ACADEMIC STANDARDS
SUPPORTING STANDARDS. SUPPORTING SUCCESS

SCIENCE |STEM

WHAT'S NEW IN JUNE 2021

Summer PD Opportunities with the Arizona Science Teachers Association (ASTA) & ADE

This summer ADE is teaming up with the Arizona Science Teachers Association (ASTA) to provide many PD opportunities. PD topics include 3-Dimensional Instruction, Peformance Tasks, Science and Engineering Practices, and Crosccutting Concepts. Please register here: https://azsta.org/workshops/

Recorded Webinars!

ADE is pleased to announce that we have many newly recorded webinars available for use on our main Science Standards website located *here*. Scroll down and click on the drop-down menu titled "Recorded Webinars." The webinars are now "packaged" on the website and include the video of the webinar, a PDF of the presentation, and a resource page with links to all resources used during the live webinar! Are you new to 3-dimensional instruction and don't know what webinar to start with? Or are you ready for instructional practices to support 3-dimensional teaching and learning? ADE has a Webinar Pathways for 3-Dimensional Science Instruction.

Here are the new recorded webinar packages (click links):

- ***Updated 2/21* A Look At Arizona's New Science Standards Video | Pdf | Resource Page**
- **5-E Instructional Model And Science Notebooks Video | Pdf | Resource Page**
- ***Updated 3/31* Phenomenon-Based 3-Dimensional Instruction Video | Pdf | Resource Page**
- **Science And Engineering Practices: 1 Of The 3 Dimensions Of The Az Science Standards Video | Pdf | Resource Page**

- **Crosscutting Concepts: 1 Of The 3 Dimensions Of The Az Science Standards Video** | **Pdf** | **Resource Page**

- **Constructing Explanations And Arguing From Evidence Using Claims, Evidence, Reasoning (Cer) Video** | **Pdf** | **Resource Page**

- **Core Ideas: 1 Of The 3 Dimensions Of The Az Science Standards Video** | **Pdf** | **Resource Page**

- **What Secondary Science Educators Need To Know About Performance Tasks Video** | **Pdf** | **Resource Page**

- **What Elementary Science Educators Need To Know About Performance Tasks Video** | **Pdf** | **Resource Page**

- **Sep Asking Questions: Students Drive Instruction With Driving Question Boards! Video** | **Pdf** | **Resource Page**

- **Transforming Science Learning: Engaging Students In The Science & Engineering Practices Using Digital Tools Video** | **Pdf** | **Resource Page**

- **Seps, Cccs, And Core Ideas: Putting The 3-Dimensions Together Video** | **Pdf** | **Resource Page**

Gather, Reason, Communicate (GRC) Lessons

Are you looking for an instructional approach, and resources, that align to 3-Dimensional Instruction? Brett Moulding's [#Going3Dw/GRC website](#) has a collection of vetted, three-dimensional lessons aligned to the Next Generation Science Standards and state standards developed from the Framework for K-12 Science Education. The lessons were developed by teachers across districts and states utilizing local phenomena. The teachers who developed these lessons participate in professional development with Brett D. Moulding and Kenneth L. Huff over the past five years. Brett was on the committee that wrote the Framework for K-12 Science Education and a lead writer of the NGSS. Kenneth was also on the NGSS writing team and has spent the last 5 years applying these lessons in his classroom. Good news! Arizona educators have written a few Arizona-specific lessons that align to the 2018 AZ Science Standards!

Disciplinary Literacy & the 2018 AZ Science Standards
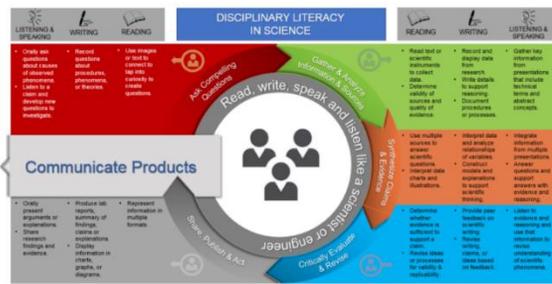
Disciplinary literacy in science focuses on how reading, writing, speaking, and listening are used to develop sense-making in science. ADE has created documents that illustrate how disciplinary literacy skills develop in science and possible strategies teachers can use while helping their students deepen their understanding of science content and practices. Here are links to the ADE Disciplinary Literacy documents by grade-band: K-2, 3-5, 6-8, 9-12.

