangle is half the length of the third side. • Prove the medians of a triangle meet at a point. • Prove opposite sides of a parallelogram are congruent. • Prove opposite angles of a parallelogram are congruent.

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Prove the diagonals of a parallelogram bisect each other. • Prove that parallelograms with congruent diagonals are rectangles
HS.G-SRT.1.a A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.	Demonstrate an understanding of similarity in terms of transformations. • Show that a dilation takes a line not passing through the center of the dilation to a parallel line. • Show that dilation leaves a line passing through the center of the dilation unchanged. • Show that the dilation of a line segment creates a new line segment in the ratio of the scale factor of the dilation. • Show that transformations will result in similar figures by preserving the measure of corresponding angles and creating corresponding sides with proportional lengths. • Prove the AA criterion for similarity using transformations.
HS.G-SRT.1.b The dilation of a line segment is longer or shorter in the ratio given by the scale factor.	Demonstrate an understanding of similarity in terms of transformations. • Show that a dilation takes a line not passing through the center of the dilation to a parallel line. • Show that dilation leaves a line passing through the center of the dilation unchanged. • Show that the dilation of a line segment creates a new line segment in the ratio of the scale factor of the dilation. • Show that transformations will result in similar figures by preserving the measure of corresponding angles and creating corresponding sides with proportional lengths.

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Prove the AA criterion for similarity using transformations.
HS.G-SRT.2 Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	Demonstrate an understanding of similarity in terms of transformations. • Show that a dilation takes a line not passing through the center of the dilation to a parallel line. • Show that dilation leaves a line passing through the center of the dilation unchanged. • Show that the dilation of a line segment creates a new line segment in the ratio of the scale factor of the dilation. • Show that transformations will result in similar figures by preserving the measure of corresponding angles and creating corresponding sides with proportional lengths. • Prove the AA criterion for similarity using transformations.
HS.G-SRT.3 Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.	Demonstrate an understanding of similarity in terms of transformations. • Show that a dilation takes a line not passing through the center of the dilation to a parallel line. • Show that dilation leaves a line passing through the center of the dilation unchanged. • Show that the dilation of a line segment creates a new line segment in the ratio of the scale factor of the dilation. • Show that transformations will result in similar figures by preserving the measure of corresponding angles and creating corresponding sides with proportional lengths. • Prove the AA criterion for similarity using transformations.

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.G-SRT.4 Prove theorems about triangles.	Prove simple theorems about triangles and parallelograms in the Euclidean plane • Prove the measures of interior angles of a triangle sum to 180°. • Prove the base angles of isosceles triangles are congruent. • Prove the segment joining midpoints of two sides of a triangle is parallel to the third side. • Prove the segment joining midpoints of two sides of a triangle is half the length of the third side. • Prove the medians of a triangle meet at a point. • Prove opposite sides of a parallelogram are congruent. • Prove opposite angles of a parallelogram are congruent. • Prove the diagonals of a parallelogram bisect each other. • Prove that parallelograms with congruent diagonals are rectangles Solve problems and prove relationships about triangles using congruence and similarity.* • Solve problems using congruence criteria for triangles. • Solve problems using similarity criteria for triangles. • Prove that a line parallel to one side of a triangle divides the other two proportionally and the converse. • Prove the Pythagorean Theorem using similar triangles.
HS.G-SRT.5 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.	Solve problems and prove relationships about triangles using congruence and similarity.*

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Solve problems using congruence criteria for triangles. • Solve problems using similarity criteria for triangles. • Prove that a line parallel to one side of a triangle divides the other two proportionally and the converse. • Prove the Pythagorean Theorem using similar triangles.
HS.G-SRT.6 Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.	Demonstrate an understanding of trigonometric ratios and use them to solve real-world and mathematical problems. • Understand that sine, cosine, and tangent are ratios of sides in a right triangle and the ratios remain constant for each angle measure. • Demonstrate that sin x = cos (90-x), and use this fact to solve problems in right triangles. • Use first quadrant sine, cosine, and tangent ratios along with the Pythagorean Theorem to solve real world problems.
HS.G-SRT.7 Explain and use the relationship between the sine and cosine of complementary angles.	Demonstrate an understanding of trigonometric ratios and use them to solve real-world and mathematical problems. • Understand that sine, cosine, and tangent are ratios of sides in a right triangle and the ratios remain constant for each angle measure. • Demonstrate that sin x = cos (90-x), and use this fact to solve problems in right triangles. • Use first quadrant sine, cosine, and tangent ratios along with the Pythagorean Theorem to solve real world problems.

