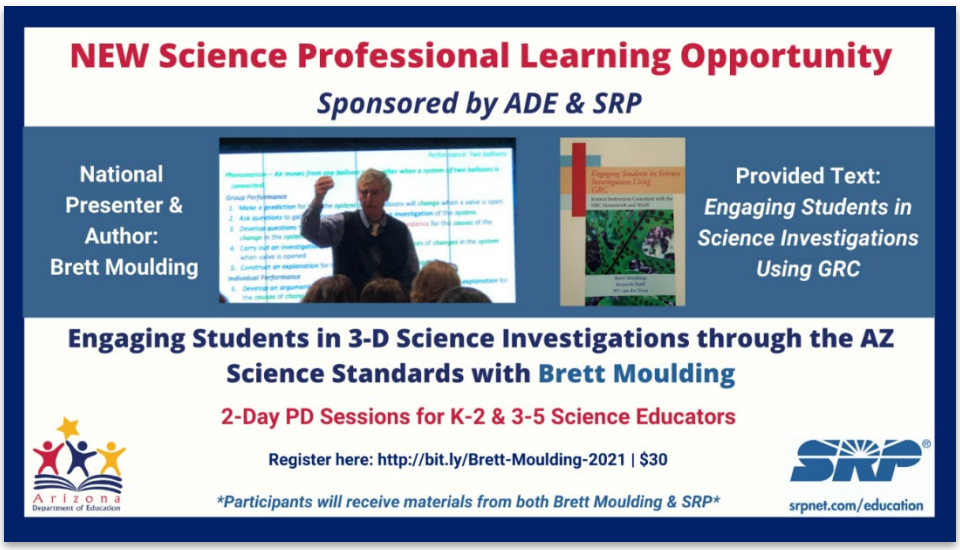
WHAT'S NEW in February 2021

UPCOMING SPRING SATURDAY OFFERINGS

You won't want to miss the *NEW Saturday Events* with Brett Moulding, a national science leader, author, and professional development facilitator, sponsored by ADE and SRP. Please click on the links below to find out more information and to register for this great opportunity! Materials will be provided, including a copy of Brett Moulding's new book, materials for science investigations, and materials from SRP.

Title	Dates	Time	Cost
Engaging Students in 3-D Science Investigations through the AzSS with Brett Moulding: 3-5 Educators	3/20/2021 & 3/27/2021	8:00am-3:30pm 8:00am-3:30pm	$30.00
Engaging Students in 3-D Science Investigations through the AzSS with Brett Moulding: K-2 Educators	4/10/2021 & 4/17/2021	8:00am-3:30pm 8:00am-3:30pm	$30.00



