

SCIENCE

Elementary Science Curricula Are in Short Supply. Will a Free Resource Help?

An open-source curricula now includes a suite of materials for those grades



By [Evie Blad](#) — October 06, 2026 ⌚ 5 min read



Students in Rita Leary's science class listen to a Pilot Light food education lesson about bees at Ashburn Elementary School on Thursday, Sept. 17, 2026 .
— Arthur Maiorella/Chicago Tribune viaTNS

As elementary schools coordinate broad efforts to address gaps in students' math and reading abilities, science education can sometimes take a back seat. That lack of emphasis is reflected in a dearth of quality instructional materials for young students.

Elementary school teaching often relies on “summer camp science”—flashy experiments that wow students without engaging them in larger questions, said Andrea Meyer, a 3rd through 6th grade science specialist in Boston. And it can be difficult to find curricula aligned with state standards that encourage deeper learning.

Seeing Mentos explode in a bottle of Coke can be “objectively cool,” Meyer said. But watching the candy cause a reaction that rapidly forms a stream of carbon dioxide bubbles doesn't necessarily help students learn to ask questions or connect to broader scientific concepts.

“These lessons don’t necessarily teach you how to think like a scientist,” Meyer said. “They just say, ‘Look at this cool thing,’ and don’t teach you to think beyond that.”

With the recent completion of a set of free, open-access K-12 science teaching materials, educators like Meyer hope lessons featuring deeper scientific thinking will spread.

Learning how scientists create hypotheses and test them is a core emphasis of the Next Generation Science Standards, a 2013 framework designed by a multistate coalition. Twenty states and the District of Columbia have adopted the Next Generation Science Standards, which emphasize teaching students to ask questions about scientific phenomena and learning “cross-cutting concepts,” like cause and effect. Other states have developed standards inspired by the framework.

Schools have fewer options for elementary school science curricula

New research from the Center for Education Market Dynamics, an organization that researches curriculum adoption and availability, backs up teachers’ assertions about a lack of early science materials.

An analysis of 2,500 districts’ K-8 materials released in July found 204 products used for science instruction, 33% fewer products than the school systems used for math and 65% fewer than they used to teach English/language arts.

EdReports, an organization that reviews curricula for alignment with learning standards, has published 35 reviews for K-8 science materials, compared to 151 for math and 98 for ELA, the report found. At the elementary level, just two of those products “meet expectations” for alignment with the NGSS.



This is the moment to approach science curriculum adoption with the same rigor applied to math and ELA.

The Center for Education Market Dynamics

In Boston, Meyer uses a new set of materials that aim to address that gap. OpenSciEd, an organization that has developed standards-based, open-source science curricula for middle and high schools, finished rolling out a complete suite of elementary school lessons in February. The materials are free, allowing states and districts to download and customize them for their students.

Each lesson starts with an “anchoring phenomenon” and walks students through a scientific process for answering questions.

In 1st grade, students learn about the properties of light by observing how they can’t read a book when their teacher flips off the classroom lights. They then gather data about how reflective, transparent, and opaque materials can block light or change its direction. At the end of the unit, students write essays about how reading in bed requires holding a light source like a flash light under the covers because quilts and comforters are opaque, blocking out any external light.

A 3rd grade lesson about ecosystems starts with a video of a manatee joining a pod of bottlenose dolphins in Tampa Bay, sparking an opening question: Why would two different animals travel together? Students then learn about habitats and how human-driven changes can affect them. Pollution can cause a growth of algae that kills seagrass the animals eat, for example. And changes in their environment cause dolphins and manatees to gather in increasingly limited spaces where their differing needs are both met.

“We wanted students to learn the science in a real-life context,” said Yanira Vazquez, OpenSciEd’s elementary school curriculum product manager. “Science is not something that happens on its own. We read about it, we learn about it, and we experience it.”

Engaging students’ enthusiasm in science lessons

When Meyer first started using OpenSciEd materials with her 6th grade classes, she found herself searching for a similar approach for her younger students. So she was eager to see the complete rollout of the elementary materials.

The lessons have also boosted students’ literacy, their ability to present their findings, and their understanding of how to find information to help answer questions, Meyer said.

“Being able to look at and interpret data and figure out what it does and does not mean is so important,” she said.

Meyer has had to tamp down her students’ enthusiasm a bit. In 5th grade, for example, her students learned about the life cycle of plants by observing nurse logs—fallen trees that become homes for moss and other plants and animals.

“I had to tell them, ‘You can see pieces of a nurse log outside but that doesn’t mean we need to bring them inside,’” Meyer said. “There were two full weeks where I got snails brought in from the outdoor P.E. area.”

More than 40,000 users have registered to access the OpenSciEd elementary materials, which the organization has submitted to EdReports for review. (EdReports designates OpenSciEd’s middle and high school science curricula as “meets expectations.”) Because they are free, there’s no data on how many schools have fully adopted the elementary lesson plans.

Developers worked with more than 450 teachers in nine states to help field-test the elementary materials, getting feedback from almost 10,000 students about how the lessons worked in real classrooms, Vazquez said.

For teachers, high-quality curricula that spark student enthusiasm should be “an expectation, not a nice-to-have,” she said.

The Center for Education Market Dynamics analysis projects an opportunity for more states and districts to adopt stronger science materials in the near future.

Researchers found that 42% of elementary school materials identified in their analysis were copyrighted from 2019 to 2020. Because schools often review curricula in six-year cycles, the next few years will present a significant window to encourage greater uptake of standards-driven science materials, the report found.

“This is the moment to approach science curriculum adoption with the same rigor applied to math and ELA,” the report said.



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