

NGSS NOW

9 things you need to know about the NGSS this month



May 2017

1 FEATURED RESOURCE: Professional Learning Facilitator's Guide for the EQuIP Rubric for Science

A new resource is available to help guide professional learning on NGSS Instructional Materials and determine how to evaluate their alignment and quality. The professional learning outlined in the new [Professional Learning Facilitator's Guide](#) will help educators:

- Use the EQuIP Rubric (Version 3.0) to review science lessons and units,
- Provide effective feedback and suggestions for improvement to developers of instructional materials,
- Identify model or exemplar lessons and units, and
- Inform the development of new instructional materials.

As addressed by Joe Krajcik, professor of science education and director of the CREATE for STEM Institute at Michigan State University, in this [NSTA blog post](#): "Many developers and publishers of science materials claim that their materials align with the NGSS and feature the NGSS performance expectations. And while some publishers will make legitimate attempts at modifying their materials to do an appropriate alignment, [educators] will need to have the appropriate tool to judge which materials better represent the intent of the NGSS and which materials just really don't match up."

The newly released facilitator's guide consists of an immersion and introduction module followed by 10 modules that may be used separately or with two or more modules grouped together. All modules include one or more specific learning outcomes and are designed sequentially to build participants' proficiency in using the EQuIP Rubric (Version 3.0). After completing the introduction and first nine modules, participants will apply their learning and complete a culminating task in Module 10.

Please note that most modules will take 15 minutes to an hour to complete; however, Modules 6 and 10 will take longer. Timing is important, so Craig Gabler, regional science coordinator and co-director of LASER Alliance, explains more about thoughtful timing of the training in [this video](#).

The Professional Learning Facilitator's Guide is available to download [here](#). All EQuIP for Science-related materials can be accessed online [here](#). Please contact Matt Krehbiel (mkrehbiel@achieve.org) with questions or for additional support.

2 ICYMI: District-level resources available for the NGSS

For most teachers, schools, and districts, the NGSS represent a major change from current practice and the steps required for a successful transition will depend on local context, existing resources, and current and potential capacity. Thanks to generous support from the [S.D. Bechtel, Jr. Foundation](#), Achieve has designed resources to help school and district leaders effectively manage their transition to the NGSS.

These resources are intended to showcase a variety of approaches that educators can take when, for example, developing district-level implementation plans, informing decisions on how to monitor progress and measure success, creating professional learning pathways, and/or designing NGSS-aligned instructional materials. Districts should always consider what aspects of these approaches make sense for their context, and Achieve wants to know how these resources work with your specific experiences.

Educators and district leaders are encouraged to share feedback with ngssdistricts@achieve.org about their experiences and which parts of these resources are most helpful. Based upon those recommendations, Achieve hopes to provide better support and resources to meet the local needs and demands of school districts.

To download the currently available district-level resources, [click here](#).

3 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.

4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

4-LS1-2: Use a model to describe that animals receive different types of information through senses, process the information in their brain, and respond to information in different ways.

Teachers Note: For this bundle, it could be helpful to remind students of their 3rd grade instruction related to [3-LS2-1](#).

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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 [143](#) and [145](#)).

4 Science Phenomenon

This phenomenon offers teachers a potential way to connect our "Featured Standards" (see #3) to a real-world phenomenon:

After camping in the wilderness of Greenland, photographer [Stefan Forster](#) finally came upon the prize he'd been searching for - a herd of Musk oxen. As he approached the shy creatures to get a clearer image, the adult oxen suddenly sprang into action; forming a semicircle around the calves.



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

- How did the oxen know that there was sudden movement? What senses detected the movement? How did information from the eyes result in a change in movement of the body?



- Why might the musk oxen protect their young by building a wall with their heads facing out? What features help protect the oxen?

5 Engaging the Community with Family Engineering Nights (Blog Post)

By Liza Rickey
Teaching Channel
April 10, 2017

If you're like me, involvement with families consists of newsletters, emails, volunteering in the classroom, attending performances or academic celebrations, and conferences. As I started analyzing and reviewing how I was engaging families in the new science standards, I quickly realized this was purely a one-way system. Families were merely an audience for whatever I deemed relevant.