PROFESSIONAL DEVELOPMENT OPPORTUNITIES

Webinar Description	Date	Time	Cost
#SciencingAndEngineering in 2021 with @TheSTEMAZingPro and @RobotGeneral5 Session 1	*1/19/2021*	*4:00pm-5:00pm*	*Free*
Transforming Science Learning- Engaging Students with the Science and Engineering Practices Using Digital Tools	*1/21/2021*	*4:00pm-5:15pm*	*Free*
Crosscutting Concepts: 1 of the 3 Dimensions of the AZ Science Standards Session 1	*1/27/2021*	*4:30pm-5:45pm*	*Free*
SEP Asking Questions: Students Drive Instruction with Driving Question Boards!	*1/28/2021*	*4:00pm-5:15pm*	*Free*
Transforming Science Learning- Engaging Students with the Science and Engineering Practices Using Digital Tools	*2/9/2021*	*4:00pm-5:15pm*	*Free*
Science and Engineering Practices: 1 of the 3 Dimensions of the AZ Science Standards Session 2	*2/11/2021*	*4:00pm-5:15pm*	*Free*
#SciencingAndEngineering in 2021 with @TheSTEMAZingPro and @RobotGeneral5 Session 2	*2/16/2021*	*4:00pm-5:00pm*	*Free*
A Look at Arizona's New Science Standards	*2/18/2021*	*4:00pm-5:15pm*	*Free*
SEP Asking Questions: Students Drive Instruction with Driving Question Boards!	*2/25/2021*	*4:00pm-5:15pm*	*Free*
#SciencingAndEngineering in 2021 with @TheSTEMAZingPro and @RobotGeneral5 Session 3	*3/9/2021*	*4:00pm-5:00pm*	*Free*
Core Ideas: 1 of the 3 Dimensions of the AZ Science Standards Session 3	*3/10/2021*	*4:30pm-5:45pm*	*Free*
A Look at Arizona's New Science Standards	*3/18/2021*	*4:00pm-5:15pm*	*Free*
Phenomena-Based Instruction	*3/25/21*	*4:00pm-5:15pm*	*Free*
Transforming Science Learning- Engaging Students with the Science and Engineering Practices Using Digital Tools	*4/1/2021*	*4:00pm-5:15pm*	*Free*
SEP Asking Questions: Students Drive Instruction with Driving Question Boards!	*4/8/2021*	*4:00pm-5:15pm*	*Free*
#SciencingAndEngineering in 2021 with @TheSTEMAZingPro and @RobotGeneral5 Session 4	*4/13/2021*	*4:00pm-5:00pm*	*Free*
Phenomena-Based Instruction	*4/15/2021*	*4:00pm-5:15pm*	*Free*
A Look at Arizona's New Science Standards	*4/22/2021*	*4:00pm-5:15pm*	*Free*

NEW WEBINAR!

Sign up for the NEW Webinar- SEPs, CCCs, and Core Ideas: Putting the 3-Dimensions Together which is scheduled for March 17th from 4-5:30PM.

Title: SEPs, CCCs, & Core Ideas: Putting the 3 Dimensions Together
What does it look like to integrate the 3-dimensions of the AZ Science Standards? Join us for this active-hands-on experience.

Description:
Effective science instruction engages students in enjoyable learning experiences that intertwine the 3-dimensions: science and engineering practices, crosscutting concepts, and core ideas. This vision of effective science instruction shifts the idea of students knowing what and that to understanding how and why. For this vision to be enacted, science instruction must be carried out with intentionality, engaging students in the practices in a progression of learning of the core ideas and crosscutting concepts. Participants will experience a lesson in which the 3-dimensions are intertwined. ***To enhance your learning experience in this web seminar, each participant needs to provide 1 clear plastic (or glass) cup, ice cubes, and 70% isopropyl alcohol.***

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):

- *A Look at Arizona's New Science Standards Video | PDF | Resource Page*
- *5-E Instructional Model and Science Notebooks Video | PDF | Resource Page*
- *Phenomenon-Based 3-Dimensional Instruction Video | PDF | Resource Page*
- *Science and Engineering Practices Video | PDF | Resource Page*
- *Crosscutting Concepts Video | PDF | Resource Page*
- *Constructing Explanations and Arguing from Evidence using Claims, Evidence, Reasoning (CER) Video | PDF | Resource Page*
- *Core Ideas: 1 of 3 Dimensions 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! | PDF | Resource Page*

Science & STEM 2020 Year in Review

Please review the Science & STEM year-end summary of our Science & STEM Team's accomplishments throughout this challenging environment of 2020. Our team adjusted to the needs of educators in 2020 and developed a plan accordingly. A few highlights include facilitating 58 webinars with a total of 2,126 participants!! We also created 11 brand new resources, and presented 6 times at national events! We are excited to move forward with our work in 2021!

What is sensemaking?

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.

Whether this community of learners is made up of classmates or family members, students and adults build and refine science and engineering knowledge together. Each weekday, NSTA will share a sensemaking task, called a "Daily Do," that teachers and families can use to engage their students in authentic, relevant science learning. Click here to search for sensemaking tasks called NSTA Daily Dos.

