



UNIVERSITY OF ARKANSAS

UA Center for Math & Science Education 2018 Summer Professional Development

To register, access the links provided in the descriptions.

Unless noted, all workshops will be held on the University of Arkansas campus
at the Center for Math and Science Education

346 N. West Avenue, #202, Fayetteville, AR 72701 V: 479-575-3875

Science

Monday/Tuesday, June 25- 26: Grasping Phenomenal Science (GPS) for Grades 9-12 (Biology): Navigating from Standards to Instruction

Fee \$30; 12 hours PD; 8:30-3:30pm

To register, [access ESCWorks](#) ESC#341446

Experience a new vision for high school science! Engage in phenomenon-based investigations aligned to the new Biology - Integrated course. Student-focused learning through the application of science, math and literacy skills will be highlighted. Labs and materials are new, so previous participants are encouraged to attend. An optional 3rd day is available on June 27 with separate registration, same location (see below). Connections to TESS: 1a, 1d, 1e, 3a-e, 4a, 4e

Wednesday, June 27: Grasping Phenomenal Science (GPS) for Grades 9-12 PreAP Certification

Fee \$15; 6 hour PD; 8:30-3:30pm

To register, [access ESCWorks](#) ESC#341450

This is an optional 3rd day available for preAP certification (June 27, separate registration, same location). Two follow-up PD days will be offered along with opportunities for classroom-level support. This course must be taken in addition to either the high school biology-integrated Grasping Phenomenal Science (June 25-26) or the high school chemistry-integrated/physical science-integrated Grasping Phenomenal Science course (June 28-29). This additional day of instruction meet the requirements of preAP certification as per the Arkansas Department of Education. Follow-up PD days will be offered along with opportunities for classroom-level support. Connections to TESS: 1a, 1d, 1e, 3a-e, 4a, 4e

Thursday/Friday, June 28-29: Grasping Phenomenal Science (GPS) for Grades 9-12 (Physical Science and Chemistry): Navigating from Standards to Instruction

Fee \$30; 12 hours PD; 8:30-3:30pm

To register, [access ESCWorks](#) ESC#341482

Come experience a new vision for the high school science experience! During this two-day opportunity, educators will engage in phenomenon-based investigations aligned to the new Physical Science - Integrated and Chemistry - Integrated course. Student-focused learning through the application of science, math and literacy skills will be highlighted. Labs and materials are new, so previous participants are encouraged to attend. *An optional 3rd day is available for preAP certification (June 27, separate registration, same location). Two follow-up PD days will be offered along with opportunities for classroom-level support. Connections to TESS: 1a, 1d, 1e, 3a-e, 4a, 4e

Monday/Tuesday, July 9-10: Grasping Phenomenal Science (GPS) for Grades 5-8: Navigating from Standards to Instruction

Fee \$30; 12 hours PD; 8:30-3:30pm; Location: NWAESC

To register, [access ESCWorks](#) ESC#341466

Come experience the vision for middle-school science! During this three-day opportunity, educators will explore science phenomena, reflect on instructional strategies, and make connections to the new Arkansas K-12 Science Standards. Student-focused learning through the application of science, math and literacy skills will be highlighted. An introduction to the optional Accelerated Science Course Pathway will be included. All workshop labs and materials will be new, so past participants are encouraged to attend. Two follow-up PD days will be offered along with opportunities for classroom-level support. Connections to TESS: 1a, 1d, 1e, 3a-e, 4a, 4e

Wednesday, July 11: Grasping Phenomenal Science (GPS) for Grades 5-8 PreAP Certification

Fee \$15; 6 hrs PD; 8:30am-3:30pm; Location: CMAESC

To register, [access ESCWorks](#) ESC#345291

This course must be taken in addition to the two day middle school Grasping Phenomenal Science course (July 9-10). All 3 days of instruction are required to meet the requirements of preAP certification as per the Arkansas Department of Education.

Thursday, July 12: 1A, 1B, 1C, Oh My! What do I do with the forms? (grades 5-12)

Registration Fee \$10, 3 hrs PD; 8:30-11:30am

To register*, [access this link](#)

Want to have a Science and Engineering Fair at your school/district but are completely befuddled by all the forms? Join this session for a form by form review that will take the stress out of paperwork! A non-required, followup day will be held in late September for those with students wanting to enter the 2019 NWArkansas Regional Science and Engineering Fair.

July 12: Science Fair 101: Abstract Writing (grades 5-12)

Registration Fee \$10, 3 hrs PD; 12:00-3:00pm

To register*, [access this link](#)

Writing an abstract to explain a science project can be daunting. Learn how to help your students write clear and concise statements within a 250 word limit! A non-required, followup day will be held in late September for those with students wanting to enter the 2018 NWArkansas Regional Science and Engineering Fair.

July 13: Science Fair 101: Data Collection and Analysis (grades 5-12)

Registration Fee \$10, 3 hrs PD; 8:30-11:30am

To register*, [access this link](#)

Finding a topic for a science fair project is tough! Join this session to learn how to guide students into research of their own interest and how to collect/analyze data. A non-required, followup day will be held in late September for those with students wanting to enter the 2018 NWArkansas Regional Science and Engineering Fair.

