TRANSFORMING THE INSTRUCTIONAL MATERIALS MARKETPLACE:

A REPORT ON THE IMPACT OF NEXTGENSCIENCE'S EQuIP REVIEWS AND PEER REVIEW PANEL FROM 2016–2024

SUMMARY

Over the past eight years, the Educators Evaluating the Quality of Instructional Products (EQuIP) Rubric has become widely-recognized and used in the science education field, helping to increase the demand and supply of high-quality science instructional materials. NextGenScience has played a pivotal role in this work, coordinating hundreds of rigorous reviews of lessons and units by expert educators throughout the country and sharing out materials that score highly on the Next Generation Science Standards (NGSS) website.

AS A RESULT OF THESE COLLABORATIVE EFFORTS OF THE SCIENCE EDUCATION COMMUNITY,

500+

Science instructional units have been fully evaluated by teams of expert educators;

159

Unique developers of instructional materials have received formative feedback on their products;[1] and

73

Vetted lessons and units are now freely available as quality examples on nextgenscience.org.[2]

[1] *As of June 2024* [2] *As of June 2024*

HISTORY OF THE EQuIP RUBRIC FOR SCIENCE

In 2013, Achieve launched the EQuIP Initiative with the original purpose of increasing the supply of and demand for high-quality lessons aligned to the Common Core State Standards in Mathematics and English/Language Arts (ELA). This work built upon Achieve's collaborative effort with education leaders from Massachusetts, New York, and Rhode Island to develop "Tri-State Rubrics" and a rigorous process by which highly-trained educator reviewers could use these rubrics to evaluate instructional materials. Achieve adapted the Tri-State Rubrics to create EQuIP Rubrics for Mathematics and ELA. By training educators to apply those rubrics, Achieve's EQuIP Initiative resulted in a large database of lesson plans reviewed for their quality and alignment with mathematics and ELA standards.

When the NGSS were released in 2013, the science education field did not yet have a shared understanding of what quality science teaching and learning to support these new learning goals looked like in the classroom. This lack of common vision meant the instructional materials market was slow to adjust and fully support educators to make the necessary shifts. Resources claimed to be designed for the new standards while they remained designed for previous learning goals and supported traditional instructional strategies. To help address this issue, Achieve built off the earlier work of the EQuIP initiative, working with NGSS writers and the National Science Teaching Association (NSTA) to develop and release the EQuIP Rubric for Science in 2014. This tool described criteria by which lessons and units could be evaluated to determine whether they were truly designed for the NGSS.

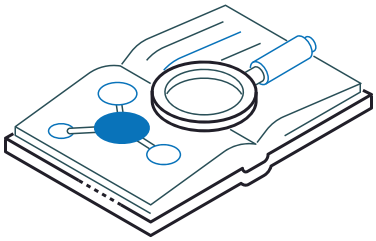
HISTORY OF THE SCIENCE PEER REVIEW PANEL

Following in the model of the EQuIP Initiative for mathematics and ELA, the EQuIP Rubric for Science was intended to be applied by teams of expert educator reviewers. In 2016, Achieve began training the first cohort of the Science Peer Review Panel (PRP), a group of experienced educators who worked collaboratively to review instructional materials using the EQuIP Rubric for Science. Between 2016 and 2024, a total of 70 expert educators served on one or more PRP cohorts. To deepen their expertise in NGSS and instructional materials review, each PRP cohort received intensive and ongoing professional learning. In 2020, the Achieve science team became the NextGenScience team at WestEd, continuing to coordinate the work of the PRP.

HIGH-QUALITY INSTRUCTIONAL MATERIALS

From the launch of EQuIP reviews in 2016 to summer 2024, the NextGenScience team has coordinated reviews of over **500 full science units and dozens of individual lessons**. The lessons and units that score highly (at least a "4") on reviews coordinated by NextGenScience are shared as Quality Examples of NGSS Design in a free, online database within the nextgenscience.org website, which receives over one million views annually. In addition, to create a trustworthy marker of quality, Achieve (now NextGenScience) developed the NGSS Design Badge for top-rated materials (scoring at least an "8"). The NGSS Design Badge is an online badge that digitally verifies its authenticity and embeds the evidence — in the form of an EQuIP Rubric evaluation report — that justifies its high-quality label.

A total of **73 units and lessons have earned high ratings on EQuIP reviews** and are now publicly available on nextgenscience.org as quality examples. The comprehensive database of free quality examples now includes lessons and units from all grades K–12. These example lessons and units are also listed on the specific NGSS performance expectation webpages they relate to, providing educators with easy access to examples of high-quality instructional materials designed for their targeted standards.



