

NextGenScience Peer Review Panel Process

The NextGenScience Peer Review Panel (PRP) is a group of expert educators from across the country with expertise in the Next Generation Science Standards (NGSS) and the features of high-quality science instructional materials. PRP members evaluate free and publicly available science instructional materials using the Educators Evaluating the Quality of Instructional Products (EQuIP) Rubric, which includes 19 criteria, to determine the extent to which materials are designed for the NGSS, and then provide independent, third-party feedback to the developers of these materials.

The PRP for Science review process builds on the well-established process the [Mathematics and English Language Arts Peer Review Panel](#) used to identify high-quality examples in those content areas. PRP members are selected through a rigorous application process and participate in ongoing training and calibration exercises. All materials that undergo PRP review are fully reviewed individually by three PRP members, who then come together to create a consensus report to communicate their findings and provide formative feedback for the developer. Materials that receive a high rating on the EQuIP review are eligible to be shared online at nextgenscience.org as models for the field.

This document outlines key details about NextGenScience’s PRP Reviews including:

- [EQuIP Review Process and Timeline;](#)
- [Eligibility for “Quality Example of NGSS Design” Recognition;](#)
- [Reviewer Training and Professional Learning; and](#)
- [EQuIP Review Quality Control Mechanisms.](#)

How Does the PRP Review Process Work?



EQulP Review Process and Timeline

The entire EQulP review process takes eight to 10 weeks. Key steps of the process are outlined below:

Two weeks before review begins

- **Reviewer Selection.** NextGenScience assigns materials to reviewers based on the reviewers' content and grade-level area of expertise. Each review team is composed of one lead reviewer and two supporting reviewers, and review teams rotate throughout the year such that reviewers work closely with different team members on each review.

Weeks 1–3

- **Unit Assignments.** NextGenScience provides the review team with:
 - Assigned materials for review;
 - Roles and responsibilities during the review;
 - A timeline for the review, including the consensus conversation date and time;
 - The EQulP report template; and
 - Detailed scoring guidance for each EQulP criterion. A portion of this scoring guidance was adapted for external use and publicized as the *Toward NGSS Design: EQulP Rubric for Science Detailed Guidance* resource.
- **Individual Reviews.** Each member of the review team begins reviewing the full set of instructional materials and gathering evidence for all 19 EQulP criteria.
- **Check in.** NextGenScience checks in with the review team, elicits any concerns or questions, and sends reminders about the upcoming consensus call(s).

Week 4

- **Individual Reviews Complete.** Each member of the review team develops a fully completed EQulP review report for the instructional materials with claims, evidence, and reasoning for all 19 EQulP criteria. All members of the review team upload their individual EQulP report three days before the review consensus conversation.
- **Consensus Planning Document Compilation.** NextGenScience reviews individual EQulP reports and develops a Consensus Planning Document that compiles all claims, evidence, and reasoning from all members of the review team to prepare for the consensus conversation.
- **Consensus Preparation.** The lead reviewer reads and annotates the Consensus Planning Document to prepare for the consensus conversation, noting where criterion ratings and evidence collected differ. NextGenScience provides the review team with a "Discourse Sentence Starter" resource to support a robust consensus conversation.

- **Consensus Conversation.** The review team holds one or more two- to four-hour consensus conversations discussing their rating and evidence for each of the 19 EQulP criteria. Every consensus conversation includes the following:
 - The lead reviewer annotates the Consensus Planning Document to ensure the ideas and final decisions from the team are captured;
 - Reviewers consult the detailed EQulP scoring guidance to ensure their claims, evidence, and reasoning are aligned to each specific EQulP criterion; and
 - A member of the NextGenScience teams serves as a neutral facilitator to support the review team with reaching consensus and aligning with the EQulP scoring guidance.

Week 5

- **Final Report Development.** The lead reviewer gathers evidence from the Consensus Planning Document to develop the final EQulP consensus review report and scores. The lead reviewer uses an internal resource, the “Science Peer Review Panel Report Manual,” to ensure the final report meets the required style and organization of EQulP reports.

Week 6

- **Final Report Team Review.** The lead reviewer sends the final EQulP report to the other two members of the review team for their review and feedback.
- **Final Report First Revision.** The lead reviewer incorporates feedback from the other review team members, selects consensus ratings and scores, and sends the final EQulP report to the NextGenScience team for review.

Week 7

- **NextGenScience Review of Final Report.** NextGenScience reviews the final EQulP report to ensure that:
 - All EQulP criteria ratings reflect the evidence included in the reports and discussed in the consensus conversations.
 - Sufficient evidence and reasoning are provided to support the rating of each criterion.
 - Suggestions for improvements are provided for areas of growth.
 - NextGenScience sends the reviewed EQulP report back to the lead reviewer to address any comments and questions generated during the NextGenScience review.

