

NGSS NOW

7 things to know about quality K–12 science education in **September 2021**

1 Two New Middle School High-Quality Units Posted



In OpenSciEd Unit 7.2: *How Can We Use Chemical Reactions to Design a Solution to a Problem?* students make sense of the anchoring phenomenon — a flameless heater in a Meal, Ready-to-Eat (MRE) that provides hot food to people by just adding water. Students then use their learning to develop their own homemade heater design by engaging in engineering design processes. The unit was awarded the NGSS Design Badge by the [NextGenScience Peer Review Panel](#).

See the unit and the corresponding EQUIP Rubric for Science evaluation report [here](#).



In OpenSciEd Unit 6.5: *Where Do Natural Hazards Happen and How Do We Prepare for Them?* student learning is anchored around the 2011 Great Sendai or Tōhoku earthquake and subsequent tsunami that caused major loss of life and property in Japan. Through this anchoring phenomenon, students think about ways to detect tsunamis, warn people, and reduce damage from the wave. Then, students consider combinations of engineering design solutions and technologies to mitigate the effects of tsunamis. The unit was awarded the NGSS Design Badge by the [NextGenScience Peer Review Panel](#).

See the unit and the corresponding EQUIP Rubric for Science evaluation report [here](#).

2 NextGenScience Blog Post: Are SEPs in the Science Instruction Cake Batter or Just Sprinkled on Top?

What does it look like for students to progressively develop science and engineering practices? This inaugural post from

On the Same Wavelength Blog

This blog dives into areas of curricular design not explored elsewhere – questions that arise in our materials review work, topics debated in the field, and anything else on our mind.



Are SEPs in the Science Instruction Cake Batter or Just Sprinkled on Top?

What would it look like for students to progressively develop science and engineering practices?

By Jennifer Childress Self | September 9th, 2021

Over the last decade, we've all shifted from focusing on inquiry skills to defining specific science and engineering practices (SEPs). We've seen the work of engaging students in SEPs explode in a good way. It's becoming normal for students to use models to describe what is going on in a phenomenon or to use claim-evidence-reasoning [...]

NextGenScience's new [On The Same Wavelength](#) blog explores the importance of attending to the development of both ideas and practices in the design of materials. Each *On the Same Wavelength* blog post will dive into areas of curricular design not explored elsewhere — questions that arise in NextGenScience's materials review work and topics debated in the field.

See the post and follow the blog [here](#).

3

Two New STEM Teaching Tools



Building Family-Centered Models for Science Education through Learning in Places

STEM Teaching Tool #77 provides research, guidance, and resources on how family and home-based activities can be leveraged to develop collaborative scientific sense-making outside of the classroom. The tool provides guidance on strengthening the coherence of learning from the classroom to students' homes.

See the tool [here](#).



Navigating the Political Dimensions of Climate Change Teaching and Learning

STEM Teaching Tool #78 can support educators and school leaders to address the political nature of climate change while students are learning the ideas behind it in the science classroom. The tool provides context on why climate change is sometimes a political topic in the education field and shares resources and recommendations on how educators and leaders can continue teaching the subject, especially through the lens of socio-historical issues in a local context.

See the tool [here](#).

4

Webinar: Making Science Education Meaningful Through Designing Authentic Earth and Space Science Learning to Reach All Students

Kicking off the 2021–2022 NGSS-ESS Working Group webinar series, this webinar features speakers from [Phenomena for NGSS](#) and [NextGenScience](#) discussing how Earth and space science instruction can be designed

in meaningful, authentic ways that more effectively engage all students. The webinar will be held today, September 9 at 4:00 p.m. ET, and the recording will be posted shortly after.

Register [here](#) and see the webinar recording on the AGI YouTube Channel [here](#).



5 Preparing Day-One Ready Teachers



EdReports and the National Center for Teacher Residencies share early observations and lessons learned from a pilot program rooted in curriculum literacy for new educators. The program worked to support future teachers with the ability to use high-quality materials, an uncommon design for teacher preparation programs.

Read the findings [here](#).

6 Using COVID to Change Science Education

“The idea of how can we address societal inequities in science education is kind of central to what we do and COVID created an opportunity. ... (COVID is) something that deeply affected the lives of students, not only in Rochester, but all over the country and created inequities and showed inequities,” says Eleanor Coonce, a science teacher in the Rochester City School District. “So, it was almost a perfect anchor point for us to take and run and create a justice-centered science unit to kind of kickstart the work of doing that across studies.”

See the Rochester Beacon article [here](#).

7 Seeking Initial Public Comment on the NAEP Assessment Framework

The National Assessment of Educational Progress (NAEP) Science Assessment Framework, used to develop the 2019 NAEP Science Assessment and Report Card, was last revised in 2005. The National Assessment Governing Board is initiating a preliminary review of the current NAEP framework to determine if revisions are necessary to develop new assessment questions and recommendations for stakeholders in the science education field.

See the current NAEP Framework and call for public comment [here](#).

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