NGSS NOW

6 things to know in December 2023

1 Three High-Quality High School Units Posted

In the OpenSciEd *B.2 Ecosystems: Matter & Energy* unit, students explore a phenomenon of a certain type of forest fire that re-emerges in the spring with an increased understanding of how matter and energy flow in ecosystems. The unit concludes with students considering the broader implications of increased carbon dioxide and temperature, inspiring them to design fire management solutions for communities facing environmental challenges. The unit was awarded the NGSS Design Badge by NextGenScience's Peer Review Panel.

See the unit and the corresponding EQuIP Rubric for Science evaluation report here.

In the *OpenSciEd C.2 Structure & Properties of Matter* unit, students observe and work to explain patterns in lightning phenomena, exploring the subatomic structure of atoms, electrostatic forces, and transfer of energy in lightning. In the final lesson set of the unit, students examine the safety of materials during lightning strikes. The unit was awarded the NGSS Design Badge by NextGenScience's Peer Review Panel.

See the unit and the corresponding EQuIP Rubric for Science evaluation report here.

The OpenSciEd *P.2 Energy, Forces, & Earth's Crust* unit is anchored around a crack in the Earth's crust that emerged in the Afar region of Ethiopia in 2005, coinciding with earthquakes and a volcanic eruption. The unit concludes with students explaining the geological history of the Afar region in addition to events in North America. The unit was awarded the NGSS Design Badge by NextGenScience's Peer Review Panel.

See the unit and the corresponding EQuIP Rubric for Science evaluation report here.

2 Imagine a STEM Pathway Where BIPOC Girls Belong, Persist and Thrive

"Educators — in classrooms, afterschool programs and in the community — have the power to show girls that they are celebrated, centered and belong 365 days of the year. There is a collective power to reimagine a STEM pathway that works for every girl, no matter what they look like or where they come from. But first we must fling open the gates so the genius can flow through."

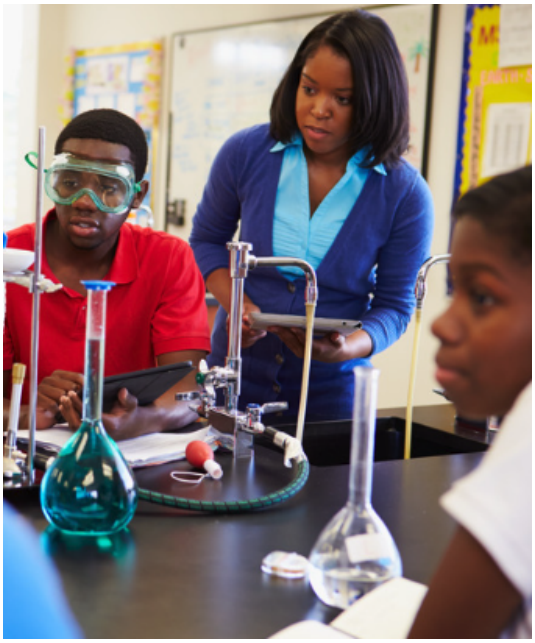
See the Youth Today opinion essay here.

3 High-Quality Instructional Materials Change Instructional Leaders' Job

This article shares findings from a study on the implementation of high-quality instructional materials in schools. The findings suggest a need for a shift in the approach to the implementation of a new program, emphasizing the important role of leaders in successfully transitioning to a new curriculum. Recommendations include prioritizing curriculum-specific support for leaders so they have the necessary tools and knowledge to support an effective curriculum implementation.

See the Thomas B. Fordham Institute article here.

4 Guide to Creating Digital Lab Experiences for Students



There are currently record numbers of absent students in schools across the country. One Wyoming school district is working to combat the negative impact of absenteeism by creating digital science labs that can be accessed by all students, regardless of their absence status. A collaborative team from the University of Wyoming, Carbon County School District #2, and the Wyoming Department of Education has developed a guide to support others in creating relevant digital science labs for all students.

See the guide here.

5 Environmental Justice Needs Inclusive Science Education

The article highlights an environmental injustice issue — higher rates of asthma among Black and Latino children due to disproportionate exposure to environmental risk — to emphasize the need for justice-driven climate education in schools. It argues that system-level policies often fall short and emphasizes the importance of high-quality curriculum and teacher professional development for delivering inclusive climate education to all students.

See the Columbia University article here.

6 Black Women Teaching Science Find Formula for Incorporating Anti-Racist Practices

This article describes findings from a new study by science education researchers about the ways Black female scientists are incorporating ideas about race, gender, and class inequities in their science classrooms. The study identified four key strategies the teachers used to raise awareness of these issues in their classrooms and connect history and culture with science.

See the New York University article here.

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