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.G-SRT.8 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.	Demonstrate an understanding of trigonometric ratios and use them to solve real-world and mathematical problems. • Understand that sine, cosine, and tangent are ratios of sides in a right triangle and the ratios remain constant for each angle measure. • Demonstrate that sin x = cos (90-x), and use this fact to solve problems in right triangles. • Use first quadrant sine, cosine, and tangent ratios along with the Pythagorean Theorem to solve real world problems.
HS.G-C.1 Prove that all circles are similar.	Demonstrate an understanding of the similarity of circles and describe relationships of segments in circles and use them to solve problems. • Use transformations to prove that any two circles are similar. • Identify and describe relationships among angles, chords, and tangents; including central, inscribed, and circumscribed angles. • Recognize that an inscribed angle on a diameter is right. • Recognize that the radius of a circle is perpendicular to a tangent of the circle where the radius intersects the circle. • Recognize and prove that the opposite angles of a quadrilateral inscribed in a circle are supplementary. • Construct an inscribed or circumscribed circle of a triangle, using a virtual compass and straight edge.

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.G-C.2 Identify and describe relationships among inscribed angles, radii, and chords.	Demonstrate an understanding of the similarity of circles and describe relationships of segments in circles and use them to solve problems. • Use transformations to prove that any two circles are similar. • Identify and describe relationships among angles, chords, and tangents; including central, inscribed, and circumscribed angles. • Recognize that an inscribed angle on a diameter is right. • Recognize that the radius of a circle is perpendicular to a tangent of the circle where the radius intersects the circle. • Recognize and prove that the opposite angles of a quadrilateral inscribed in a circle are supplementary. • Construct an inscribed or circumscribed circle of a triangle, using a virtual compass and straight edge.
HS.G-C.3 Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.	Demonstrate an understanding of the similarity of circles and describe relationships of segments in circles and use them to solve problems. • Use transformations to prove that any two circles are similar. • Identify and describe relationships among angles, chords, and tangents; including central, inscribed, and circumscribed angles. • Recognize that an inscribed angle on a diameter is right. • Recognize that the radius of a circle is perpendicular to a tangent of the circle where the radius intersects the circle.

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Recognize and prove that the opposite angles of a quadrilateral inscribed in a circle are supplementary. • Construct an inscribed or circumscribed circle of a triangle, using a virtual compass and straight edge.
HS.G-C.4 Construct a tangent line from a point outside a given circle to the circle.	Demonstrate an understanding of the similarity of circles and describe relationships of segments in circles and use them to solve problems.* • Use transformations to prove that any two circles are similar. • Identify and describe relationships among angles, chords, and tangents; including central, inscribed, and circumscribed angles. • Recognize that an inscribed angle on a diameter is right. • Recognize that the radius of a circle is perpendicular to a tangent of the circle where the radius intersects the circle. • Recognize and prove that the opposite angles of a quadrilateral inscribed in a circle are supplementary. • Construct an inscribed or circumscribed circle of a triangle, using a virtual compass and straight edge.
HS.G-C.5 Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.	Demonstrate an understanding of the properties of a sector of a circle and apply them to solve problems. • Convert between radian measure and angle measure. • Recognize and show that #r is the length of the arc intercepted by an angle. • Recognize and show that (#r^2)/2 is the formula for the area of a sector of a circle.

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.G-GPE.1 Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.	Derive equations of simple conic sections: parabolas and circles. • Use the Pythagorean theorem to derive the equation of a circle. • Find the center and radius of a circle given by completing the square. • Given the focus and directrix, derive the equation of a parabola.
HS.G-GPE.2 Derive the equation of a parabola given a focus and directrix.	Derive equations of simple conic sections: parabolas and circles. • Use the Pythagorean theorem to derive the equation of a circle. • Find the center and radius of a circle given by completing the square. • Given the focus and directrix, derive the equation of a parabola.
HS.G-GPE.4 Use coordinates to prove simple geometric theorems algebraically.	Use coordinate geometry to prove simple theorems, including simple theorems about circles algebraically.
HS.G-GMD.1 Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone.	Demonstrate an understanding of volume formulas and use them to solve problems involving* • Cylinders • Cones • Spheres • Pyramids
HS.G-GMD.3 Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.	Demonstrate an understanding of volume formulas and use them to solve problems involving* • Cylinders • Cones • Spheres • Pyramids
HS.S-CP.1 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the	Demonstrate an understanding of sample spaces and independent events.

