Follow us on Facebook (@AZDeptofEducation), Twitter (@azedschools) and Instagram.

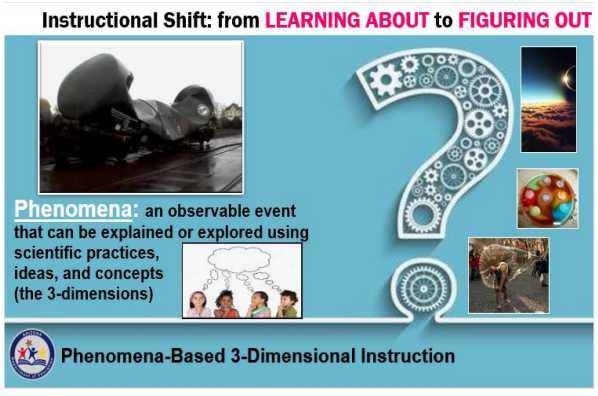
STEM resource page / *Science resource page* / Math resource page / *Computer Science resource page*

WHAT'S NEW

NEW Science Standards Videos

Curious to know the major differences between the new Arizona Science Standards and the Next Generation Science Standards? Wondering what aspects are the same or different? If so, then take a look at our two new science standards videos. This is a two-part video series. Part 1 was designed to explain the similarities and differences between the NEW Arizona Science Standards that were adopted in October of 2018 and the Next Generation Science Standards. Part 2 of this video series was designed to dig a little bit deeper into the similarities and differences between these two sets of standards by doing a side-by-side comparison of an NGSS standard and an Arizona science standard. The goal of this video is to help educators understand how to compare the standards using a step by step approach.

3 NEW Recorded Webinars



ADE is pleased to announce that we have three new 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 and Videos." The webinars include:

- **A Look at Arizona's New Science Standards**
- **5E Model and Science Notebooks**
- **Phenomena-Based 3-Dimensional Instruction**

These are great resources to view on your own, or together with a group of your colleagues! This Spring, we will have more opportunities for live webinars, sign up here: ***https://bit.ly/2AtlPRx***

Science Standards and Assessment

The Arizona Department of Education (ADE) is currently beginning the process of designing a new Science assessment to measure students' attainment of the new Science Standards. A timeline has been designed to assist LEAs and Charters with the implementation and transition to the new standards. An alternative timeline has been developed for those LEAs that require one. Please refer to the graphics for assessment schedule in the links provided.

In January, schools may volunteer to take a short Science Prototype field test to try out different item types for the new science assessment. Your District Test Coordinator (DTC) will work with ADE to sign up for this opportunity, see information below. Students in grades 4,8, and high school will still take the AIMS Science test this Spring. In 2020-2021, a field test for the science assessment will be administered across the state, while administering the last version of AIMS Science. In 2021-2022, the first operational Arizona science assessment test will be given.

Please visit the K12 Science Standards website for important standards, assessment, and professional development information. Should you have any questions, please email the K12 Science Standards team at K12standards@azed.gov. To become involved with the assessment committee please visit the assessment educator page and fill out the committee application.

AzSCI Prototype Field Test

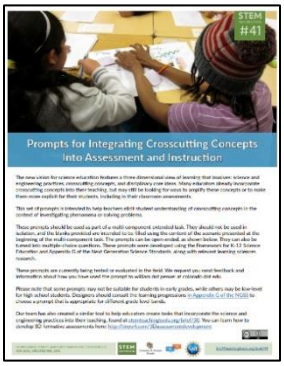
In preparation for developing items for the AzSCI test, ADE is gathering information on how students interact with the testing interface and new item types. We would like to invite your LEA to participate in the AzSCI Prototype Field Test.

- Who: Students in grades 5, 8, and 11. You can include your school, one teacher, or just one class.
- Testing Window: January 27—February 21, 2020
- The Prototype includes 15 items at each grade band (Gr. 3-5, 6-8, and 9-11).