Nominate a Colleague for Presidential Awards for Excellence in Mathematics and Science Teaching

The Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) are the nation's highest honors for teachers of mathematics and science (including computer science). Nominations and applications open for mathematics and science teacher grades 7-12 opened in the Fall and will remain open until March1, 2021. To submit a nomination, you only need the teacher's contact information. If you know more than one teacher deserving this award, you may submit more than one nomination. Teachers may also initiate the application process themselves at www.paemst.org.

SRP Learning Grant

The Salt River Project (SRP) Learning Grant application process opened on Oct. 1, 2020. Teachers in K-12 can apply for up to $5000 in funding from SRP. The process closes on February 28, 2021, and funding is given in May. Information, application, and grant-writing tips are at https://www.srpnet.com/education/grants/default.aspx

All K-12 educators in metropolitan Phoenix, Pinal County, Gila County, Yavapai County, Page, St. Johns, and NGS community chapters are eligible to apply.

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 https://www.azed.gov/titlei/pd-pilot-program

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: see http://modeling.asu.edu/AZ/$2000scholarshipsFeedback2019.pdf

Easy $600 STEM-CAN Grants

Guidelines are as follows:

Funding southern Arizona conventional (not charter) public school teachers' and principals' proposed STEM projects:

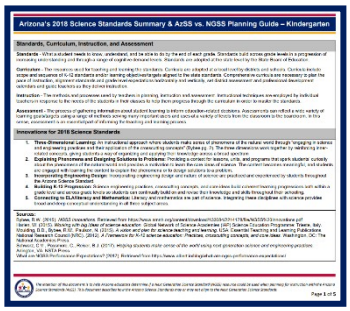
1. One project per teacher applicant per funding year (August 15 to March 15)
2. Teacher proposed projects funded at $100 to $600.
3. Principal proposed projects funded at $3,000 to $5,000.

Apply soon! Easiest application ever. Click Here to Apply

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


Arizona's 2018 Science Standards Summary & AzSS vs. NGSS Planning Guide – Kindergarten

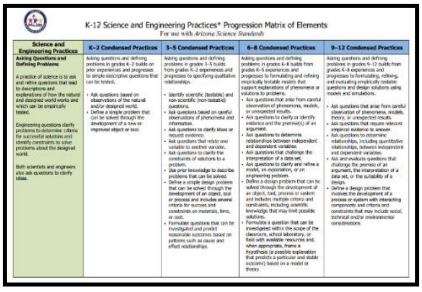
Standards, Curriculum, Instruction, and Assessment

Innovations for 2018 Science Standards

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

3 Vertical Progression Documents – One for each of the 3 Dimensions!


K-12 Science and Engineering Practices* Progression Matrix of Elements

Did you know? ADE's science standards website has three documents that can help educators plan for 3-dimensional science instruction. The first document is the ***Vertical Alignment Progression of Knowing Science*** that describes how the standards spiral from Kindergarten through Twelfth Grade. The second document is called the ***K-12 Crosscutting Concepts Progression Matrix of Elements*** that describes specific targets for each grade band in relation to each of the seven crosscutting concepts. The third document is the ***K-12 Science and Engineering Practices Progression Matrix of Elements*** that includes descriptors of what students should be able to do in regards to the Science and Engineering Practices in each grade band.

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.

AIMS Science: "The Arizona State Board of Education took advantage of a waiver from the U.S. Department of Education to eliminate the testing of AIMS

Science in the 2020-2021 school year. AIMS Science was scheduled to be administered in 4th, 8th and 10th grade for the final time before being replaced by AzSCI. Simultaneously, AzSCI was scheduled to be census field tested in 5th, 8th and 11th grade. With the action taken by the Board, schools can now focus on the new assessment, AzSCI, which is aligned to the new standards. AIMS Science is now retired." Arizona State Board of Education virtual met 8-12-20. Highlights of the State Board Meeting

LOCAL PARTNERS

ASTA Science Talks

Arizona Science Teachers Association Science Talks. ASTA's Science Talks for the Academic Year occur the 4th Monday of each month from 4PM-5PM (excluding December). 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. Here is a list of events for science talks: https://azsta.org/events/science-talks/

NEW 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:**

https://stemazing.org/arizona-science-standards-aligned-resources/

You can also follow the STEMAZing project on social media & sign up for the newsletter:
Facebook:https://www.facebook.com/TheSTEMAZingPro /
Twitter:https://twitter.com/TheSTEMAZingPro

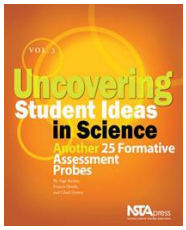
Sign up for The STEMAZing Newsletter!