As I researched more about the traditional family involvement paradigm I'd been adhering to for so long, I realized I was missing an important and critical opportunity to have families as partners. So I started unpacking my beliefs and biases about families, and I thought about ways I could reframe and reshape what I've been doing. I was ready to move beyond the status quo and start pushing my practices to move out of my comfort zone! Here's how we did it - and you can do it too! [Read more.](#)



Op-Ed: New Hampshire Teachers Advocate for Evidence-based Science

By Michelle Mitnitsky and Daniel E. Reidy
Concord Monitor
April 27, 2017

The New Hampshire Science Teachers Association strongly supports the New Hampshire Board of Education's decision in 2016 to adopt the Next Generation Science Standards as the New Hampshire College and Career Ready Science Standards and urges our policy makers to stay the course.

NHSTA teachers worked for years learning about, reviewing, suggesting changes and advancing instruction with the NGSS. After an exhaustive review process, most districts in our state were already witnessing how the NGSS minimum standards raise the bar for science education across the grade levels.

Public education supports our democracy, where informed citizens make decisions that benefit our country. Science teachers strive to equip our students with the skills to make knowledgeable decisions based on evidence. Our instructional strategies are focused on engaging students in problem-solving using current knowledge and theories, thus empowering them to make good choices. [Read more.](#)



Grad Requirements: From Know Science, To Do Science, To Automate Science

By Tom Vander Ark
Education Week
May 1, 2017

The Teton Science Schools use the NGSS as a guide for their school network, the graduate program and its science field education courses. "We have a strong emphasis on science and engineering practices through our place-based education core of inquiry and design thinking," said Nate McClennon, VP of Education and Innovation. "We preach often that science is a verb (action) rather than a noun (collection of facts). Too many students leave science classes with a belief that science is only a set of facts to be memorized."

At Teton Valley Community School, the middle school is competency based and project driven. NGSS guides the competencies, which then are addressed during the projects. "All of our graduate students are taught to use the inquiry process (scientific method) and design thinking as a teaching approach for place-based education," said McClennon. This framework is beginning to be systematically applied to all their programs across all levels. [Read more.](#)

A horizontal line of green dots.



School District Receives New Course Materials for NGSS

By Alisha Roemeling
The Register-Guard
May 5, 2017

High school students' science quotient could rise because the Eugene School District soon will receive new science curriculum materials following a unanimous school board vote adopting the new coursework. The board approved the adoption of middle and elementary school curricula in April 2016. It had been 19 years since students in grades K-8 received new science curriculum materials.

The district formed a science curriculum adoption team last year to establish a sequence for students to follow that would adequately incorporate all NGSS standards and still allow for students to choose a science elective. The team included high school science and special education teachers, elementary and middle school teachers, high school building administrators and district staff members, who decided on two sets of high school curricula for teachers to test.

Between October 2016 and January 2017, 16 high school science teachers tested and evaluated two units from two publishers' science course materials and provided feedback to the adoption team. The adoption team settled on four different programs for the five courses. [Read more.](#)



Op-Ed: Hands-on Science in our Schools

By Terry d'Selkie
Ukiah Daily Journal
May 5, 2017

For decades, the educational system has been moving away from lecture-based learning toward a more hands-on approach, fostering curiosity and a deeper sense of understanding. As you can imagine, in the classroom, creating opportunities for each student to experience learning is far more difficult than simply feeding them information, but happily, we have local teachers up to the challenge.

Many local elementary school students participate in our science-based garden program. They actively participate in earth and life sciences as they learn about organic gardening, insects, plants, energy, climate, soil, weather and the water cycle, among other topics.

At the middle school level, science is changing from covering one domain at each grade level to a more integrated approach, to show students how different areas of science influence one another. This approach blends earth science, life science, and physical science, as well as engineering and mathematical concepts, allowing students to make connections between science and other disciplines. When students arrive at high school, they have several options for rigorous science courses, including advanced placement classes.

At UUSD, our science educators are integrating the new NGSS standards by preparing new curricula and undergoing professional development. This year, students in grades 5, 8, 10, and 12 are piloting the new statewide standardized test. Our goal is to have our amazing elementary teachers work with science specialists to thoughtfully and easily deliver more science learning opportunities to all grade levels, preparing students for the extensive and complex science they will be expected to master at the higher grade levels.

[Read more.](#)