Next Steps:

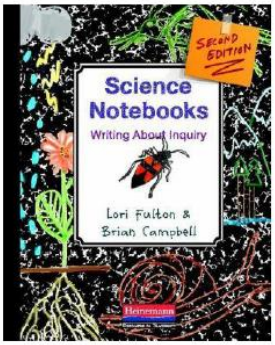
- Step 1: Contact your District Test Coordinator (DTC) to indicate your interest in participating in the AzSCI Prototype Field Test.
- Step 2: Review the webinar recording that we are providing for District Test Coordinators on December 4, 2019. The webinar will be posted on the Assessment Science website at http://www.azed.gov/assessment/sci/ on December 5. Click "AzSCI Testing Resources" to find the webinar.
- Step 3: Indicate to your DTC which class or classes that you'd like to have participate in the Field Test.

Engaging Students with the Crosscutting Concepts



The seven crosscutting concepts can be viewed as the "lens" through which students think about phenomena. But, how can we successfully engage students with the seven crosscutting concepts? STEM Teaching Tool #41 contains a set of prompts that are intended to help teachers elicit student understanding of crosscutting concepts in the context of investigating phenomena or solving problems. The prompts include explicit sentence frames to help educators elicit ideas during student discourse. The National Science Teaching Association (NSTA) also has a great resource that include crosscutting concept sentence starters- NSTA Crosscutting Concept Sentence Starters.

Science Notebooks as a Learning Tool



Science notebooks are an incredible leanring tool to help students with sense-making in science. Using notebooks in science and STEM instruction is also an importatnt aspect of 3-dimensional learning and helps to engage students in the science and engineering practices, as well as helping make their thinking visible. A great website, with a wealth of information about how to set up notebooks, engage students in creating notebook entries, and many sample notebook entries can be found at California Academy of Sciences. A wondeful book that explains how notebooks can be used in a 3-dimensional classroom is featured here on the left (pictured) and is titled "Science Notebooks- Writing About Inquiry" and is written by Lori Fulton and Brian Campbell.

On-Demand Webinars – Free!

Finding time for professional development is a challenge. If your school or district has a scheduled time for PD during the week, you might want to consider scheduling a Science webinar with our Science and STEM specialist!

The ADE K-12 Standards Science team can provide FREE live webinars to you "On-Your-Time" for select topics geared towards elementary or secondary audiences. Complete the online request form to indicate your webinar need and we will review our availability. Did we mention these are FREE? The online request form can be found on our On-Demand Webinar page.

Available **On-Demand Webinars**:

1. A Look at Arizona's New Science Standards
2. Phenomena-Based 3-Dimenaional Instruction
3. 5-E Instructional Model & Science Notebooks

NEW Computer Science Webinars and Resources from Gilbert Public Schools

If you are looking for 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. 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**. These webinars were offered to K-2, 3-5, and 6-8 classroom educators to help show how you are already teaching the standards (and may not even know it!) as well as provide resources for extension activities. Coming soon- Shawn's recorded webinars will be available for viewing and use, check back on the ADE Computer Science page.

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.

PROFESSIONAL DEVELOPMENT, OPPORTUNITES, & GRANTS

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 are the highest honors bestowed by the United States government specifically for K-12 science, technology, engineering, mathematics, and/or computer science teaching. The Awards were established by Congress in 1983. The President may recognize up to 108 exemplary teachers each year. Awards are given to science, technology, engineering, mathematics, and/or computer science teachers from each of the 50 states, the District of Columbia, the Commonwealth of Puerto Rico, the Department of Defense Education Activity schools, or the U.S. territories as a group (American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and U.S. Virgin Islands). The award recognizes those teachers have both deep content knowledge of the subjects they teach and the ability to motivate and enable students to be successful in those areas. Since the program's inception, more than 4,800 teachers have been recognized for their contributions in the classroom and to their profession. This year's awards will honor science, technology, engineering, mathematics, and/or computer science teachers working in grades K-6. Nominations close on March 1, 2020. Nominate a teacher today! 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, 2019. Teachers in K-12 can apply for up to $5000 in funding from SRP. The process closes on February 28, 2020, 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.

* Develop projects and programs geared toward state-mandated competencies.
* Use funds for innovative teaching strategies that improve student performance objectives in math and science.

Century Link Teachers and Technology Grant Program

The CenturyLink Teachers and Technology Grant Program is open to PreK-12 public and private school teachers in CenturyLink's residential service areas. It is designed to help teachers innovatively implement technology in their classrooms to increase student achievement. Details at: https://online.foundationsource.com/public/home/CenturyLinkGrant

- Maximum request is $5,000.
- Schools do not have to be a CenturyLink customer to apply but must be located in a CenturyLink service area where CenturyLink provides residential phone service.
- Applications are accepted until January 12, 2020. All applicants will be notified of their application status by May 15, 2020.

