

NGSS NOW

7 things you need to know about the NGSS this month



July 2017

1 ICYMI: Achieve released PEEC Version 1

Last month, Achieve released PEEC. PEEC is an acronym for the **Primary Evaluation of Essential Criteria for NGSS Instructional Materials Design**. PEEC takes the compelling vision for science education as described in *A Framework for K-12 Science Education*, and as embodied in the NGSS, and operationalizes it for two purposes:

1. to help educators determine how well instructional materials under consideration have been designed for the *Framework* and the NGSS, and
2. to help curriculum developers construct and write science instructional materials that are designed for the *Framework* and the NGSS.

PEEC seeks to focus educators and curriculum developers on the critical innovations within the NGSS and dig deeply into materials to (1) evaluate the presence of those innovations and (2) answer the question "How thoroughly are these science instructional materials designed for the NGSS?"

[Download PEEC](#) for more information. [Click here for FAQs](#). Share your feedback and/or send questions to peec@achieve.org.

2 Featured Standards

This issue of NGSS Now features an example of how certain PEs* could be bundled in order to develop an instructional unit that engages students in science phenomena.

K-PS3-1: Make observations to determine

3 Science Phenomenon

This phenomenon offers teachers a potential way to connect our "Featured Standards" (see #2) to a real-world phenomenon:

On a hot summer day, an owner walked outside with her dog but when they stepped

the effect of sunlight on Earth's surface.

K-PS3-2: Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.*

K-ESS2-2: Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

=====

For a more in-depth look at these NGSS PEs and to search for others, read [this](#).

Need more context? See where these ideas are introduced in [A Framework for K-12 Science Education](#) (pages [120](#), [125](#), and [179](#)).



onto the sidewalk's concrete, the dog yelped and jumped off. The owner felt the asphalt and realized it was extremely hot. She bought booties to protect her puppy's feet, but the puppy refuses to wear them. ([image source](#))



Below are some high-level lines of student inquiry that could help students facilitate their understanding of DCIs related to the featured science phenomenon:

- Why is the concrete hot?
- In addition to the booties, what can the owner do to protect her dog's feet? Design and build a solution to protect the dog's feet from the hot concrete.
- How else do we (humans, plants, animals) change the world around us to protect ourselves?

4

Professional Learning Opportunity: Learn While Teaching

The *Learn While Teaching Project* supports teachers in bringing three-dimensional learning into their classrooms through professional development prior to, during, and following their teaching of research-based NGSS-designed curriculum units. Teachers work with experienced national facilitators in the Next Generation Science Exemplar System (NGSX), an innovative PD environment incorporating intensive face-to-face and virtual study groups supported by online resources providing NGSS classroom cases.

- During Phase 1 of the project (Aug 19-23), teachers will attend a 5-day face-to-face professional learning institute at Northwestern University.
- During Phase 2 (Fall 2017), teachers will teach a six to nine week NGSS-designed unit in their own classrooms.
- During Phase 3 (Winter 2017), teachers will meet as a virtual study group to reflect on their classroom enactments and work on next steps to support the instructional shifts they seek to make.

[Read more and learn how to apply for this opportunity.](#)



NGSS Helps Prepare Future Workforce

By Jennifer Berry

www.comstocksmag.com

June 21, 2017

Our country's diminished STEM literacy and aptitude has misshaped our science and technology workforce and our ability to compete in global markets and economies. A thriving, modern-day workforce depends on scientifically literate workers across all occupations; STEM-based or otherwise. Scientifically literate students also equates to more competent and engaged citizens, which is important as America faces complex issues. [Read more.](#)



Blog: My 'Phenomenal' Journey in Elementary

By Liza Rickey

NSTA Blogs

June 26, 2017

The first time I heard about phenomena was at an NSTA conference a few years ago when a presenter displayed an energy stick, which I now know is a toy used to explore the science of electricity and circuits. In small groups, we experimented with different ways to activate the toy's lights and buzzers, asking many questions and constructing explanations. I quickly learned that phenomena were events that caused students to ask questions and explore underlying explanations and concepts of the unit. It was an engaging and memorable experience to do a lesson that was "flipped" in this way, and I wanted more. The following lessons provide opportunities for students to construct scientific understanding and meaning of phenomena. [Read more.](#)



CU Boulder Researchers Win Recognition in Effort to Prepare the Next Generation of Scientists

www.colorado.edu

June 28, 2017

For nearly 10 years, [the Inquiry Hub](#), or iHub, has been developing and testing a new model for helping schools and districts effectively implement student-centered curricula in mathematics and science. Their latest digital unit in biology ("Why Don't Antibiotics Work Like They Used To?") was recognized by Achieve as "ambitious, comprehensive, and purposefully designed" for the NGSS. Reviewers also noted that, "Students are repeatedly challenged with rigorous content and expected to make important connections between and across storylines. Students also are exposed to and engage in authentic scientific research." This unit will be released to schools and districts in the coming years for consideration of adoption into their curricula. [Read more.](#)