NEW ADE Guidance for Evaluating Science Instructional Materials
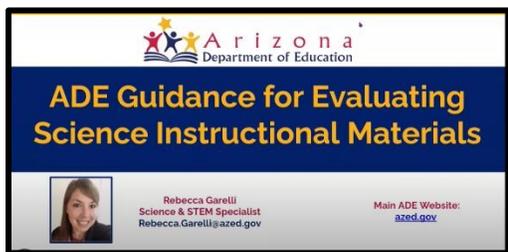
Looking for guidance when evaluating science instructional materials? Use this helpful tool, which is full of resources to help educators and district leaders understand how the Arizona Science Standards compare to the Next Generation Science Standards, as well as tools for evaluating instructional. For a quick review of this tool, watching the short video that accompanies it! **ADE Guidance for Evaluating Science Materials Resource Page | Video**

Sensemaking- What to Look For in a 3-Dimensional Science Classroom

Sensemaking is actively trying to figure out how the world works (science) or how to design solutions to problems (engineering). Students *do* science and engineering through the science and engineering practices. Engaging in these practices necessitates students be part of a learning community to be able to share ideas, evaluate competing ideas, give and receive critique, and reach consensus. ADE developed a document for the Administrators Toolkit, which is accessible through the main ADE science standards website, to help support Administrators understanding of the instructional shifts that are embedded within our 2018 Arizona Science Standards. This tool, called What to Look For in a 3-Dimensional Science Classroom, is available here.

3

Get SET for STEM Scholarship

– Develop projects and programs geared toward state-mandated competencies.

– Use funds for innovative teaching strategies that improve student performance objectives in math and science.

– Certified AZ teachers: apply NOW for a $2,000 professional development (PD) scholarship. Teachers have three years to use the $2000. Apply at [Arizona Department of Education's website](#).

– Professional development must support a certificated teacher in gaining additional credentials (e.g., qualify to teach dual enrollment physics or chemistry) and/or certifications in math, a science subject, technology, engineering or career & technical education.

Don't delay! Teachers can re-apply EACH year, for the next 1 1/2 year ONLY, for another $2000.

[Download feedback](#) from 7 teachers who used their $2000 scholarship from 2017.

STEM Teaching Tool #41
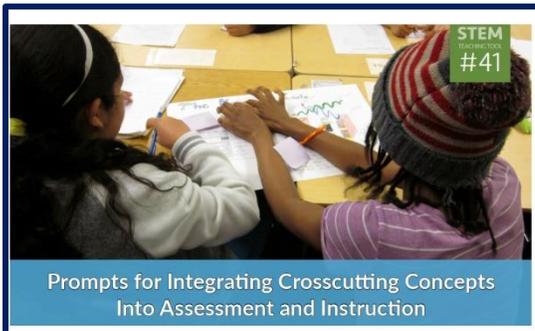
[STEM Teaching Tool #41](#), Prompts for Integrating Crosscutting Concepts Into Assessment and Instruction, is a set of prompts is intended to help teachers elicit student understanding of crosscutting concepts in the context of investigating phenomena or solving problems.

These prompts should be used as part of a multi-component extended task. These prompts were developed using the Framework for K-12 Science Education and Appendix G of the Next Generation Science Standards, along with relevant learning sciences research.

NEWLY UPDATED ADE Science Resource Page

Our team has been hard at work revamping our website to make it easier to find 3-Dimensional resources to support the robust implementation of the AZ Science Standards. These changes include live webinars, On-Demand/Recorded webinars-which are now included in our new user-friendly Science Standards page and the Science and STEM Resource Page.

