NGSS NOW

11 things to know about quality K-12 science education in **November 2017**

1 Upcoming Webinar: Building a Science Strategy for Your School or District

Achieve/NSELA/NSTA: Building a Science Strategy for Your School or District

The new federal education law – the Every Student Succeeds Act or ESSA – includes a significant shift of decision-making to the state and local levels, and provides states and districts with flexibility to set new policy and funding priorities. District leaders nationwide are now determining their priorities under ESSA, informed by their state plans, and how they can best take advantage of the new federal education law. ESSA offers schools and districts the opportunity to rethink programs and support better student outcomes in science.

This web seminar, taking place on Nov. 14th, is co-hosted by NSTA and NSELA. The program is geared for classroom teachers, district science leaders and administrators.

Dr. Michael Lach from Achieve will highlight proven methods that will improve the science outcomes for students and help build strategies that can also be used in school/district ESSA plans.

Learn more and register today. In advance of the webinar, review Achieve's brief on Science and STEM in ESSA and see the new online tracking tool which illustrates how states will hold schools accountable under ESSA.

2 Quality Examples of Science Lessons and Units

A new unit has been reviewed by the EQuIP Peer Review Panel for Science and added to nextgenscience.org under Quality Examples of Science Lessons and Units.

This middle school unit was designed to support the middle school standards related to Ecosystems: Interactions, Energy, and Dynamics integrated with elements of related Earth Sciences NGSS (Human Impact).

The unit includes five chapters, each focused on a specific phenomenon related to ecosystem disruption, including questions around the reintroduction of wolves into Yellowstone National Park and the invasion of zebra mussels in the Great Lakes and Hudson River. © Regents of the University of California Learn more.

3 Coherent Storylines to Support 3-D Science Learning

Brian J. Reiser, Professor of Learning Sciences in the School of Education and Social Policy at Northwestern University and member of the National Research Council Committee that developed the *Framework for K-12 Science Education* (2012), has developed a resource for nextgenstorylines.org.

It explores how to design and teach coherent storylines that enable students to become partners in classroom instruction, particularly in managing science investigations.

Learn more and see other tools from NextGenStorylines here.

4 STEM 2026: A Vision for Innovation in STEM Education

In 2015, the U.S. Department of Education, in collaboration with American Institutes for Research (AIR), convened a series of workshops that brought together invited STEM experts and thought leaders to share their ideas and recommendations for an innovative future of STEM education.

Nearly 30 individuals, representing a wide range of expertise, contributed to this project.

This report synthesizes the key observations, considerations, and recommendations put forth by the
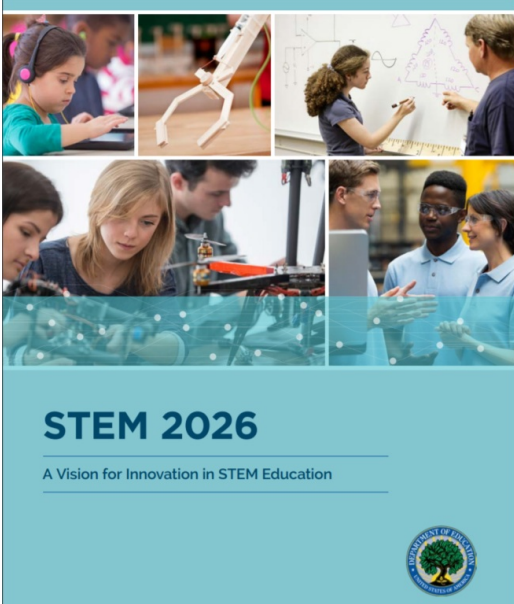
participants under the auspices of an aspirational vision for STEM education, or "STEM 2026." Read the report.

STEM 2026

A Vision for Innovation in STEM Education

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5 **Educators want to Rethink the way Students Learn Science**

By Madeline Will
Education Week
October 13, 2017

Researchers and educators are trying to transform the way students learn science. Forget sit-and-get lessons, they say--students should be active participants in their learning, which should be inquiry-based. Students should be encouraged to vocalize their understanding throughout the learning process. Read more.

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6 **Science Ed: Survey What Students (Actually) Want**

As part of the Amgen Foundation's commitment to inspire the next generation of scientists, it partnered with Change the Equation (a coalition of corporate members leading a movement to ensure that every young person in the U.S. is STEM literate) to conduct a survey to better understand what motivates U.S. high school students to pursue a science education.

The report shows that students want additional opportunities that will inspire them to explore careers in scientific fields, and teachers are

SCIENCE ED: WHAT STUDENTS WANT

A new survey of American teenagers reveals how we can better engage students in science — both in and out of the classroom.
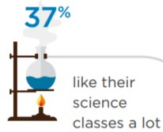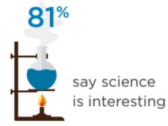
TEACHERS ARE A TOP INFLUENCE
85% say teachers influence their interest in biology careers

TEENS WANT MORE ENGAGING SCIENCE CLASSES
Teens overwhelmingly believe science is interesting and relevant, but when it comes to science classes, they're lukewarm

81% say science is interesting

37% like their science classes a lot

Teens know what they want
Teens say hands-on, real-world experiences

What Teens Want

What Teens Get

uniquely positioned to stimulate students' interest in STEM. Learn more and download the infographic.