73

Free Quality Examples Showcased on NextGenScience.org

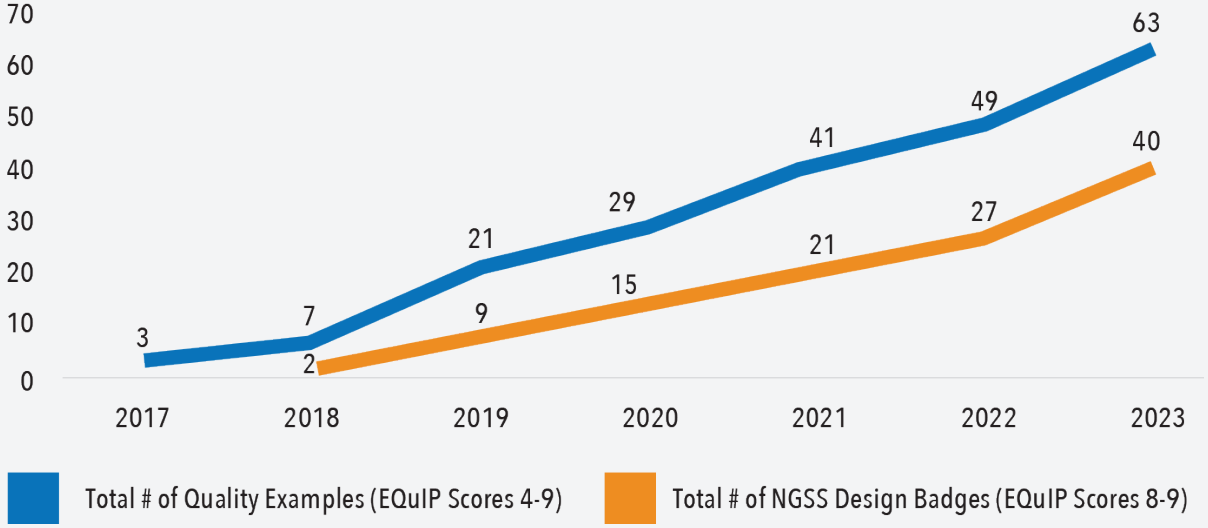
16
Elementary School
Lessons & Units

30
Middle School
Lessons & Units

27
High School
Lessons & Units

NextGenScience's work to showcase quality examples identified through EQuIP reviews has helped educators know what to look for in their instructional resources as well as guided developers to know what features they should be striving to include in their programs. The result was a transformation of the instructional materials market toward programs that better supported students to meet the rigorous expectations of the NGSS. Over time, the number of high-quality materials NextGenScience reviewers identified annually has greatly increased. Similarly, the number of annually awarded badges has grown significantly, from just two units that had earned NGSS Design Badge in 2018 to 12 in 2023, **totaling 49 badged units and lessons** as of June 2024.

Table 1: Number of Quality Examples of NGSS Design Over Time



FEEDBACK TO DEVELOPERS

EQuIP reviews of lessons and units produce extensive, detailed feedback and constructive suggestions aimed at fostering continual improvement of science instructional materials. To date, EQuIP reports have served as a formative tool for curriculum developers from **159 different organizations**, including commercial publishers, non-profit developers, universities, and school districts, offering actionable suggestions to improve their materials. In addition, the EQuIP Report feedback shared online for the Quality Examples of NGSS Design has been used by other developers around the world to understand what NGSS design looks like in practice.

> ***"The EQuIP review process has helped us focus on what's important, what we're getting right, and where we can improve."***
>
> **CURRICULUM DEVELOPER**

A 2021 report by EdReports and NextGenScience noted many positive changes in science curriculum materials in the preceding decade, at least partially as a result of EQuIP feedback to developers. PRP members also noted many improvements in the quality of materials they saw over time, from before the PRP started through the present, including more focus on students figuring out real-world phenomena, more coherence from a student perspective, and more support for embracing the diversity of perspectives students bring into the classroom.

PRP MEMBERS HAVE SEEN IMPROVEMENTS IN INSTRUCTIONAL MATERIALS

"Student ideas are now becoming a pivotal part of materials. Consideration of social-emotional needs and cultural beliefs are being included in instructional materials. All of these changes increase student engagement and allow students to connect to the materials."

"Many of the units I reviewed were revised and re-submitted and now have been designated as High-Quality Examples. It is great to see that the feedback given to the developers was used to strengthen the work that many teachers can now use."

