

NGSS NOW

9 things you need to know about the NGSS this month (and a  science fact)



March 2015

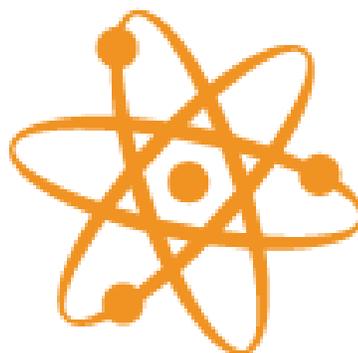
Resource Updates

1

The [NGSS EQulP Professional Learning Facilitator's Guide](#) is now available. It is a series of 10 modules that were designed to provide guidance on building the capacity of educators and education leaders to use the EQulP Rubric for Science. The modules were developed by professional development experts, writers of the [EQulP Rubric for Science](#), and classroom educators. The rubric has been used by educators and developers of instructional materials to review science lessons and units, to provide effective feedback and suggestions for improvement to developers of instructional materials, and to identify how to transition current materials to align to the NGSS. A few resources associated with the professional learning modules are not yet available, but the facilitator's guide and associated materials will still be helpful in supporting those interested in facilitating professional learning on the EQulP Rubric for Science.

2

The annual NGSS Network Leadership Conference just wrapped up in San Francisco, California. The conference brought together state teams (e.g., state education agency staff, district leadership and key stakeholders) to work on implementation planning. Look out for the powerpoint presentations and other resources associated with the conference to be posted to nextgenscience.org in the coming weeks.



3 Standard of the Month

[HS-ETS1-2](#): Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering. For a more in-depth look at this NGSS performance expectation 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](#) (page 208).

4 QUESTION OF THE MONTH

Q: I have seen the disciplinary core ideas (DCIs) in the Framework and the NGSS referred to as "content." Are DCIs and content the same thing?

A: The DCIs are often referred to as the content of the NGSS, but equating the DCIs with content misses two important and distinguishing aspects of the NGSS. First, DCIs are not the sole source of content within the Framework or the NGSS. There is content, or material to know, within the practices and crosscutting concepts as well as within the DCIs. Second, the DCIs go deeper than does traditional content. The DCIs are the fundamental science knowledge that students need to explain phenomena. As such, the DCIs had to meet at least two of the four criteria listed below to be included in the Framework and the NGSS, while traditional science content did not always have to meet such criteria:

- * Have broad importance across multiple sciences or engineering disciplines or be a key organizing concept of a single discipline;
 - * Provide a key tool for understanding or investigating more complex ideas and solving problems;
 - * Relate to the interests and life experiences of students or be connected to societal or personal concerns that require scientific or technological knowledge;
 - * Be teachable and learnable over multiple grades at increasing levels of depth and sophistication.
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5 Highlighted Resource

Interested in learning more about the implications of the NGSS science and engineering practices on instruction, assessment, and professional development? Check out [this article](#) by Richard Duschl and Rodger Bybee.



6 NGSS in the News

[Linden, Rahway prepare for new science standards](#)

by Michelle H. Daino, MyCentralJersey.com
February 12, 2015

"Cindy Apalinski and Anjanette Highsmith remember a time when learning about science merely meant pouring over textbooks and handing in lab reports with minimal discussion about the practices involved. They couldn't be more enthused for their students who will soon have the opportunity to embrace a deeper, hands-on experience, thanks to the Next Generation Science Standards.

7 Key Message for the Science Education Community: Three-Dimensional Learning

A key difference between students learning the "content" encompassed by previous sets of science standards and students understanding the content in the NGSS is that, in NGSS-aligned instruction, learning is three-dimensional. Students develop a deep understanding of the DCIs through their application via the practices and crosscutting concepts. With systems aligned to previous sets of standards, the goal of instruction was often for students to memorize content. In contrast, in systems aligned to the NGSS, the goal of instruction is for students to be able to explain real-world phenomena or to design solutions using their understanding of the DCIs through the practices and the crosscutting concepts.



**SCIENCE
FUN FACT**

NASA's Solar Dynamics Observatory has kept a 24/7 vigil on the sun for the past five years and has collected 2,600 terabytes of data. Watch [this composite video](#) to see some of the highlights.

Opinion

8

[Teachers can get plenty of help in implementing standards](#)

by Tricia Shelton
February 19, 2015

"The Next Generation Science Standards (NGSS) and the Framework for K-12 Science Education articulate a beautiful vision for our students. The overarching goal of the standards is a coherent and rigorous science education for all students that enables them to be critical consumers of science and attain the scientific literacy necessary to be informed citizens, able to engage in public discourse and decision-making on issues of science, engineering, and technology."



9

[Why Chevron is Helping Fund STEM Education](#)

by Tim Bjarin
February 23, 2015

"Over the last year, I've become more interested in the Maker Movement and programs that focus on STEM education - science, technology, engineering and math. Like many people, I believe the U.S. education system needs to do more to get kids interested in math and science, as technology sits at the heart of new job creation and is impacting our lives in ways none of us could have imagined 50 years ago."

