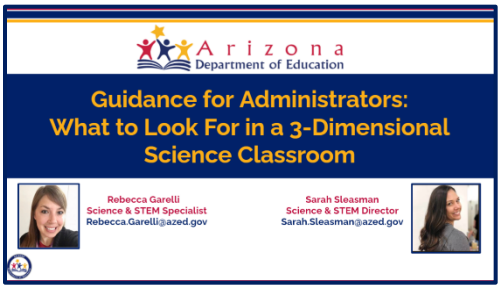
SCIENCE | STEM

ACADEMIC STANDARDS
SUPPORTING STANDARDS. SUPPORTING SUCCESS

WHAT'S NEW IN MAY 2022

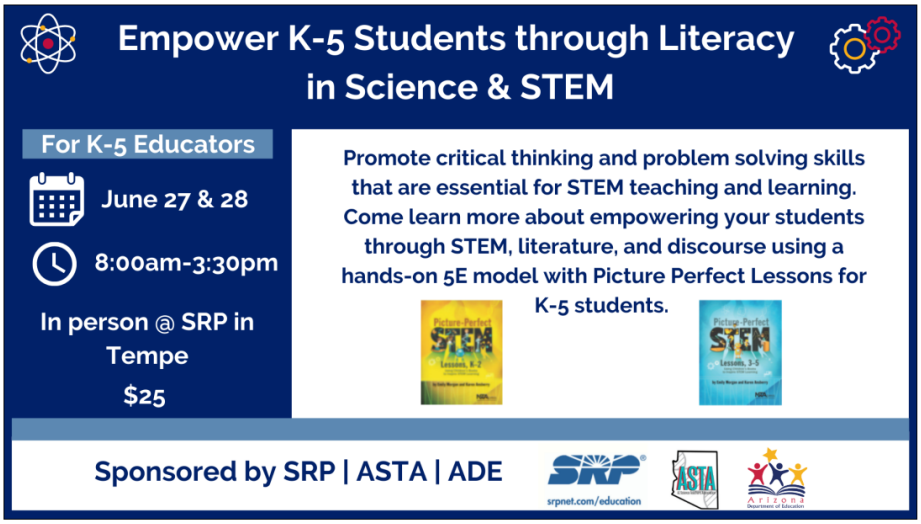
Administrators PD, Webinar & Toolkit

Registration link for Administrators PD: https://bit.ly/ADE-SciencePD



NEW Guidance for Administrators- What to Look For in a 3-Dimensional Science Classroom PD Video | PDF | Resource Page - A webinar for Administrators to help with supporting educators with the transition to the 2018 Science Standards. Additionally, we have an Administrators Toolkit full of resources to help administrators support science educators. Click on our main science website and scroll down to "Administrators Toolkit."

Empower K-5 Students Through Literacy in Science and STEM!



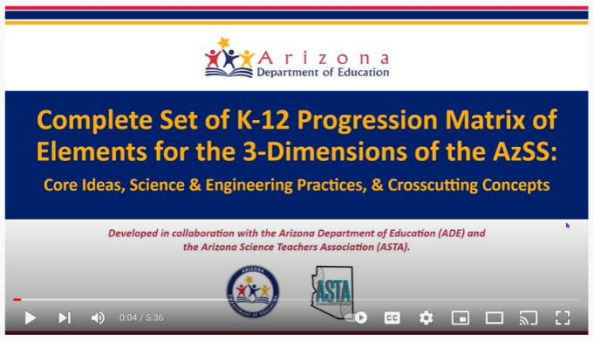
Only a few more spots available for this in-person professional learning. Come learn more about empowering your students through STEM, literature, and discourse using a hands-on 5E model with Picture Perfect Lessons for K-5 students.

Who: K-5 Educators When: June 27-28
Where: SRP in Tempe | **Cost:** $25
Click here to register or visit: https://azsta.org/empower-k-5-students-through-literacy-in-science-stem/ ONLY 40 spots available.

Presidential Awards for Excellence in Mathematics and Science Teaching

Each year, the President of the United States recognizes outstanding mathematics and science teachers by bestowing upon them the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST). These awards demonstrate the value and appreciation the nation has for the its teachers. The awardess received a $10,000 cash award, a trip to Washington D.C., they received a signed Presidential Certificate, and join the Presidential Awardee Network.

