

NGSS NOW

8 things you need to know about the NGSS this month



April 2017

1 NGSS Parent Guides are available!

Achieve today released a suite of **NGSS Parent Guides** to illustrate how the standards are a powerful foundation to help students build a cohesive understanding of science over time. The new guides were developed and designed based on feedback from parents and educators in NGSS-adopted states and districts, and are now available for **Grades K-2, Grades 3-5, Grades 6-8 and Grades 9-12**.

The guides are intended to be disseminated primarily at the state and district levels to help ensure that parents gain a better understanding of the local shifts to new science standards.

Key features of the guides

- Overview of the vision and promise of the Next Generation Science Standards.
- Clear, user-friendly examples of ways that students should be able to demonstrate greater capacity for connecting knowledge across, and between, the physical sciences, life sciences, earth and space sciences, and engineering design.
- Highlighted examples based on information outlined in the NGSS performance expectations (PEs) for each grade band. Examples are not intended to be prescriptive of what will be taught in individual schools or classrooms.
- Comparison charts that demonstrate how some classroom activities will be different than the past with NGSS implementation.
- Parents are strongly encouraged to speak directly to their child's teacher(s) and principal(s) to learn how individual schools and classrooms are implementing the standards.

Also available are **modifiable PDF versions of each parent guide**.

This critical feature offers states and districts the opportunity to edit and better customize the guides for their needs. For example, SEAs and districts can add logos or the name of their local science standards to the guide, as well as highlight their own websites to provide additional information about local implementation plans, timelines, and goals.

[Access both the general and customizable PDF versions of the NGSS Parent Guides.](#)

Feel free to contact awesson@achieve.org for more information or to request support when

2 New District-level Resources for the NGSS

The resources featured below were developed by Achieve and are designed to help school and district leaders effectively manage the transition to the NGSS. This work was made possible by generous support from the [S. D. Bechtel, Jr. Foundation](#).

- **NGSS District Implementation Indicators:** This document highlights some common indicators or metrics of successful implementation, as well as some concrete actions, that a district can use to monitor progress toward their NGSS implementation goals.
- **Lessons Learned from the NGSS Early Implementation Districts:** Achieve interviewed nine of the ten districts participating in the [California K-8 Early Implementation Initiative](#) and captured their experiences transitioning to the NGSS in two critical implementation areas: professional learning and instructional materials.

Both of these district-level resources can be downloaded [here](#).

3 Resources for Professional Learning

Below are some webinars and a report that can be useful during preparations for professional learning on the NGSS.

- **Webinar:** *How do I promote student modeling?* This NSTA-sponsored web seminar is scheduled for April 12, from 6:30-8:00 pm EDT, and is designed for teachers, administrators, curriculum developers, and professional learning providers. The presentation will explore some effective ways for educators to help students make sense of phenomena by developing their own models to explain the world. [Learn more and register now for the webinar.](#)
- **Archived Webinar:** *How do I select phenomena to motivate student sense making?* This NSTA-sponsored web seminar was held on March 15th and was presented by Tricia Shelton, High School Science Teacher and Teacher Leader in Boone County Schools in KY, and Ted Willard, Director of NGSS@NSTA. The presentation explored three-dimensional teaching and learning, the explanation of phenomena and how to choose phenomena for the classroom, and how to encourage students to make sense of them. [Learn more and view a recording of the webinar.](#)
- **Upcoming Webinars:** NSTA has two upcoming web seminars to explore [Student Discourse](#) (May 10th) and [Developing Storylines](#) (July 12th).
- **New Report:** *Scaling Up Three-Dimensional Science Learning Through Teacher-Led Study Groups Across a State.* A new report by the American Association of Colleges for Teacher Education (AACTE) describes a two-pronged program for scaling three-dimensional science PD across an entire state. The report presents analyses of teacher learning, including shifts in 3D science, beliefs, and pedagogical content knowledge that supports 3D science teaching, and considers implications for scalable design approaches for supporting science teacher learning. [Download the report.](#)

4 Resources for Instructional Support

[STEM Teaching Tools](#) released three new practice briefs in March that address common challenges in science classrooms. The recommendations outlined in these resources can be implemented by teachers, principals, and district leaders during NGSS implementation.

- [Practice Brief #46](#) explores, "How to define meaningful daily learning objectives for science investigations." This brief helps teachers identify a learning target or objective to post on the wall (a common requirement for educators) that doesn't "give away" what students should be figuring out themselves throughout a lesson. It is important for teachers and administrators to come to consensus around developing and using objectives that are consistent with three-dimensional learning.
- [Practice Brief #47](#) explores, "How to promote equitable sense making by setting expectations for multiple perspectives." This brief promotes equitable learning and encourages educators to solicit, clarify, and consider various perspectives when students are making sense of phenomena during classroom instruction. It is important for educators to support all students as they develop a shared understanding of the different perspectives in the group.
- [Practice Brief #48](#) explores, "How can teachers guide classroom conversations to support students' science learning?" This brief considers how educators can facilitate and scaffold student conversations as a way of learning about student ideas and encouraging the use of scientific language. Educators can use these suggestions to scaffold student discussions and then reflect on what they have learned to inform next steps in their instruction.



Q: Are there any video examples of how elementary teachers can use the NGSS to support language development for multicultural classrooms?

A: One example can be found in [this video](#) from Beaver Acres Elementary School in Oregon. The video shows 4th grade students exploring a locally relevant phenomenon and using evidence to share their thinking and reasoning. The teacher encourages students to take an active role in designing the investigations for this unit and they try to solve the mystery of the phenomenon. The teacher also uses a variety of supports to engage the different learners in her classroom.



It may not be apparent while watching the video but many of the students come from homes where Spanish, Chinese, Arabic, or Vietnamese is their family's primary language. This video helps to illustrate the role that language plays in science classrooms and how the NGSS practices can help improve students' language skills. [Watch the video.](#)

6 Embracing new ways of teaching science and language with English learners

By Dr. Okhee Lee
Education Dive
March 17, 2017

Student demographics across the U.S. are changing, and English learners make up a fast-growing subset of the student population. For the 2013-14 school year, the latest available information, English learners constituted nearly 10 percent of public school students, or an estimated 4.5 million students.

Learning academic content can be a challenge for students who have not yet mastered the English language, especially when it comes to science. But too often, instruction with English learners focuses on the development of vocabulary and grammar rather than authentic engagement with science disciplines. English learners cannot wait until they have mastered the English language to begin learning science. [Read more.](#)

7 Engineering is making headway in schools

By Liana Loewus
Education Week
March 28, 2017

Engineering is getting more attention in K-12 classrooms, especially in those states that have adopted the Next Generation Science Standards, according to [an analysis of national test data.](#)

[Change the Equation](#), a nonprofit group that mobilizes the business community to improve STEM learning, looked at data from surveys administered to 4th and 8th grade teachers and students as part of the 2015 National Assessment of Education Progress (NAEP). The group

wrote about the results in [two blog posts](#). [Read more](#).



3D Assessment: The future is here

Science Magazine

March 31, 2017

Science education reforms for kindergarten thru 12th grade focus on three-dimensional learning, comprising scientific and engineering practices, crosscutting concepts, and disciplinary core ideas. These reforms also exist in undergraduate STEM programs, and faculty interested in bringing 3D-learning to their classrooms need a way to assess student learning. *Laverty et. al.* have developed the Three-Dimensional Learning Assessment Protocol (3D-LAP) for use in introductory biology, chemistry, and physics courses at the undergraduate level. [Read more](#).