**This skill is related to the aligned standard*

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").	• Use set notation and set vocabulary, such as union, intersection, and complement to describe sample spaces. • Identify independent events A and B as events such that the probability of A and B occurring is determined by multiplying the Probability of A by the Probability of B.
HS.S-CP.2 Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.	Demonstrate an understanding of sample spaces and independent events. • Use set notation and set vocabulary, such as union, intersection, and complement to describe sample spaces. • Identify independent events A and B as events such that the probability of A and B occurring is determined by multiplying the Probability of A by the Probability of B.
HS.S-CP.3 Understand the conditional probability of A given B as P(A and B)/ P(B), and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.	Demonstrate an understanding of conditional probability and use conditional probability in real-world situations. • Determine the conditional probability of A given B when A and B are dependent events. Identify that A and B are independent events if P(B) is not conditional upon the occurrence of A. • Represent bivariate data in two-way frequency tables and interpret the relative frequencies to determine conditional probabilities and whether events are independent or not. • Relate real world situations to conceptual understandings of conditional probability and independence.
HS.S-CP.4 Construct and interpret two-way frequency tables of data when two categories are associated with each object	Demonstrate an understanding of conditional probability and use conditional probability in real-world situations.

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities.	• Determine the conditional probability of A given B when A and B are dependent events. Identify that A and B are independent events if P(B) is not conditional upon the occurrence of A. • Represent bivariate data in two-way frequency tables and interpret the relative frequencies to determine conditional probabilities and whether events are independent or not. • Relate real world situations to conceptual understandings of conditional probability and independence.
HS.S-CP.5 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations.	Demonstrate an understanding of conditional probability and use conditional probability in real-world situations. • Determine the conditional probability of A given B when A and B are dependent events. Identify that A and B are independent events if P(B) is not conditional upon the occurrence of A. • Represent bivariate data in two-way frequency tables and interpret the relative frequencies to determine conditional probabilities and whether events are independent or not. • Relate real world situations to conceptual understandings of conditional probability and independence.
HS.S-CP.6 Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.	Use introductory probability techniques and counting rules to evaluate outcomes and determine probabilities. • Use the formula P(B|A) = P(AnB)/P(A) to determine the conditional probability of A given B and interpret the answers in real world situations.

Grade 10 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Use the Addition Rule for dependent and independent events, and interpret the answers in real world situations.
HS.S-CP.7 Apply the Addition Rule, P(A or B) = P(A) + P(B) - P(A and B), and interpret the answer in terms of the model.	Use introductory probability techniques and counting rules to evaluate outcomes and determine probabilities. • Use the formula P(B|A) = P(AnB)/P(A) to determine the conditional probability of A given B and interpret the answers in real world situations. • Use the Addition Rule for dependent and independent events, and interpret the answers in real world situations.
HS.S-MD.6 Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).	Use probability techniques to evaluate outcomes of decisions for real-world situations. • Distinguish between probability events that are fair and unfair and random or not. • Analyze real-world decisions and strategies using probability concepts.

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 11

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.N-CN.8 Extend polynomial identities to the complex numbers.	Demonstrate a deep understanding of complex numbers by using them in polynomial theorems and identities. * • Use complex numbers in rewriting algebraic expressions. • Determine the number of roots for a polynomial of any degree. • Prove that all quadratic polynomials have two roots.
HS.N-CN.9 Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.	Demonstrate a deep understanding of complex numbers by using them in polynomial theorems and identities. • Use complex numbers in rewriting algebraic expressions. • Determine the number of roots for a polynomial of any degree. • Prove that all quadratic polynomials have two roots.
HS.A-SSE.4 Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems.	Derive formulas and use them to solve problems. Derive the formula Sn=a(1+r^n)/(1+r) for the sum of a finite geometric series (when the common ratio is not 1), and use this formula to solve problems.
HS.A-APR.1 . . . add, subtract, and multiply polynomials [of degree 3 or greater].	Add, subtract, and multiply polynomials of degree 3 or greater
HS.A-APR.1 . . . add, subtract, and multiply polynomials.	Add, subtract, and multiply polynomials.
HS.A-APR.2 Know and apply the Remainder Theorem: For a polynomial p(x) and a number a, the remainder on division by x - a is p(a), so p(a) = 0 if and only if (x - a) is a factor of p(x).	Determine the zeros of polynomials and use them in graphing • Demonstrate an understanding of the Remainder and Factor theorems and use them in polynomial division problems • Find the zeros of polynomials of degree three or greater by factoring • Sketch graphs of polynomial functions using zeros