The Morpho Institute's Educator Academy in the Amazon Rainforest

Dates: July 1-11, 2020

The Educator Academy in the Amazon Rainforest provides powerful professional development designed to transform student learning. Immersed in the Peruvian Amazon, teachers learn about this key global ecosystem while building their ability to engage students in scientific research, engineering design, cross-cultural connections, and stewardship projects. Field workshops support NGSS 3D learning, STEM, 5E and more.

With specialized tracks for elementary, middle school, and HS/AP educators, participants will:

- Work side-by-side with scientists and researchers on citizen science projects and field studies on the ACTS Rainforest Canopy Walkway in one of the world's most biologically diverse environments.
- Explore conservation and sustainability via hands-on workshops with indigenous communities.
- Spend a day in an Amazon village and explore the role of education in creating a sustainable future for Amazon children.
- Work in grade-level cohorts to develop strategies for using the Amazon as a vehicle for incorporating standards-based inquiry, STEM, and sustainability education into the classroom.

2020 Grant and Scholarship Opportunities:

- **NEW!!** $3195 Vernier Software & Technology STEM Fellowship for a HS/AP Science Educator
- **NEW!!** One $3195 Courtney Wilson GLOBAL EDUCATION Fellowship for a K-12 educator
- Three $1250 Morpho Institute EXPLORER scholarships for K-12 educators

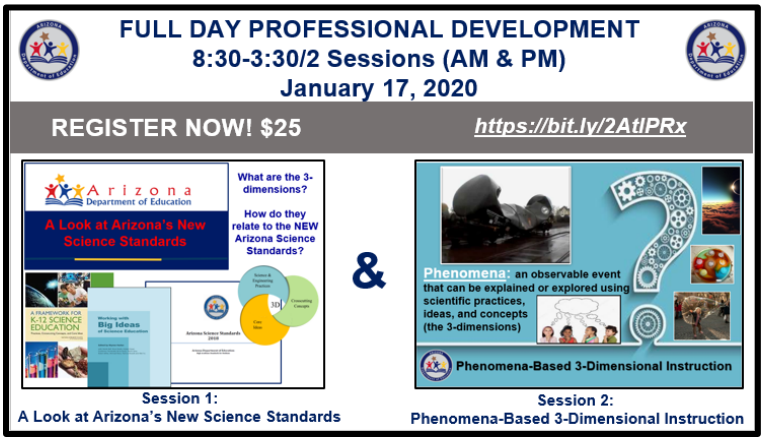
Academy Fee of $2695 includes pre-departure prep, resource kit, & in-country land costs (air is not included). Space is limited to 30 educators. Get the details and download a syllabus and scholarship application at: www.morphoinstitute.org/educator-academy

ASU Fulton Schools of Engineering Summer Camps

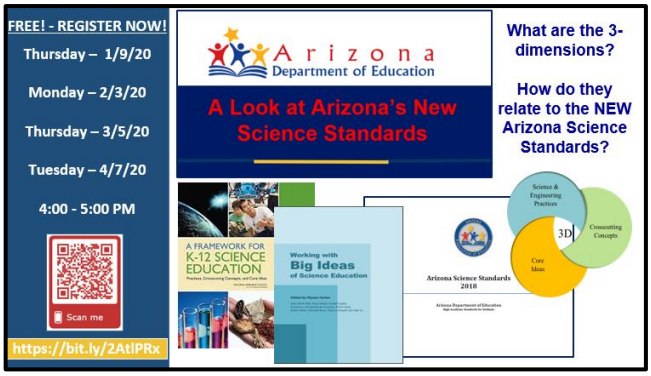
Each year the Fulton Schools of Engineering provides over 30 Summer camps for K-12 students. These camps are led by various K12 teachers that we hire to work two to four weeks depending on the number of camps. This year we thought it might be interesting to see if there were any educators out there who had an awesome idea for a camp and would want to partner with us this summer. If you have a great idea for a summer camp and would be willing to partner with us to develop AND DELIVER the curriculum to our campers this summer, please fill out the form below.. We would love to see ideas around AI, VR, drones or other cool technologies but open to any engineering ideas! Please

