


# NGSS NOW

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



July 2016

## 1 New Resource: NGSS Example Bundles and Guide

The recently-released [NGSS Example Bundles](#) resource helps explain the process of organizing the standards for coherent instruction and is intended for curriculum developers, including educators and commercial publishers. This resource features sample bundles for each grade level and, together with the [NGSS Example Bundles Guide](#), can provide greater clarity to curriculum developers as they envision the process of creating the full range of aligned instructional materials that schools and districts need for implementation.

Looking ahead, the full suite of example bundles will be released in stages over the next few months and will ultimately cover all grade levels. Each release cycle will include information geared toward different grade levels to ensure that curriculum developers for science have a broad set of examples to consider in preparation for the 2016-17 school year.

## 2 Resource: New STEM Teaching Tool on Designing Assessments for Emerging Bilingual Students

A group at the University of Washington has developed [practical tools](#) to support STEM teaching. The tools are authored and reviewed by teachers and researchers, so each one leverages knowledge from practice and research to inform how to teach STEM subjects.

One of the newest tools on the site is a brief entitled "How to design assessments for emerging bilingual students," which describes ways to support students whose everyday language is not used in the classroom. The brief is available online [here](#).



## 3 Standards Bundle of the

## 4 Science Phenomenon

## Month

Here's an example of how high school PEs\* could be bundled in order to develop an instructional unit that engages students in science phenomena.

[HS-ESS2-2](#) Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

[HS-ESS3-1](#) Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

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 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](#).

This month's Science Phenomenon is geared toward high school grade students. This illustrative example offers teachers a potential way to engage students in lines of inquiry that lead to the Standards Bundle of the Month (see left):

*In the first half of 1993, a "perfect storm" of climatic and weather events sent a record amount of water flooding through the Upper Mississippi River Drainage Basin.*

Context for the teacher: In the [summer of 1993, rainfall exceeded 12 inches](#) across the northern plains and the central United States. This rainfall was approximately 200-350 percent of the normal amount experienced in that region.



([CBS St. Louis](#))

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

- How likely are catastrophic flood events like the 1993 flood to reoccur?
- What information is needed to predict a flood?
- How should the public use information about the likelihood of floods?

To see some additional ways that educators are engaging students with phenomena, go [here](#) and [here](#).



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QUESTION  
OF THE MONTH



**Q:** What is a Storyline and how can it help me write NGSS units?

**A:** The NGSS writers included some introductory material in each grade level or grade band set of standards to describe an overview of each of the three dimensions within the standards, and these overviews were titled "Storylines". For example, the introductory material for the standards arranged by DCIs is [here](#).

However, the term "storylines" is also used in another way in NGSS implementation. As described on the website [nextgenstorylines.org](http://nextgenstorylines.org), "a storyline is a coherent sequence of lessons, in which each step is driven by students' questions that arise from their interactions with phenomena." [Thinking through storylines](#) can be an effective way to begin developing learning sequences for the NGSS.

[This presentation](#) by Brian Reiser et al gives more information about storylines.



SCIENCE  
FUN FACT

The city of Beijing is sinking at a rate of up to 4 inches per year due to an increase in population and reduced groundwater reserves.

([Los Angeles Times](#))

## NGSS in Educator Blogs

6

[What about the stages of mitosis?](#)

By Peter A'Hearn, *California Classroom Science*  
June 20, 2016

"Our teaching under NGSS should be anchored in specific real world questions or problems so as not to be vague. A teacher could start with the

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[New science standards: Learning from educators who have implemented them](#)

By Michael Fumagalli, Patty Whitehouse, Tricia Shelton, and Michael Novak  
*Iowa Department of Education*  
June 13, 2016

problem of a genetic disease caused by mistakes in mitosis. This is true of many cancers. Using this context, students would learn as many details as needed to understand the problem and model their understanding. It's not hard to see how several performance expectations could be bundled in a unit that is centered around genetic diseases."

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"I went on a journey that completely transformed my classroom in a seemingly indescribable way. My students who were typically bored were now engaged because they were meaningfully pursuing answers to their own questions. Anything I, personally, had grown accustomed to had been replaced by newfound energy and enthusiasm. I was excited about teaching again."

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## NGSS in the News

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[In elementary education, 'doing science' rather than just memorizing it](#)

By John Tulenko of *Education Week*, reporting for *PBS NewsHour*  
June 21, 2016

"There's a lot of really good stuff in [the NGSS]. Every standard is a performance task. It's not, the child needs to memorize these things. It's the student needs to be able to do some pretty intense stuff. We are analyzing, we are critiquing, we are creating, we are actually doing the science."

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[Survey: Students want more hands-on science instruction](#)

By Tara García Mathewson, *EducationDive*  
June 13, 2016

"The Next Generation Science Standards encourage more hands-on learning opportunities for students as well as experiences that connect instruction to real-world scientific inquiry."

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