NGSS NOW

7 things you need to know about the NGSS this month

March 2017

1 FINAL REMINDER: Submit Lessons and Units by March 31st!

Achieve is facilitating an EQuIP Peer Review Panel for Science to identify lessons and units that best illustrate the cognitive demands of the NGSS, as introduced in *A Framework for K-12 Science Education*. Achieve will strive to raise awareness, visibility, and use of these lessons and units, including by encouraging our state and district partners to make them available in their repositories or other platforms.

Any lessons or units that are identified as "High Quality Examples" and "High Quality Examples if Improved", based upon the EQuIP Rubric for Lessons & Units: Science, will be posted online and shared with educators across the nation.

If you, or any educators in your network, have designed NGSS-aligned lessons or units, please submit those online by March 31st. Your timely efforts will help to ensure that the EQuIP Peer Review Panel for Science has time to review those instructional materials before the start of the 2017-2018 school year. **For more details on the submission guidelines, click here.**

For more information about the EQuIP Peer Review Panel for Science, please contact Jeremy Thomas, jthomas@achieve.org.

2 Featured Standards

This issue of NGSS Now features an example of how certain PEs* could be bundled in order to develop an instructional unit that engages students in science phenomena.

3-PS2-1: Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an

3 Science Phenomenon

This phenomenon offers teachers a potential way to connect our "Featured Standards" (see #2) to a real-world phenomenon:

When this dad pushes his baby in the swing, he can predict the way she moves. (Watch video)

object.

3-PS2-2: Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

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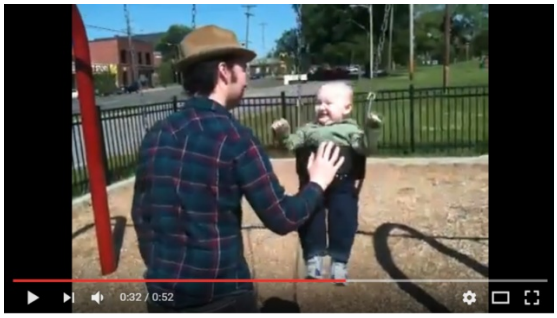
For a more in-depth look at these NGSS PEs and to search for others, read this.

Need more context?

See where these ideas are introduced in A Framework for K-12 Science Education (pages 114 and 116).



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

- Can you predict the motion of the baby in the swing after the dad pushes?
- What does the dad have to do to make the baby move in the swing?
- What does the dad have to do to make the baby stop moving?
- What if two people push the swing, with similar force, in opposite directions? Would the swing move?

4 QUESTION OF THE MONTH

Q: My district is implementing the NGSS and I'm looking for resources on how to make sure we reach all our students. What do you recommend?

A: You might find Appendix D to be a useful resource. It addresses what educators can do to help ensure that the standards are accessible to all students. In addition, there are seven case studies that accompany this appendix and highlight various strategies that teachers can use in their classrooms.

If you would like to have your question featured in a future edition of the *NGSS Now* newsletter, please contact ngss@achieve.org.

5 Teachers eye potential of virtual reality to enhance science

education

By Carolyn Jones
EdSource
February 20, 2017

To take advantage of the latest in 3-D technology, some educators are increasingly expressing interest in using virtual reality to enhance science education. There are no firm numbers about how widely virtual reality is being used in the classroom, but teachers interviewed by *EdSource* believe it can be an effective way to hold the attention of students accustomed to video games and digital media, as well as provide innovative ways to learn about the natural world.

Although the equipment needed to use this technology in the classroom can be expensive, David Evans, executive director of the National Science Teachers Association, expects prices to fall and virtual reality to eventually become a staple of science classrooms. "It's just a matter, of time," he said.

To help teachers learn how to use virtual reality, a panel at the NSTA Conference in late March will be devoted to "Virtual Reality's Emerging Future in the Science Classroom." Read more.

6 Toshiba and NSTA announce regional winners of 25th annual ExploraVision program

Business Wire
March 7, 2017

ExploraVision is billed as the largest K-12 science competition designed to build problem-solving, critical thinking and collaboration skills that are critical to the Next Generation Science Standards (NGSS).

"For a quarter century, the ExploraVision program has exemplified Toshiba and NSTA's partnership to inspire ingenuity and innovation among future generations," said David Evans, Executive Director of the National Science Teachers Association (NSTA).

This year, participants were challenged to imagine an innovative technology that might exist 20 years from now. Using real scientific research, students outlined methods to plan and test their ideas. The 24 winning teams will advance to the national phase of the competition, where participants will have a chance to win $10,000 U.S. Series EE Savings Bonds and other prizes.

"This year's regional winners set out to solve some of the world's greatest problems using creativity, teamwork and the scientific methods, and we couldn't be prouder of their achievements," said Fumio Otani, Chairman & CEO, Toshiba America, Inc. Read more.

7 The importance of STEM

By Julissa Zavala
Hartford Sentinel
March 8, 2017

Kevin Jauregui, a math and physics teacher at Sierra Pacific High School, said he tries to incorporate as much STEM as he can into his classes, especially his physics class. He said with Next Generation

Science Standards (NGSS) there are more investigations of concepts and a focus on how the concepts affect society.

Some of the concepts Jauregui has taught in his class are on things like torque, sonic boom, roller coaster principles, resonance in bridges, Hooke's law in springs, inertia in figure skating, the effect of gravity and triple acceleration in orbiting bodies, and the Saturn moon rocket.

Juaregui said he recently asked his students to read an article in *Consumer Reports* and analyze the risk of cars tipping over while turning at high speeds. He said the concepts he taught for that lesson were torque and moment of inertia, and the real-world aspect was a motivating way to learn the material.

Jauregui said what physics offers his students the most is engagement, because physics is applied everywhere in the world around us. Read more.