

NGSS NOW

9 things you need to know about the NGSS this month



September 2016

1 Using Phenomena in the NGSS-Designed Lessons & Units

Phenomena are an essential part of implementing the Next Generation Science Standards (NGSS). But what are phenomena, and how can they be used?

A new resource has been developed for educators to provide guidance on how phenomena can be used in NGSS classrooms to drive teaching and learning. As a companion to the document, Brian Reiser, a professor at Northwestern University and one of the writers of the Framework for K-12 Science Education, conducted a video interview to introduce phenomena and their connection to the NGSS and three-dimensional learning. Both new resources are designed to be a useful guide for teachers as they help students use science to make sense of phenomena in the natural and designed world, or use engineering to solve problems.

[Click here](#) to learn more about using phenomena in NGSS-designed lessons and units and to watch the three-minute video.

2 New EQiP Rubric Version 3.0 is Available

The [EQiP Rubric for Lessons & Units: Science](#) has been revised! The [updated tool, Version 3.0](#), includes a scoring guide for rating the degree to which high quality science lessons and units are designed for the Next Generation Science Standards (NGSS). The latest rubric will be used to evaluate instructional materials for Achieve's new EQiP Peer Review Panel for Science.

Revising the EQiP Rubric for Science was accomplished through multiple cycles of review and feedback from classroom educators and professional learning providers. Their critical feedback was compiled with the expertise of the authors of the previous versions of EQiP to ensure increased clarity and utility.

Those familiar with the previous rubrics, Version 1.0 and Version 2.0, will notice that some of the criteria have been revised and reorganized. A complete description of the changes can be found [here](#).

3 ICYMI: Achieve launches EQiP Peer Review Panel: Science

Achieve has announced the creation of the EQiP Peer Review Panel for Science. The goal of this

group is to identify high-quality lessons and units that are designed for the Next Generation Science Standards (NGSS).

Building on the work of the [peer review panels for mathematics and English Language Arts](#), the science peer reviewers will evaluate lessons and units in their area of expertise and, collectively, will cover grades K-12. Any lessons and units that are determined to be of high quality will be publicly shared so that educators and curriculum developers across all states and districts can benefit from these materials.

The application process is open until September 23, 2016. Applicants will be selected based on their ability to make consistent, criterion-based evaluations using [Version 3](#) of the EQuIP Rubric for Science. Please [click here](#) to apply online.

For answers to common questions about the application process or timeline, please read this [FAQ for the EQuIP Peer Review Panel: Science](#).

4 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.

[MS-PS4-2](#): Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

[MS-ESS1-1](#): Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.

As they implement the standards, teachers, principals, and district leaders might consider the questions below when discussing how to align instruction to the standards:

- a. What type of lessons can teachers develop to help students build toward this bundle of PEs?
- b. How could a classroom discussion about this month's "Science

5 Science Phenomenon

This month's Science Phenomenon is focused on the lunar eclipse and geared toward middle school students. This illustrative example offers teachers a potential way to connect our Standards of the Month (September 2016) to a real-world phenomenon that students can ask questions about:

Sometimes the moon looks red.



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

- Why does it look red?

Phenomenon" (see right) help engage students around this bundle of PEs?

c. How can principals better evaluate and support teacher leaders as they work to support their colleagues?

**For a more in-depth look at these NGSS PEs and to search for others, read more [here](#). Need more context? See where these ideas are introduced in [A Framework for K-12 Science Education](#) (pages [133](#) and [173](#)).*



- How do we predict when this will happen next?
- If the moon is in the earth's shadow, why can we still see it?
- Is the moon ever red when there's not a lunar eclipse? How is the cause of that color similar or different to the red color during a lunar eclipse?



Featured NGSS Question of the Month

Q: It looks like I could use the NGSS evidence statements as lesson plan outlines, with the first

section as the introduction and the last section as the evaluation. Do you think that would work?

A: Evidence statements are an "unpacking" of the performance expectations (PEs), which describe what students should know and be able to do at the *end* of instruction. Because the goal of instruction is not to "teach" the PEs, but rather to give students rich experiences that would allow them to meet or exceed the PEs, classroom experiences and tasks should focus on developing students' three-dimensional understanding and practice in meaningful ways. In assessment and especially in instruction, varied and rich experiences should be developed that may differ from the exact PEs but remain congruent with the intent and expectations of the NGSS.

The evidence statements are also not intended to be used as a sequential list. Since evidence statements give educators information about what to look for in student performance at the end of instruction. It is possible that students would demonstrate the 'last' piece of an evidence statement (e.g., the 'connections' of a model, 'reasoning and synthesis' of an argument) as their primary communication. Educators will be able to look for evidence of the other parts of the evidence statements in what students do. For example, if students provide an argument with reasoning and synthesis, the claim, evidence, and evaluation may be embedded in the reasoning and synthesis, rather than being called out separately.

If you would like to have your question featured in a future NGSS Now newsletter, please contact ngss@achieve.org.

7 Featured Resource: #NGSSChat

#NGSSChat is an online forum for educators to learn and share insights around the Next Generation Science Standards (NGSS).

Each month, on the 1st and 3rd Thursdays, educators from across the nation gather online to discuss and reflect upon quality science instruction. The hashtag #NGSSChat, via Twitter, provides access to learning support from NGSS experts, peers, and scientists with rich and diverse backgrounds and contributes to educators' on-going, personalized professional growth. [Learn more.](#)

NGSS in the News

8

[SFUSD unveils innovative NGSS newsletters for teachers](#)

www.sfusdscience.org
August 31, 2016

The San Francisco Unified School District (SFUSD) Science Team is committed to supporting the practice of daily science experiences for students. As a new school year begins, the district has unveiled a new series of grade-banded, NGSS-themed newsletters that are designed to help teachers transition to the California Next Generation Science Standards

9

[Mars simulation ends after a year on Hawaiian mountain](#)

By Greg Toppo
USA Today
August 29, 2016

Six scientists who lived for a year inside a dome on a Hawaiian mountain emerged Sunday from the experiment, meant to simulate a trip to Mars. The NASA-funded study was the second-longest of its kind, following a Russian mission that lasted 520 days.

During the simulation, run by the University of

(CA NGSS).

See some examples in the links below:

- [Elementary School](#)
- [Middle School](#)
- [High School](#)

These newsletters can serve as helpful templates for other districts and schools seeking ways to effectively frame important NGSS information and opportunities for staff at the elementary, middle, and high school levels

Hawaii, the scientists could go outside only while wearing spacesuits as they worked to help researchers understand how the isolation of a deep space mission would impact humans. The experiment took place on isolated, rocky Mauna Loa, on the island of Hawaii. It was part of the HI-SEAS (Hawaii Space Exploration Analog and Simulation) program, the fourth and longest HI-SEAS mission to date. [Read more.](#)