**This skill is related to the aligned standard*

Grade 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.A-APR.3 Identify zeros of polynomials [of degree three or higher] when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.	Determine the zeros of polynomials and use them in graphing • Demonstrate an understanding of the Remainder and Factor theorems and use them in polynomial division problems • Find the zeros of polynomials of degree three or greater by factoring • Sketch graphs of polynomial functions using zeros
HS.A-APR.4 Prove polynomial identities and use them to describe numerical relationships.	Apply Polynomial Identities in proofs and applications. • Use algebraic properties to demonstrate the validity of polynomial identities and apply them to mathematical and real world situations. • Demonstrate an understanding of the Binomial theorem and apply it in mathematical and real world situations.
HS.A-APR.5 Know and apply the Binomial Theorem for the expansion of (x + y) to the n power in powers of x and y for a positive integer n, where x and y are any numbers, with coefficients determined for example by Pascal's Triangle.	Apply Polynomial Identities in proofs and applications. • Use algebraic properties to demonstrate the validity of polynomial identities and apply them to mathematical and real world situations. • Demonstrate an understanding of the Binomial theorem and apply it in mathematical and real world situations.
HS.A-APR.6 Rewrite simple rational expressions in different forms; write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using inspection, long division, or, for the more complicated examples, a computer algebra system.	Rewrite rational expressions with linear and quadratic denominators. • Determine the quotient of simple rational expressions that have linear or quadratic denominators. For example, write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using factoring, synthetic division, or long division

**This skill is related to the aligned standard*

Grade 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Add, subtract, multiply, and divide rational expressions with linear or quadratic denominators
HS.A-APR.7 Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions [with linear and quadratic denominators].	Rewrite rational expressions with linear and quadratic denominators. • Determine the quotient of simple rational expressions that have linear or quadratic denominators. For example, write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using factoring, synthetic division, or long division • Add, subtract, multiply, and divide rational expressions with linear or quadratic denominators
HS.A-REI.2 Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	Solve simple radical and rational equations, including those with extraneous solutions and justify reasoning. Graphically solve problems using polynomial, rational, radical, absolute value, and exponential equations or inequalities.*
HS.F-IF.7.b Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	Graph square root, cube root, piece-wise-defined, step-, absolute-value, logarithmic, trigonometric, and rational functions. • Graph a variety of functions including square root, cube root, piece-wise-defined, step, and absolute value functions. • Graph polynomial functions of degree 3 or greater; identify the intercepts and describe end-behavior. • Graph logarithmic functions; identify intercepts and end-behavior.

**This skill is related to the aligned standard*

Grade 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Graph trigonometric functions; identify periodicity, amplitude, phase shift, and intercepts. • Graph rational functions; identify points of discontinuity, asymptotes and end-behavior. Interpret a variety of functions, including rational and root functions, in real-world and mathematical situations. * • For rational, square root, and cube root functions, interpret models represented as graphs and tables in terms of intercepts; intervals on which the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; and end behavior. • Sketch graphs of rational, square root, and cube root functions using the intercepts; intervals on which the function is increasing or decreasing; intervals on which the function is positive or negative; symmetry; end behavior; and any maximums or minimums of the graphs. • Determine an appropriate domain of a function and relate it to its graph. Use only functions that could be modeled by rational, square root, and cube root functions. • Determine and interpret the average rate of change of a rational, square root, or cube root function presented in an equation or table over a specified interval. • Estimate the rate of change of of a rational, square root, or cube root