July 13: Science Fair 101: Displays (and Safety) (grades 5-12)

Registration Fee \$10, 3 hrs PD; 12:00-3:00pm

To register*, [access this link](#)

The display's the thing! Review examples of display boards, learn how best to exhibit data and explore science safety and display regulations. A non-required, followup day will be held in late September for those with students wanting to enter the 2018 NWArkansas Regional Science and Engineering Fair.

Monday/Tuesday, July 23-24: GLOBE Atmosphere (grades 4-12)

Fee \$50; 12 hrs PD; 8:30-3:00pm

To register*, [access this link](#)

Need real-world lab, field, and research-based earth and environmental science content and resource materials to study the dynamics of the Earth atmosphere? Attend this 2 day workshop led by GLOBE program <http://globe.gov> master trainers on the Earth's atmosphere to become a GLOBE certified teacher and part of more than 50,000 teachers from 117 countries participating in the GLOBE program. Explore the possibilities of working in close partnership with NASA and NSF Earth System Science Projects studying and researching the dynamics of Earth's environment as you learn how to take measurements, collect data, and record data through the GLOBE interactive web pages. Lunch, GLOBE Certification, and Atmosphere TG will be provided.

Tuesday/Wednesday, July 24-25: Grasping Phenomenal Science (GPS) for K-4 Teachers

Fee \$30; 6 hrs PD; 8:30-3:30pm; Location: NWAESC.

To register, [access ESCWorks](#) ESC#341968

Come experience the vision for K-4 science! During this two-day opportunity, educators will explore the Arkansas K-4 science standards by engaging in grade-specific investigations. Student-focused learning through the integration of science, math and literacy skills will be highlighted. Two follow-up PD days will be offered along with opportunities for classroom-level support. Connections to TESS: 1a, 1d, 1e, 3a-e, 4a, 4e

Monday, July 30: K-4 GLOBE

Fee \$50; 6 hrs PD; 8:30-3:00pm; Lunch and materials provided.

To register*, [access this link](#)

Explore water, soil, clouds, seasons and Earth systems – NASA GLOBE's 5 investigation areas – with fun, low cost observation and hands-on engagement. Tied to classroom learning activities complementing NGSS-correlated science content covered in five storybooks, K-4 GLOBE is designed to engage teachers and students through literacy and science. The seven science-based storybooks – *All About Earth: Our World on Stage*, *Do You Know Clouds Have Names?*, *The Scoop on Soils*, *Discoveries at Willow Creek*, *The Mystery of the Missing Hummingbirds*, *What in the World Is Happening to Our Climate?* and *What's Up in the Atmosphere* are all designed to introduce key Earth Science concepts by students 'doing' real science. Lunch, GLOBE certification, and workshop materials provided.

Mathematics

Tuesday, July 10: Strategically Using Tools in 7-12 Math Classrooms

Fee: \$25; 6 hrs PD; 8:30-3:00pm; Lunch and materials provided.

To register*, [access this link](#)

Mathematically proficient students are called to use appropriate tools strategically under the Standards for Mathematical Practice. "These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software." This session will analyze various tools that can be used in secondary mathematics classrooms like patty paper, reflecting devices, GeoGebra, Desmos, and others, when grounded in mathematics content standards.

Thursday, July 19: Defining and Developing Number Sense in 7-12 Math Classrooms

Fee: \$25; 6 hrs PD; 8:30-3:00pm; Lunch and materials provided.

To register*, [access this link](#)

Frustrated by the lack of number sense in your students? Do your students seem to either reach for a calculator or just shrug and say, 'I don't know,' when asked simple arithmetic questions? What exactly is number sense and how do we develop it in our secondary students? During this session, progressions of number sense will be analyzed to help define this seemingly difficult goal. Experiences students need in order to develop number sense will also be explored.

Wednesday/Friday, July 25-27: Thinking Mathematically (grades 6-8)

Fee: \$350, 18 hrs PD, 8:30-3:00pm; Lunch and materials provided.

To register*, [access this link](#)

Engage in a comprehensive research-based approach to mathematics instruction based on how students think about math. Story problems and number sentences will be analyzed to determine the mathematical demands and recognize student responses in terms of cognitive development. Participants will assess students' thinking and design problems that will develop students' understanding of the important concepts and skills. Discussions about student work will provide a window into students' thinking, strengthen students' computational fluency and build their capacity for algebraic reasoning.

Monday, July 30: Algebra Tiles (grades 6-11)

Fee: \$10; 3 hrs PD, 12:30-3:30pm

To register*, [access this link](#)

Solving multi-step equations and factoring are two topics that students tend to struggle with in math. Students are in need of a concrete model that introduces these concepts. This PD will utilize Algebra Tiles to solve multi-step equations, to multiply binomials, and factor trinomials.

* Registration is not complete until the registration fee is confirmed by credit card. All registrations are non-refundable. Failure to attend a session will result in full forfeiture of fee.