NEW Complete Set K-12 Summaries that Compare the AzSS to NGSS
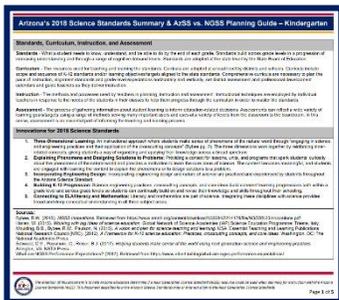
A new addition, a complete set for K-12 combined into one document! Curious to know how each of the new Arizona Science Standards (AzSS) compares to the Next Generation Science Standards (NGSS)? The ADE, with the help of our Educator Leadership Team, created a new document called "Arizona's 2018 Science Standards Summary and AzSS vs. NGSS Planning Guide". These documents describe if the Next Generation Science Standards have a "strong," "partial," or "no correlation" to the

Arizona Science Standards. This planning summary and guide can help districts and educators find resources, plan lessons, and understand more deeply how Arizona Science Standards compare to the national standards. Here are the documents for each grade level, and you can also visit our website and click "Planning Tools" to find these documents.

Kindergarten | First Grade | Second Grade | Third Grade | Fourth Grade | Fifth Grade | Sixth Grade | Seventh Grade | Eighth Grade | High School

AzSCI – Arizona Science Test

The Arizona Department of Education Assessment team has an AzSCI Resource Suite that highlights resources, including test blueprints, sample tests, and item specification documents.

LOCAL PARTNERS

Arizona Science Teachers Association

Arizona Science Teachers Association Science Talks. ASTA's Science Talks for the Academic Year occur the 4th Monday of each month from 4PM-5PM. Join the Arizona Science Teachers association for an opportunity to engage in a generative conversation about successes, challenges, and resources. The importance of Science as a human endeavor is clear and staying connected during these difficult times is crucial. Engage with PreK-12 science teachers from around Arizona. We have new topics every month. Click the Registration Link to the Right of the date. Please see the list of events for science talks and register.

ASTA's VIRTUAL Stability and Change Science Teacher Symposium is happening this summer –

July 12th & 13th.   Two days of learning science content with the lenses of the crosscutting concept stability and change AND a bag full of resources ($100 worth) that can be used in your classroom. Guess what? ASTA has scholarships to help with the registration cost. Apply now!

3-Dimensional Middle School Science Units Developed by Arizona Educators!!!

Arizona Science Teachers Associations' (ASTA) *A Deeper Dive: Constructing 3-dimensional Units* was a partnership with Arizona Department of Education (ADE) and BSCS Science Learning (BSCS) financially supported by APS Foundation.

The Five Tools is a set of tools and processes to support educators to translate science concepts, practices and performance expectations into multiple instructional sequences that form an Arizona Science Standards (AzSS) unit, create an in-depth plan for one instructional sequence and assessment task, and provide an in-depth professional

learning experience focused on the 3-dimensions. [Click here to find all the Middle School science units that were developed!](#)

STEMAZING Project- *NEW* Resources Aligned to Arizona Science Standards!!!

DaNel Hogan from Pima County Superintendent Office has a project called STEMAZing! Her team has tons of resources, professional development opportunities, and digital notebook examples! Look for the [AzSS-Aligned Resources](#) by grade level in the [K-2](#), [3-5](#), [6-8](#), [HS](#) grade band folders. Visit the [STEMAZing project](#), resources, or [register for an upcoming event](#)! ***NEW* and growing [list of AZSS-Aligned Resources](#)**

You can also follow the STEMAZing project on social media & sign up for the newsletter: **[Facebook](#) [Twitter](#)** [Sign up for The STEMAZing Newsletter!](#)

Courses Enroll in Summer Science PD Courses from NAU Today!

Free Tuition Available to Arizona Public School Educators!

Interested in pursuing a master's degree in science education? Join us in the [Center for Science Teaching and Learning](#)! We offer **fully online, part-time programs** designed to be completed in two years. The programs are unique in that they focus solely on science education allowing students to be part of a supportive cohort of high-achieving science educators taught by faculty who specialize and conduct research in science education.