**This skill is related to the aligned standard*

Grade 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	function from a graph over a specified interval.
HS.F-IF.7.c Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.	Graphically solve problems using polynomial, rational, radical, absolute value, and exponential equations or inequalities. Graph square root, cube root, piece-wise-defined, step-, absolute-value, logarithmic, trigonometric, and rational functions. • Graph a variety of functions including square root, cube root, piece-wise-defined, step, and absolute value functions. • Graph polynomial functions of degree 3 or greater; identify the intercepts and describe end-behavior. • Graph logarithmic functions; identify intercepts and end-behavior. • Graph trigonometric functions; identify periodicity, amplitude, phase shift, and intercepts. • Graph rational functions; identify points of discontinuity, asymptotes and end-behavior.
HS.F-IF.7.e Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	Analyze, compare, and contrast representations of linear and exponential functions • Graph linear functions and specify intercepts. • Graph exponential functions, specify intercepts and explain end behavior. • Compare and contrast two linear and/or simple exponential functions each represented in a different way.

Grade 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	Graph square root, cube root, piece-wise-defined, step-, absolute-value, logarithmic, trigonometric, and rational functions. • Graph a variety of functions including square root, cube root, piece-wise-defined, step, and absolute value functions. • Graph polynomial functions of degree 3 or greater; identify the intercepts and describe end-behavior. • Graph logarithmic functions; identify intercepts and end-behavior. • Graph trigonometric functions; identify periodicity, amplitude, phase shift, and intercepts. • Graph rational functions; identify points of discontinuity, asymptotes and end-behavior. Graphically solve problems using polynomial, rational, radical, absolute value, and exponential equations or inequalities.*
HS.F-LE.4 For exponential models, express as a logarithm the solution to ab to the ct power = d where a, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology.	Demonstrate an understanding of the connection between exponential and logarithmic relationships. • Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents. • Translate between logarithmic equations of base 2, 10 or e, and their exponential forms.
HS.F-TF.1 Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.	Demonstrate an understanding of the unit circle and how it relates to trigonometric functions

**This skill is related to the aligned standard*

Grade 11 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Demonstrate a conceptual understanding of radian measure as arc length • Demonstrate a conceptual understanding between angle measures represented in degrees or radians in all four quadrants of the unit circle
HS.F-TF.2 Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.	Demonstrate an understanding of the unit circle and how it relates to trigonometric functions • Demonstrate a conceptual understanding of radian measure as arc length • Demonstrate a conceptual understanding between angle measures represented in degrees or radians in all four quadrants of the unit circle
HS.F-TF.5 Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.	Use trigonometric functions to model periodic situations given the amplitude, frequency and midline
HS.S-MD.7 Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).	Use probability techniques to evaluate outcomes of decisions for real-world situations. • Distinguish between probability events that are fair and unfair and random or not. • Analyze real-world decisions and strategies using probability concepts.

Correlation of Arizona's College and Career Ready Standards for Mathematics to Skills (continued)

Grade 12

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.N-CN.3 Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.	Find and use conjugates of complex numbers • Find the conjugate of a complex number • Find the moduli of complex numbers • Find quotients of complex numbers
HS.N-CN.5 Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation.	Find and use conjugates of complex numbers * • Find the conjugate of a complex number • Find the moduli of complex numbers • Find quotients of complex numbers
HS.N-VM.1 Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., v, |v|, || v||, v).	Demonstrate an understanding of vectors and apply them to solve problems. • Demonstrate an understanding that vectors are made up of magnitude and direction, represent vectors in the coordinate plane, and use vector notation • Determine the components of a vector • Solve real world problems involving vectors
HS.N-VM.2 Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point.	Demonstrate an understanding of vectors and apply them to solve problems. • Demonstrate an understanding that vectors are made up of magnitude and direction, represent vectors in the coordinate plane, and use vector notation • Determine the components of a vector • Solve real world problems involving vectors
HS.N-VM.3 Solve problems involving velocity and other quantities that can be represented by vectors.	Demonstrate an understanding of vectors and apply them to solve problems. • Demonstrate an understanding that vectors are made up of magnitude and direction, represent vectors in the coordinate plane, and use vector notation • Determine the components of a vector • Solve real world problems involving vectors