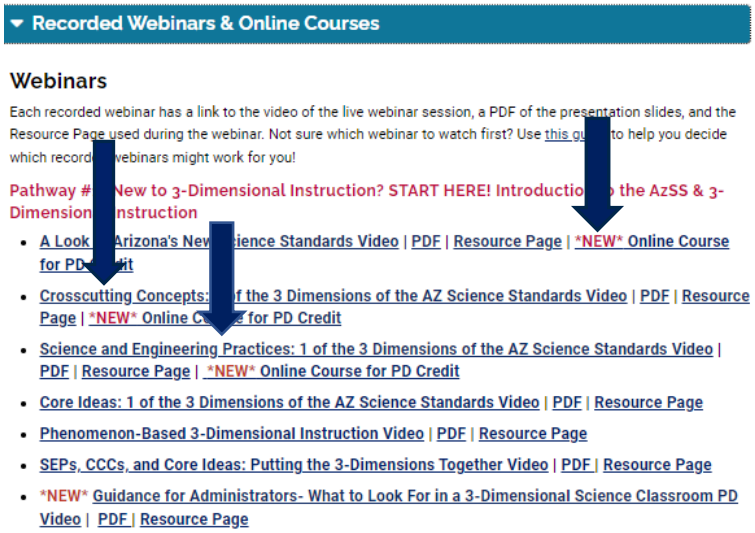
NEW Complete Set of K-12 Progression Matrix of Elements for the 3-Dimensions of the Arizona Science Standards - Core Ideas, Science & Engineering Practices, & Crosscutting Concepts



The Science and STEM Team is excited to have the Complete Set of K-12 Progression Matrix of Elements for the 3-Dimensions of the Arizona Science Standards - Core Ideas, Science & Engineering Practices, & Crosscutting Concepts this is housed on the Science Standards website (under the Vertical Progressions tab). This work was led by the Arizona Department of Education and the Arizona Science Teachers Associaion. These vertical progressions will help you understand how and what students are expected to know and do in each grade-band, builds on what they have learned in earlier grades and prepares them for what they are expected to learn in later grades. The expectations for each gradeband are called “elements,” which are illustrated as bullets in each of the matrixes. In addition this document will help to clarify standards by given boundaries, clarifying statements, and notes to inform instruction. View this Video intro for more information about how to read and use this document.

3 *NEW* Online Self-Paced Courses Available for PD Credit!

Click here to register for this course!



- **A Look at Arizona's New Science Standards Video | PDF | Resource Page | *NEW* Online Course for PD Credit**
- **Crosscutting Concepts: 1 of the 3 Dimensions of the AZ Science Standards Video | PDF | Resource Page | *NEW* Online Course for PD Credit**
- **Science and Engineering Practices: 1 of the 3 Dimensions of the AZ Science Standards Video | PDF | Resource Page | *NEW* Online Course for PD Credit**

Webinars on the go! Watch a webinar on YOUR TIME!

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

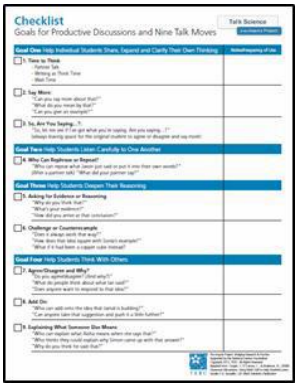
Gather, Reason, Communicate (GRC) Lessons

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.

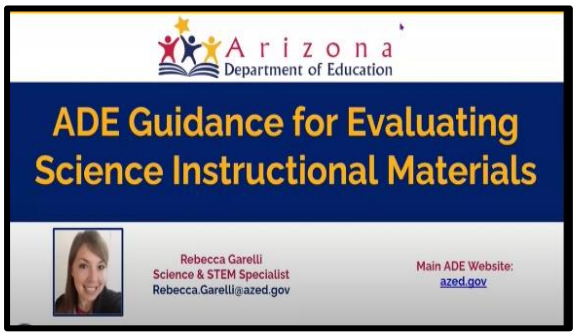
Discourse in Science



Productive Science Talk & Student **Science talk** is an instructional discourse practice that capitalizes on this enthusiasm and gives students regular and deliberate opportunities to process their thinking and communicate about what they have seen and done. Through exchanging views with others, students develop their understanding of the science beyond what could be achieved individually. The ultimate goal of **science talk** is to create a discourse-rich classroom culture where the natural synergy between language and meaning making supports all students in expressing ideas, developing language and acquiring new knowledge of scientific phenomena. Here are a few resources to help you engage your students in Productive Science Talk: Talk Science Primer, Talk Moves Checklist, STEM-Teaching-Tool-6-Productive Science Talk.