The [MAST](#) program is for veteran teachers interested in enhancing their classroom knowledge and practice. The [MAT-S](#) program provides an AZ Standard Professional

Secondary Certificate for our newly hired colleagues. Applications are available now to begin in fall.

Current Arizona teachers are eligible for **free tuition** in our master's programs through the Arizona Teacher's Academy. Full details on financial assistance for all programs are available here.

Already have a master's and looking to earn a Ph.D.? Check out our program in Curriculum & Instruction!

Please let me know if you have any questions or if you would like to set up an advising appointment to learn more about which program is right for you.

Modeling Instruction Courses through ASU
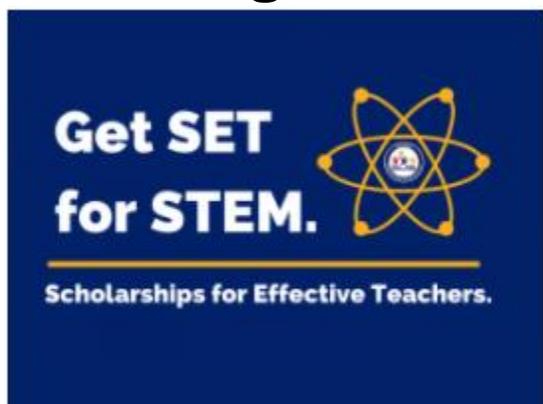
ASU will offer 3 summer live online courses (via Zoom) and 3 in-person courses for high school teachers in physics and chemistry. Modeling Instruction courses are deep content with effective pedagogy. $2000 scholarships are available from the ADE for certified teachers to take these courses to prepare to add physics or chemistry certification or to qualify to teach dual enrollment.Take courses for ASU graduate credit (top priority) or CEUs. Apply for a partial tuition scholarship or to reserve a seat for CEUs at ASU Department of Physics page. Hover over "Admission and scroll down to "Modeling Instruction Program".

Read Information and the syllabi.

For questions: jane.jackson@asu.edu, 480-314-1522.

Download a Flyer.

Arizona Project WET Professional Development

Arizona Project WET provides real world and relevant resources to engage students' natural curiosity about the world and their place in it. Project WET's academies and workshops activate learning through engagement, exploration, concept invention and reflection. Teachers receive Arizona Science Standards-based lessons that have students doing science rather than learning about science! See opportunities at this link: Workshops & Academies | Teacher PD (arizona.edu)

National PARTNERS

National Science Teaching Association (NSTA) Web Seminars

Web Seminars are free, live professional learning experiences that use online learning technologies to allow participants to interact with nationally acclaimed experts, NSTA Press authors, and scientists, engineers, and education specialists from NSTA partner organizations. All web seminars are recorded for watching on-demand. Register for upcoming WebSeminars. Check out the NEW NSTA calendar.

Computer Science

Computer Science Professional Development Fund

Don't miss the opportunity to receive a grant for up to $25,000! Public Schools that offer instruction in grades 9 through 12 and seek professional development to train educators to offer a new course(s) in computer science can qualify for up to $25,000. The Computer Science Professional Development (CSPD) grant funding is designed to be used to provide professional development for a high school teacher or teachers to **teach a computer science course that is not currently offered at the high school.** For example, if High School J offers

a Code.org class and would like add a new course in Java scripting, it could apply for funding to use to provide professional development to one or more of its teachers to begin offering the Java course. Or, if High School J does not offer any computer science courses, it could apply for funding to use to provide professional development to one or more of its teachers to begin offering a computer science course. Attached are the Application Rubric and the Guidance Document to assist you with the application process. Please reach out to Sarah.Sleasman@azed.gov if you have any questions.