**This skill is related to the aligned standard*

Grade 12 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
HS.N-VM.4.a Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes.	Use algebraic and geometric representations of vectors to add and subtract vectors • Add vectors and demonstrate an understanding that when vectors are added, the magnitude of the resulting vector is not necessarily the sum of the magnitudes of the two original vectors • Determine the magnitude and direction of the sum of two vectors • Demonstrate an understanding of vector subtraction where **-w** is the additive inverse of **w**, and represent vector subtraction in the plane
HS.N-VM.4.b Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum.	Use algebraic and geometric representations of vectors to add and subtract vectors • Add vectors and demonstrate an understanding that when vectors are added, the magnitude of the resulting vector is not necessarily the sum of the magnitudes of the two original vectors • Determine the magnitude and direction of the sum of two vectors • Demonstrate an understanding of vector subtraction where **-w** is the additive inverse of **w**, and represent vector subtraction in the plane
HS.N-VM.4.c Understand vector subtraction v - w as v + (-w), where -w is the additive inverse of w, with the same magnitude as w and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise.	Use algebraic and geometric representations of vectors to add and subtract vectors • Add vectors and demonstrate an understanding that when vectors are added, the magnitude of the resulting vector is not necessarily the sum of the magnitudes of the two original vectors • Determine the magnitude and direction of the sum of two vectors • Demonstrate an understanding of vector subtraction where **-w** is the additive

Grade 12 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	inverse of **w**, and represent vector subtraction in the plane
HS.N-VM.5.a Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as c(v subscript x, v subscript y) = (cv subscript x, cv subscript y).	Demonstrate an understanding of scalar multiplication of vectors by representing the product graphically and by computing magnitude and direction of vectors multiplied by scalars. • Represent scalar multiplication of vectors in the plane. Perform scalar multiplication on vectors • Determine the magnitude of a vector that is a result of scalar multiplication. • Determine the direction of a vector that is a result of scalar multiplication
HS.N-VM.5.b Compute the magnitude of a scalar multiple cv using ‖cv‖ = |c|v. Compute the direction of cv knowing that when |c|v is not equal to 0, the direction of cv is either along v (for c > 0) or against v (for c < 0).	Demonstrate an understanding of scalar multiplication of vectors by representing the product graphically and by computing magnitude and direction of vectors multiplied by scalars. • Represent scalar multiplication of vectors in the plane. Perform scalar multiplication on vectors • Determine the magnitude of a vector that is a result of scalar multiplication. • Determine the direction of a vector that is a result of scalar multiplication
HS.F-IF.7.d Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.	Graphically solve problems using polynomial, rational, radical, absolute value, and exponential equations or inequalities. Graph square root, cube root, piece-wise-defined, step-, absolute-value, logarithmic, trigonometric, and rational functions. • Graph a variety of functions including square root, cube root, piece-wise-

Grade 12 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	defined, step, and absolute value functions. • Graph polynomial functions of degree 3 or greater; identify the intercepts and describe end-behavior. • Graph logarithmic functions; identify intercepts and end-behavior. • Graph trigonometric functions; identify periodicity, amplitude, phase shift, and intercepts. • Graph rational functions; identify points of discontinuity, asymptotes and end-behavior. Interpret a variety of functions, including rational and root functions, in real-world and mathematical situations. * • For rational, square root, and cube root functions, interpret models represented as graphs and tables in terms of intercepts; intervals on which the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; and end behavior. • Sketch graphs of rational, square root, and cube root functions using the intercepts; intervals on which the function is increasing or decreasing; intervals on which the function is positive or negative; symmetry; end behavior; and any maximums or minimums of the graphs. • Determine an appropriate domain of a function and relate it to its graph. Use only functions that could be modeled by rational, square root, and cube root functions.

**This skill is related to the aligned standard*

Grade 12 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Determine and interpret the average rate of change of a rational, square root, or cube root function presented in an equation or table over a specified interval. • Estimate the rate of change of of a rational, square root, or cube root function from a graph over a specified interval.
HS.F-BF.1.c Compose functions.	Construct new representations of a variety of functions from algebraic, graphical, numerical, or verbal representations. • Create new functions using arithmetic operations by combining standard functions, such as polynomial functions, rational functions, logarithmic functions, absolute value functions, piece-wise defined functions, step functions, etc. • Demonstrate an understanding of composition of functions; state the domain and range for newly composed functions and represent functions that are compositions of functions algebraically.
HS.F-BF.4.b Verify by composition that one function is the inverse of another.	Construct new representations of a variety of functions from algebraic, graphical, numerical, or verbal representations. * • Create new functions using arithmetic operations by combining standard functions, such as polynomial functions, rational functions, logarithmic functions, absolute value functions, piece-wise defined functions, step functions, etc. • Demonstrate an understanding of composition of functions; state the domain and range for newly composed functions and represent functions