Additional STEM Teaching Tools that can help educators support student discourse include: #16, #35, and #48.

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**

AzSCI – Arizona Science Test

The Achievement Assessment team is seeking diverse pool of educators to serve as members of the AASA and AzSCI Assessment Committees in the following content areas— English Language Arts (ELA), Mathematics, and Science. This is a rewarding opportunity for educators who are interested in learning about large-scale, standards-based assessment. Committee members are directly involved in assisting the Department with the process of developing AASA and AzSCI test items. Members receive an honorarium as well as understand the item development process.

Please see complete application to be selected as a committee member!

https://www.azed.gov/assessment/assessment-section-committee-application?utm_campaign=website&utm_source=sendgrid.com&utm_medium=email

The Arizona Department of Education Assessment team has an AzSCI Resource Suite that highlights resources, including test blueprints, sample tests, and item specification documents. Please reach out to AzSCI@azed.gov with any questions.

Get SET for STEM Scholarship

Develop projects and programs geared toward state-mandated competencies.

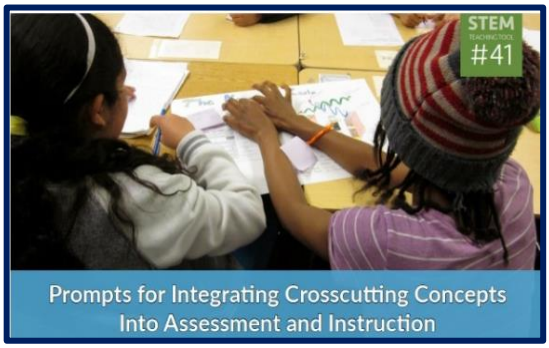
Use funds for innovative teaching strategies that improve student performance objectives in math and science.

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.

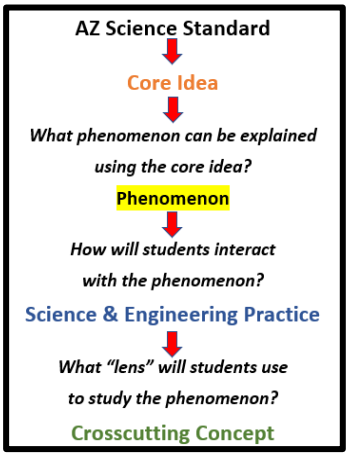
STEM Teaching Tool #41



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.

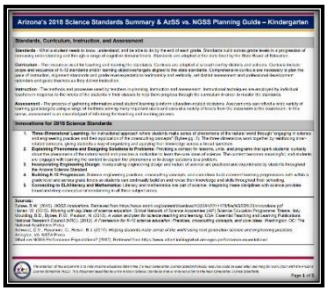
Phenomena-Based 3-Dimensional Instruction Resources



Phenomena are observable events that can be explained or explored. ADE developed a tool to help guide the selection of three dimensions to integrate during instruction and also encourage educators to focus on phenomena. In addition, here are two resources that can also help with selection of phenomena and designing 3-dimensional instruction: STEM Teaching Tool #42 and STEM Teaching Tool #28.

(The department recognizes that the acronym NGSS is consistently used throughout resources provided on our website. To ensure clarity and avoid confusion the new Arizona Science Standards and the National NGSS standards are both designed from the A Framework for K-12 Science Education with a focus on three-dimensional instruction, this includes: Science and Engineering Practices, Crosscutting Concepts and Core Ideas. Arizona Science standards also used Working with Big Ideas of Science Education when creating the Core Ideas.)

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

LOCAL PARTNERS

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!

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

NSTA Sensemaking Professional Learning Unit (PLU)- What is Sensemaking?

The National Science Teaching Association is offering a FREE 2-hour course on Sensemaking. After exploring what sensemaking truly means, educators will be introduced to the four attributes of sensemaking (phenomena, science and engineering practices, student ideas and grade-appropriate disciplinary core ideas) and how they can be used in the classroom to promote equity and provide opportunities for all students to be scientific thinkers. This is a self-paced, FREE course for educators. Here is the link to register and view other PLUs developed by NSTA.

Member Price: $0.00 | Non-member Price: $0.00 | 2 Credit Hours