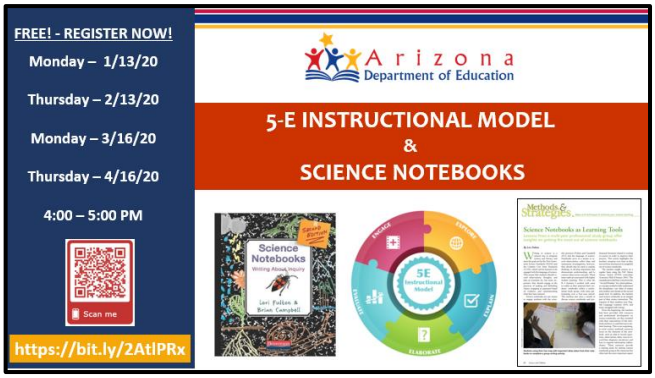
note we already have camps around the themes of FIRST LEGO League robotics, Coding, Gaming, and Circuits. See full list of current camps here https://outreach.engineering.asu.edu/summer-programs/ ***Educators will be compensated for curriculum development and implementation.*** All submissions are DUE- January 10, 2020. **Apply HERE.**

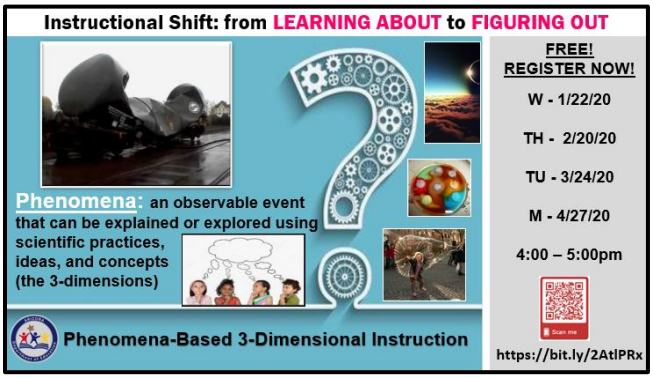
UPCOMING FACE TO FACE PROFESSIONAL DEVELOPMENT



UPCOMING WEBINARS FOR SCIENCE PROFESSIONAL DEVELOPMENT







UPCOMING FACE TO FACE PROFESSIONAL DEVELOPMENT

Description (Link below)	Date	Time	Cost
Introduction to the New Science Standards & Using Standards to Drive Phenomena-Based Instruction	1/17/2020	8:30am-3:30pm	$25
How to Effectively Use the 5-E Instructional Model, Science Notebooks & Student Discourse	2/21/2020	8:30am-3:30pm	$30

UPCOMING WEBINARS FOR COMPUTER SCIENCE PROFESSIONAL DEVELOPMENT

Description *(Link below)*	Date	Time	Cost
A Look at Arizona's New Science Standards	1/9/2020	4:00pm – 5:00pm	FREE
5-E Instructional Model & Science Notebooks	1/13/2020	4:00pm – 5:00pm	FREE
Phenomena-Based 3-D Instruction	1/22/2020	4:00pm – 5:00pm	FREE
A Look at Arizona's New Science Standards	2/3/2020	4:00pm – 5:00pm	FREE
5-E Instructional Model & Science Notebooks	2/13/2020	4:00pm – 5:00pm	FREE
Phenomena-Based 3-D Instruction	2/20/2020	4:00pm – 5:00pm	FREE
A Look at Arizona's New Science Standards	3/5/2020	4:00pm – 5:00pm	FREE
5-E Instructional Model & Science Notebooks	3/16/2020	4:00pm – 5:00pm	FREE
Phenomena-Based 3-D Instruction	3/24/2020	4:00pm – 5:00pm	FREE
A Look at Arizona's New Science Standards	4/7/2020	4:00pm – 5:00pm	FREE
5-E Instructional Model & Science Notebooks	4/16/2020	4:00pm – 5:00pm	FREE
Phenomena-Based 3-D Instruction	4/27/2020	4:00pm – 5:00pm	FREE

**Registration for all events is required. Due to low enrollment, courses are subject to cancellation.*

**** Click here also to register: *https://bit.ly/2AtlPRx***