"The EQuIP rubric and the PRP are making huge changes in the quality of science instructional materials. Science teaching and learning is finally becoming focused on the real-world and the lives of our students. I believe that EQuIP reviews have supported the field in driving curriculum material development that is tailored to the priorities of the NGSS."

PROFESSIONAL LEARNING AND RESOURCES FOR SCHOOL DISTRICTS

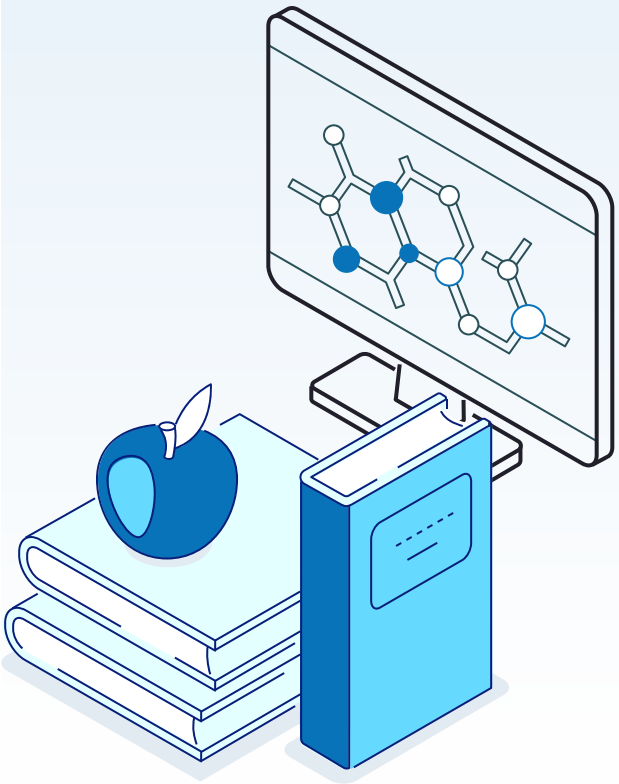
In addition to supporting developers of instructional materials to use EQuIP reviews, NextGenScience provides EQuIP professional learning workshops to help educators develop a deeper understanding of the features of high-quality science instructional materials based on *A Framework for K–12 Science Education* and promote more informed curriculum resource selection and modification. Through this kind of professional learning and technical assistance, districts can a) build a shared vision for features of high-quality instructional materials; b) determine selection criteria; and c) design an evidence-based process for selection.

For example, the science team at Boston Public Schools (BPS) designed a customized version of the EQuIP Rubric and review processes to align with their local requirements and policies. BPS then collaborated with NextGenScience to design a series of virtual professional learning sessions for district educators focused on using the Rubric as a team. These sessions built a shared vision for standards alignment and instructional shifts, preparing BPS educators to engage in an effective materials selection process. The district leaders were committed to a collaborative and inclusive process, with educators playing a central role in the process of curriculum evaluation and selection.

Teachers who completed the professional learning course reported a better understanding of the features of high-quality instructional materials. This knowledge empowered teachers to make informed decisions and advocate for the best resources for their students. After the initial EQuIP professional learning course, the BPS team found the results to be so valuable that they repeated the course twice more to train the science instructional materials selection committees for all grade bands.

"We will continue to use the EQuIP training to identify any potential gaps (in materials) like where they (teachers) think things need to be contextualized or where they feel there aren't enough resources... Then we know where we need to go next to better support them with implementing the curriculum."