**This skill is related to the aligned standard*

Grade 12 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	that are compositions of functions algebraically.
HS.F-BF.5 Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.	Demonstrate an understanding of the connection between exponential and logarithmic relationships. • Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents. • Translate between logarithmic equations of base 2, 10 or e, and their exponential forms.
HS.F-TF.3 Use special triangles to determine geometrically the values of sine, cosine, tangent for pi/3, pi/4 and pi/6, and use the unit circle to express the values of sine, cosine, and tangent for pi-x, pi+x, and 2pi-x in terms of their values for x, where x is any real number.	Use the unit circle to determine the lengths of the sides of special right triangles and to explain periodicity. • Use the unit circles and special right triangles to compute the values of the trigonometric ratios for angles with reference angles equal to 30, 45, 60, and 90 degrees • Explain periodicity using the unit circle • Explain even and odd symmetry using the unit circle
HS.F-TF.4 Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.	Use the unit circle to determine the lengths of the sides of special right triangles and to explain periodicity. • Use the unit circles and special right triangles to compute the values of the trigonometric ratios for angles with reference angles equal to 30, 45, 60, and 90 degrees • Explain periodicity using the unit circle • Explain even and odd symmetry using the unit circle
HS.F-TF.6 Understand that restricting a trigonometric function to a domain on which it is always increasing or	Use trigonometric functions to model periodic situations given the amplitude, frequency and midline*

**This skill is related to the aligned standard*

Grade 12 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
always decreasing allows its inverse to be constructed.	
HS.F-TF.7 Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.	Use trigonometric functions to model periodic situations given the amplitude, frequency and midline*
HS.G-GMD.2 Give an informal argument using Cavalieri's principle for the formulas for the volume of a sphere and other solid figures.	Demonstrate an understanding of volume formulas and use them to solve problems involving* • Cylinders • Cones • Spheres • Pyramids
HS.S-MD.1 Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.	Determine and analyze expected values to solve problems. • Determine values for the events in a sample space associated with a random variable; graph the resulting probability distribution. • Determine and interpret the expected value of a random variable. • Use theoretical probabilities to develop a probability distribution and find the expected value. • Use experimental probabilities to develop a probability distribution and find the expected value.
HS.S-MD.2 Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.	Determine and analyze expected values to solve problems. • Determine values for the events in a sample space associated with a random variable; graph the resulting probability distribution. • Determine and interpret the expected value of a random variable.

**This skill is related to the aligned standard*

Grade 12 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Use theoretical probabilities to develop a probability distribution and find the expected value. • Use experimental probabilities to develop a probability distribution and find the expected value. Calculate expected values and use them to evaluate real-world decisions. • Find the expected profit or loss given a probability distribution in a context of a game of chance. • Make, evaluate, and compare high-level strategic and financial decisions based on expected values.
HS.S-MD.3 Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value.	Determine and analyze expected values to solve problems. • Determine values for the events in a sample space associated with a random variable; graph the resulting probability distribution. • Determine and interpret the expected value of a random variable. • Use theoretical probabilities to develop a probability distribution and find the expected value. • Use experimental probabilities to develop a probability distribution and find the expected value.
HS.S-MD.4 Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value.	Determine and analyze expected values to solve problems. • Determine values for the events in a sample space associated with a random variable; graph the resulting probability distribution. • Determine and interpret the expected value of a random variable.

**This skill is related to the aligned standard*

Grade 12 (continued)

Arizona's College and Career Ready Standards for Mathematics	Aligned Skills
	• Use theoretical probabilities to develop a probability distribution and find the expected value. • Use experimental probabilities to develop a probability distribution and find the expected value.
HS.S-MD.5.a Find the expected payoff for a game of chance.	Calculate expected values and use them to evaluate real-world decisions. • Find the expected profit or loss given a probability distribution in a context of a game of chance. • Make, evaluate, and compare high-level strategic and financial decisions based on expected values.
HS.S-MD.5.b Evaluate and compare strategies on the basis of expected values.	Calculate expected values and use them to evaluate real-world decisions. • Find the expected profit or loss given a probability distribution in a context of a game of chance. • Make, evaluate, and compare high-level strategic and financial decisions based on expected values.