Computer Science Implementation Guidance Document and Endorsement

Arizona released K-12 Computer Science Standards in October 2018 and two options for Computer
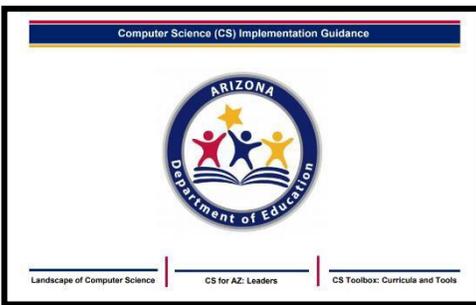
Science endorsement for K-12 teachers. To support the implementation of these standards, we are excited to present a *Computer Science Implementation Guidance document.* This document's primary purpose is to introduce LEAs to resources that support the implementation of the new *Arizona K-12 Computer Science Standards.* Whether integrating C.S. and computational thinking across the curriculum or adopting it as a stand-alone course, there is a need to consider C.S. implementation within the K-12 system. As such, resources and guidance are outlined in the sections below that address the needs of the following stakeholders: school/LEA leadership, counselors, and educators. An additional section includes considerations when adopting C.S. curricula and tools. In addition, to provide guidance regarding the new options for the Arizona Computer Science endorsement, the link to a one-page document that clearly outlines the requirements for *PreK-8 CS Endorsement* and *6-12 CS Endorsement* for Arizona educators can be found *here.*

Computer Science Webinars and Resources from Gilbert Public Schools

If you are looking for a way to integrate the Computer Science Standards into your classroom, here are some helpful resources! Shawn Abele, an educator from Gilbert Public Schools, has been providing webinars for the agency focused on Computer

10

Science integration. The [Computer Science Video Series](#) is found on the [Computer Science Standards Page](#).

She has also created these resources on **the Practical Application of the Newly Adopted Computer Science Standards** for *Kindergarten | 1st Grade | 2nd Grade | 3rd Grade | 4th Grade | 5th Grade.*

Computer Science Teacher's Association | Arizona

The **[Computer Science Teachers Association of Arizona (CSTA-AZ)](#)** is excited to announce a menu of Virtual Professional Development experiences. Many of these sessions are *free* or have scholarships & funding available, such as through the ***Arizona Department of Education CSPD Fund.*** All courses apply towards the new Arizona Computer Science Teaching Endorsements for *K-8* and *6-12*.

2021 CSTA Annual Conference

There is a whole community of computer science educators just like you out there. If you are looking for inspiration, connection, and a chance to be rejuvenated, join the CSTA 2021, set for July 14-16, 2021.
CSTA's Annual Conference is a chance for computer science teachers to come together for learning, networking, and fun. They are a community of educators who are changing the lives of students every day in our classrooms. They are eager to share our knowledge and to learn from one another.

Their three-day virtual conference has over 100 sessions of education to broaden your knowledge of computer science education, inspirational keynotes and sessions to reinvigorate your passion for teaching, and countless moments of fun and connection along the way. If you are looking for new and exciting ways to engage with your students in your classroom, look no further than CSTA 2021. You don't want to miss out on this great experience.

Scholarships are available! Click here to learn more about the [Conference and Scholarship details](#).

Computer Science Education from Code.org
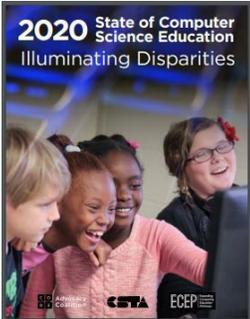
Don't forget to visit www.advocacy.code.org/stateofcs to download your copy of the 2020 State of Computer Science Education: Illuminating Disparities or the 4- page state-specific handouts. The State of CS repost was just released from Code.org and CSTA, and it includes a breakdown of access and participation information for all 50 states, including AZ! This report is a comprehensive snapshot of the state of CS in education. It includes information from 100% of U.S public high schools.

Codelicious FREE Webinar

[Register here](#) for this FREE Webinar called" **Framework for Assessing Coding Lessons in a Blended or Virtual Classroom"** This session includes 5 different ways to alleviate the computer science grading burden while still evaluating students' foundational knowledge, problem solving skills, and creativity. Participants will be able to identify ways to assess coding lessons and leave with a Codelicious coding lesson for teachers to implement in their hybrid or virtual classroom.