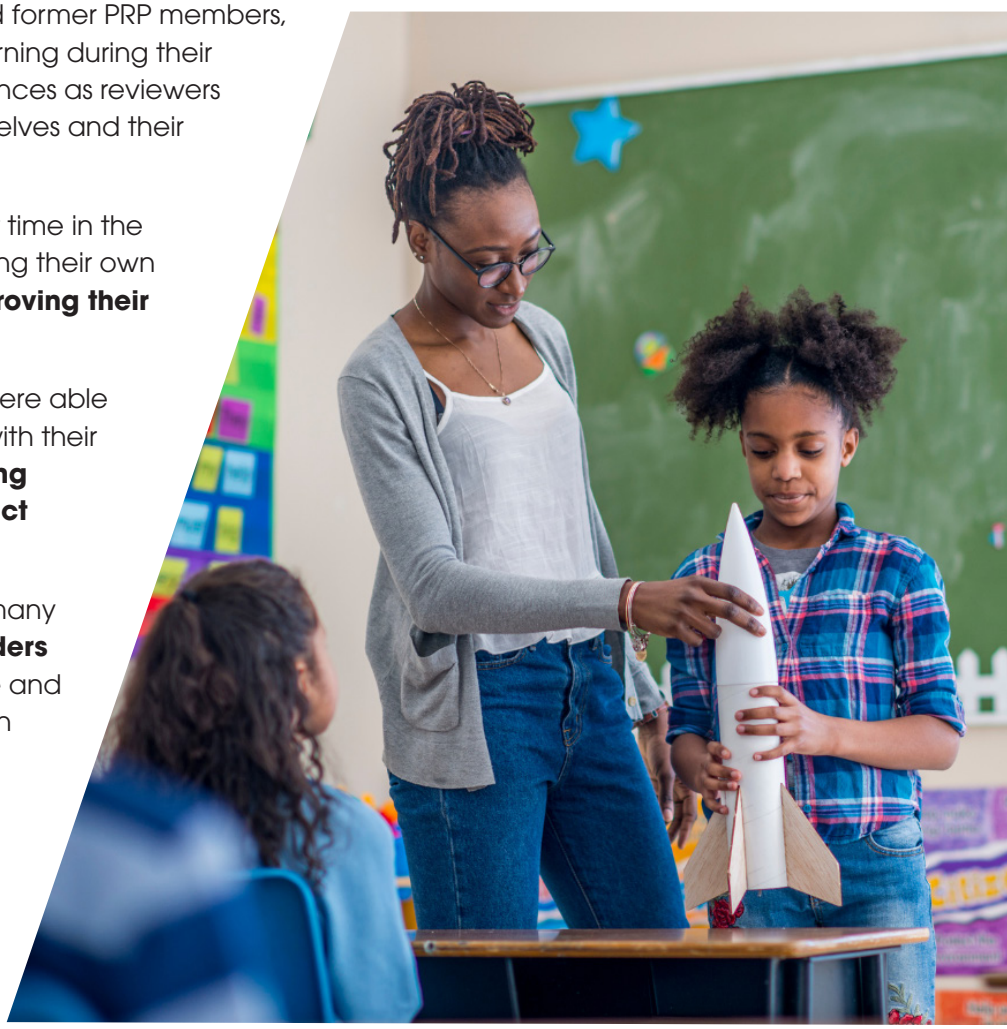
BOSTON PUBLIC SCHOOLS LEADER



PREPARATION OF SCIENCE PEER REVIEW PANEL MEMBERS

NextGenScience surveyed current and former PRP members, who reported that the professional learning during their years of service as well as their experiences as reviewers provided large benefits for both themselves and their communities:

- They overwhelmingly said that their time in the PRP was extremely helpful, increasing their own **professional knowledge** and **improving their classroom instruction.**
- Many respondents also said they were able to share their increased expertise with their fellow teachers, **improving teaching practice in their school and district communities**.
- After their term in the PRP ended, many former PRP members became **leaders in the field**. They worked at a state and national level serving the education community in a number of roles including providing in-service and pre-service **professional learning to teachers**, serving as **school board members**, reviewing **scholarly journals**, and developing **curriculum for a variety of organizations**.



"My experience as an EQuIP reviewer has had a significant impact on my practice as a STEM Teacher and coach. I often use the rubric to help my teacher colleagues make adjustments to their current practice and instruction to encourage sensemaking and student voice."

FORMER PRP MEMBER

"Serving on the PRP has been the strongest professional learning of my career. Nothing has grown me more as an educator/curricular/instructional leader."

FORMER PRP MEMBER

NEXT STEPS FOR THE FIELD

In addition to the positive changes in the science instructional materials available to the field, The Critical Features analysis by NextGenScience and EdReports also found that some essential components of NGSS design were still not widespread in the field. As we look to the future, it is imperative that the science education community continue to expand on the work to increase the supply and demand of high-quality instructional materials. This will include:

NEXT STEPS

Raising awareness of existing high-quality science lessons and units and their instructional design;

Using rigorous tools and processes for state and district selection of science instructional materials; and

Engaging in curriculum-based professional learning using high-quality instructional materials.

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ABOUT NEXTGENSCIENCE

NextGenScience supports states, districts, educators, and other partners to design and identify quality, coherent programs that align science standards, instructional materials, professional learning, and assessments. NextGenScience was formerly the science team at Achieve — the nonprofit organization that coordinated the development of the Next Generation Science Standards (NGSS) — and continues Achieve's work with NGSS stewardship and implementation.

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