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⑦ A 12th Grader Explains why we need more Women and Minorities in Science and Tech

By Bethel Samson
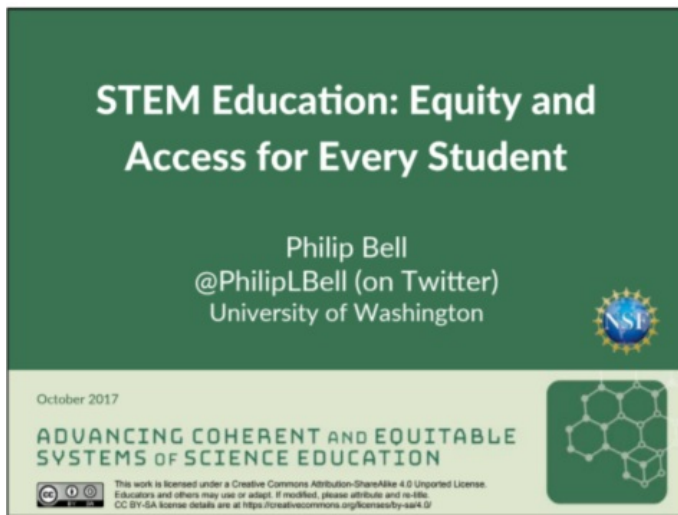*Montreal Gazette*
October 30, 2017

Role models are scarce. I have often pieced together attributes and talents I admired from different inspirational historical figures such as NASA mathematician Katherine Johnson's resilience, first Canadian female doctor Emily Stowe's leadership qualities, author Virginia Woolf's rationality and eloquence and businesswoman Viola Desmond's courage to take on the establishment.

But I have never found someone with whom I completely connected, someone whose path was exactly like the one I am attempting to follow. Often what hinders young women and minorities from living up to our full potential is being unable to see what we would like to become. Read more.

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⑧ Equitable 3-D Science Learning for All Students

STEM Education: Equity and Access for Every Student

Philip Bell
@PhilipLBell (on Twitter)
University of Washington

October 2017
ADVANCING COHERENT AND EQUITABLE SYSTEMS OF SCIENCE EDUCATION

Phil Bell, Professor of the Learning Sciences and Human Development at the University of Washington, gave a keynote address to the Washington Science Teachers Association about equity in science.

His presentation explored (1) how equity and social justice goals relate to STEM, (2) purposes and processes of formative assessment, (3) how cognitive formative assessments and cultural formative assessments can build capacity for equitable instruction, and (4) resources that promote equity. Access the full presentation here.

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9 Classroom Posters Available to support NGSS Science and Engineering Practices

Asking Questions & Defining Problems
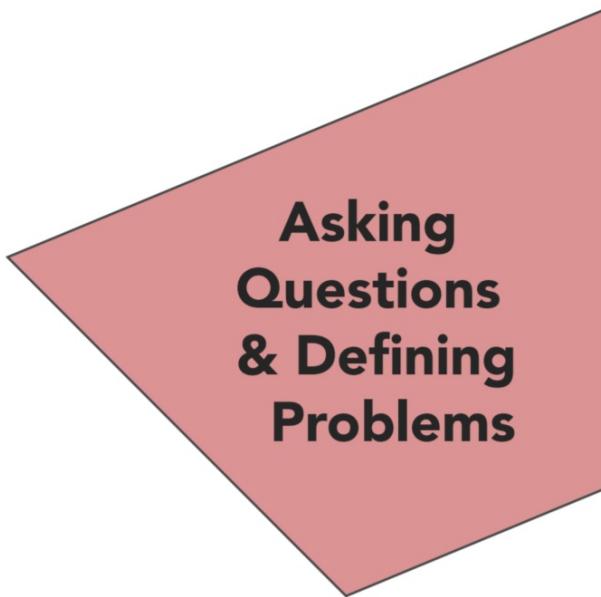
NextGenStorylines offers a guide to making classroom posters for the NGSS Science and Engineering Practices (SEPs), and provides some guidance to teachers for how they could be used to support instruction.

For example, the posters could identify focal practices in a lesson, to connect back to practices used in previous lessons or to encourage students to consider options for next steps in future lessons. Learn more.

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10 Using Key Messages for Effective NGSS Advocacy

Message 1

Central "Ask" or
Desired Call to
Action

Message 3   Message 2

Achieve has supported several states on how to best advocate for their new science standards, helping to identify clear goals and develop clear messages that are tailored to specific audiences.

This resource summarizes some of those practices and offers guidance to educators, schools, districts, and/or states when communicating about their transition to the NGSS. Learn more.

11 Supporting Coherence & Equity in Science Education

ACESSE

The ACESSE Project
Supporting Coherence & Equity in Science Education

Educators are frequently asked to implement state and local initiatives that do not share a common vision for teaching and learning or cohere with one another. This incoherence can reinforce educational inequities.

The Advancing Coherent and Equitable Systems of Science Education (ACESSE, or "access") project brings together partners from educational research and practice to improve equity by building coherence in science education. Learn more.

NEXT GENERATION
SCIENCE
STANDARDS
For States, By States