

NGSS NOW

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

1 High Quality Unit Posted

In the OpenSciEd Unit 8.4, *How Are We Connected to the Patterns We See in the Sky and Space?*, students observe the biannual pattern of the Sun setting perfectly aligned between buildings in New York City. They begin developing models for the Earth-Sun and Earth-Sun-Moon systems that explain some of the patterns in the sky, and then investigate a series of related phenomena motivated by their questions and ideas. The unit was rated as an Example of High Quality NGSS Design if Improved by the NextGenScience Peer Review Panel.



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

2 Blog Post: Am I Following This Recipe Correctly?



When designing effective science learning, a common question is how often students need feedback and from whom. The newest post from NextGenScience's [On The Same Wavelength](#) blog explores how teacher and peer feedback supports student progress in the mastery of three-dimensional learning objectives.

See the post [here](#).

3 Two New STEM Teaching Tools



How to Productively Reframe Eco-anxiety as a Science Communicator or Educator

“The unfolding climate crisis can feel ominous, but remaining mired in fear limits the agency of both learners and educators — preventing them from engaging in innovative thinking and action toward ecological caring and justice. Science is uniquely positioned to cultivate critical hope through solution-based instruction that considers causes of, impacts of, and responses to climate change.”

See the STEM Teaching Tools Practice Brief 80 [here](#).



Organizing for Educational Transformation using Actor-Network Theory

STEM Teaching Tool Practice Brief 81 provides context and suggestions on how the Actor-Network Theory (ANT) can be used to promote educational equity. The ANT was developed to help understand how actors, such as stakeholders, policies and resources, in a system come together to produce a common effect.

See the STEM Teaching Tools Practice Brief 81 [here](#).

4 Edreports Data Snapshot: K–12 Science Instructional Materials

In their newly released report, EdReports provides a snapshot of trends found from their review of science instructional materials, including the ongoing challenge for all educators to gain access to quality science materials. The report provides recommendations for teachers, school leaders, and district leaders on the effective use of high-quality science instructional materials.

See the report [here](#).



5 Webinar with the Authors of *Journal of Science Teacher Education's* NGSS Special Issue

The Association for Science Teacher Education is hosting a webinar with editors and authors of a Special Issue of the *Journal of Science Teacher Education: Instructional Materials Designed for A Framework for K–12 Science Education* and the Next Generation Science Standards.

Learn more and register for the December 15 webinar [here](#).

6 Assessing for Student Engagement and Equity in Science

“Learners who provide consistent feedback feel empowered and valued in the learning process. These learners become active participants in their learning, making a deeper connection to their own cultural experiences and how their actions impact the practices and knowledge they build. When used regularly,



practical measures allow learners to see themselves as contributors to the design of the learning environment, challenging the problematic issues of framing learning as the acquisition of knowledge and instruction as being informed only by teacher decisions.”

See *The Science Teacher* journal article [here](#).

7 ICYMI: Taking Stock of Science Standards Implementation Summit

On December 8, the Board of Science Education of the National Academies of Sciences, Engineering, and Medicine hosted the final day of a public summit focused on implementation of state science standards. Topics included instructional materials, systems of assessment, and tools and resources to build capacity and drive coherence around standards implementation.

See the meeting recording and materials [here](#).



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