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 here: https://my.nsta.org/webseminars

Page Keeley- Digital Versions of Formative Assessment Probes!



Page Keeley, author of the *Uncovering Student Ideas in Science Formative Assessment Probes in Science* series, has recently released some of these amazing probes and openly published them via her Twitter account (@CTSKeeley). Click this link to see the formative assessment probes released as Google Slides.

OpenSciEd- FREE, Open Source Instructional Units

OpenSciEd instructional materials are robust, research-based, open-source science instructional materials designed to increase accessibility for all teachers and students. The instructional materials are being designed not as stand-alone units but as a full coherent sequence that builds across units and across years. There are units for 6, 7, and 8th grades, as well as COVID-19 units for all grade levels. Click here for instructional materials: https://www.openscied.org/instructional-materials2/

How I'm Teaching Remotely from Paul Anderson

Paul Andersen describes how he is teaching remotely in both conferences and classrooms. He tries to focus on good pedagogy rather than technology. The main topics include Whole Class Instruction, Science Investigations, Student Feedback and Small Group Work. Click this link to watch this video!

3-D Assessment Design with Paul Anderson, The Wonder of Science & STEM Teaching Tools

If you are interested in learning more about how to design 3-dimensional assessments, here are a few great resources to get you started. STEM Teaching Tool #29 describes the steps for designing a three dimensional assessment and STEM Teaching Tool #34 focuses on designing an assessment system that measures three-dimensional science learning. Paul Anderson's site, The Wonder of Science, also has a few tools to help educators new to 3-dimensional assessment design. The first resource helps educators understand a simple 3-step process for designing assessment and another great resource describes how to use an assessment screening tool to review possible assessments for use.

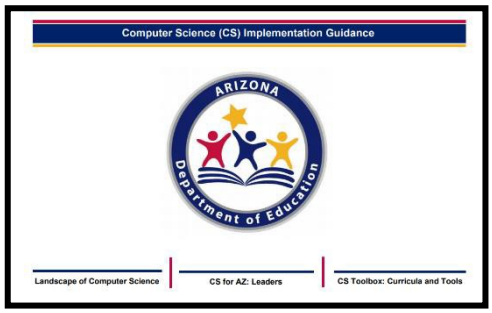
Computer Science

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 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***. Check out the CSTA Arizona January Newsletter.

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.

2020 State of Computer Science Education

Join the Movement!

Click here to join the 90-plus organizations in the Code.org Advocacy Coalition or sign up here to receive Code.org newsletters

Cultivating Interest and Competencies in Computing Report Release

The Board on Science Education has released a new consensus study report examining authentic learning experiences in computing for youth.
The ubiquity of computing in both personal and professional life has led to increasing calls for all learners to participate in learning experiences related to computing. Authentic experiences in STEM—that is, experiences that reflect professional practice and also connect learners to real-world problems that they are about—are one approach for reaching a broader range of learners. Cultivating Interest and Competencies in Computing: Authentic Experiences and Design Factors examines the evidence on learning and teaching using authentic experiences for computing in both formal and informal settings in children and youth ages 5 through 18, and examines how these activities can be an important driver for engagement and continued participation for learners. Particular attention was given to engaging learners who have been typically underrepresented in computing fields based on gender, race, ethnicity, or perceived ability. Members of the committee who wrote the report will give an overview of the key issues, conclusions, and recommendations.
View the webinar here or download the report here.