

# NGSS NOW

## 5 things to know about quality K-12 science education in **November 2019**



### 1 **WEBINAR: A Framework for Evaluating Cognitive Complexity in Science Assessments**

Achieve recently released three new frameworks - one each for [mathematics](#), [reading](#), and [science](#) - for the educator community working on high-quality student assessments. The [science framework](#) can be used to assess the degree to which an assessment task asks students to intellectually engage in and make use of disciplinary core ideas, science and engineering practices, and cross-cutting concepts in service of sense-making. To learn more about the framework and how to use it, please join Aneesha Badrinarayan, Director of Special Projects & Initiatives at Achieve, and Dr. Miray Tekkumru-Kisa, Assistant Professor at Florida State University, for a webinar on Thursday, November 21 at 2:00 pm ET. You can [register for the webinar here](#); we'll be recording and posting the webinar on our website for those unable to attend. We hope to see you there!



A FRAMEWORK TO EVALUATE  
**COGNITIVE COMPLEXITY IN  
SCIENCE ASSESSMENTS**

### 2 **New STEM Teaching Tool: What does subject matter integration look like in elementary instruction? Including science is key!**



A [new STEM Teaching Tool](#) explores the importance of integrating science instruction with other subjects in elementary education to ensure that science instruction remains a priority in the elementary experience. Though science has taken a backseat to mathematics and English language arts instruction in elementary grades in recent years, tapping into children's natural curiosity for science can help to build strong knowledge bases in all content areas.

3

## From Education Week: Students Learn More From Inquiry-Based Teaching, International Study Finds

"The researchers compared the range of scores on standardized math and science tests in each group before starting to implement the inquiry-based instruction, and then again seven months later. They found that in the classes that used inquiry-based instruction at least four days a week during that time, students improved significantly more in math and science than students in the regular classes. The average student in inquiry classes performed 0.14 of a standard deviation higher than the average student in a standard class in science and 0.18 of a standard deviation higher in math by the end of the school year.



Photo Credit: Meggan Halle/Keyhole Photo for Education Week

"Students across grades and across countries showed similar benefits from the inquiry-based classes, including the preschoolers."

[Read more.](#)

4

## From AAAS: How Can Elementary Teachers Improve Their Ability to Run Productive Science Discussions?

[New research](#) from AAAS examines ways in which professional development for elementary educators can lead to improvement in their facilitation of productive science discussions for their students.

"...Questions such as: "Is a seed alive or dead?", "Where does the mass of a plant come from?", "Where does the water on the outside of a cold Coke can come from on a hot day?" ... are best addressed not by telling students the answers but by giving students an opportunity to consider the evidence and engage in discussion and argument about what is the most justified explanation. Why? The evidence suggests that the conceptual understanding gained through such exercises is better and more enduring. In short, knowing why you are wrong matters as much as knowing why you are right."

5

## From the NSTA Blog: It Takes More Than Teacher Professional Development: Building Systems-Level Capacity for NGSS Implementation by Dr. Vanessa Lujan

"Research tells us that successful NGSS implementation within school districts requires a sustained and coordinated effort, leadership at all levels, and both immediate and long-term changes over a course of multiple years. Districts and schools must have instructional leadership and infrastructure focused on science, and equitable science instruction must be an obvious and explicit priority. Rigorous standards, like the NGSS, are needed to guide a coherent system of curriculum, instruction, assessment, teacher preparation, and professional development. Instructional materials, the classroom, outdoor learning experiences, and field trips should give students opportunities to learn science by engaging in the practices of science that approximate what scientists actually do. Districts and schools must develop and align policies to support science education. External/community resources and partnerships should be strategically prioritized to achieve district science goals."

[Read more.](#)