Week 8

- **Final Report Second Revision.** The lead reviewer addresses all comments and questions in the EQulP final report with support and input from the review team. For example, if a rating change is necessary based on the evidence and reasoning provided, then the lead reviewer discusses the rating change with all members of the review team and ensures that there is consensus for the rating change.

- **Final Report Submission.** The lead reviewer sends the finalized EQuIP report to the NextGenScience team after all comments and questions have been addressed. NextGenScience sends the final EQuIP report to the developer.
- **Reviewer Survey.** All members of the review team complete a post-review survey to provide feedback on their review experience. NextGenScience reviews these survey results to identify and address concerns or needs of the reviewers.

Weeks 9 and 10 (For materials that are eligible to be posted publicly. See next section for more details.)

- **Copyediting.** NextGenScience submits the EQuIP report for professional copyediting.
- **Webpage.** NextGenScience develops a unique webpage for the materials on the “Quality Examples of Science Lessons and Units” page on nextgenscience.org.

Eligibility for “Quality Example of NGSS Design” Recognition

Materials that have earned one of the following scores are eligible to be posted publicly on nextgenscience.org as a quality example of NGSS design:

- **E:** Example of high quality NGSS design — High quality design for the NGSS across all three categories of the rubric; a lesson or unit with this rating will still need adjustments for a specific classroom, but the support is there to make this possible; exemplifies most criteria across Categories I, II, & III of the rubric (total score ~8–9).
- **E/I:** Example of high quality NGSS design if Improved — Adequate design for the NGSS but would benefit from some improvement in one or more categories; most criteria have at least adequate evidence (total score ~6–7).
- **Quality Work in Progress:** While not a category on the EQuIP Rubric, this designation is intended for materials that excel in a particular area of the EQuIP Rubric despite having a score of five or less. This allows the field to learn from concrete examples about one or more particular criteria.

Only materials that have earned an E: Example of high-quality NGSS design score are eligible to earn the NGSS Design Badge. Read more about the badge [here](#).

Reviewer Training and Professional Learning

Ongoing professional learning for PRP members is a critical piece of calibration and quality reviews.

Selection of PRP Members

- As the PRP begins work in a grade band, NextGenScience puts out a call for applications for educators with deep expertise in that grade band as well as with NGSS design of instructional materials.
- As part of the application process, all PRP members complete a performance task to demonstrate their understanding of NGSS design of instructional materials as well as their ability to apply criteria and clearly identify criterion-related evidence and reasoning in reviews of instructional materials.
- PRP members commit to serve as a reviewer during a minimum of a one-year review period and participate in ongoing professional learning to improve calibration with the PRP community.

Onboarding

- All PRP members attend an onboarding meeting following acceptance to the NextGenScience PRP. During this meeting, new PRP members develop a deeper understanding of the EQIP criteria, engage in calibration exercises, and become familiar with PRP processes and procedures.

Ongoing Professional Learning

- **PRP Meeting:** Every year, PRP members attend a two- to three-day professional learning workshop to deepen their understanding of the Science EQIP criteria based on the latest research and resources available in the field, strengthen their EQIP scoring calibration, and build a strong community of reviewers.
- **Virtual Professional Learning and Online Discussions:** As review questions arise, NextGenScience facilitates periodic discussions and reviewer calibration for PRP members through synchronous and asynchronous “mini courses” as well as through online bulletin board discussion posts. In addition, all PRP members are encouraged to use the shared online platform to collaborate outside of their assigned review team.

EQiP Review Quality Control Mechanisms

The EQiP review process includes several mechanisms designed to maximize interrater reliability and quality of reviews. These structures include:

Multiple Reviewers

- *What do we do?* Three reviewers with expertise in the grade, content area, and EQiP criteria are assigned to each unit. They individually review and collect evidence for the entire unit being reviewed. They do not share information about their individual reviews until the consensus conversation.
- *Why is this important to ensure quality?* Having multiple reviewers reduces missed evidence or misinterpretation of materials that may be more likely to happen with a single reviewer. Keeping these reviews strictly individual rather than collaborative helps reduce the groupthink phenomenon (i.e., reaching consensus without individual critical thinking or evaluation).

Structured Consensus Conversation

- *What do we do?* For each unit, NextGenScience facilitates a consensus call to calibrate on the degree to which the materials fulfill each EQiP criterion's requirements. Prior to the call, participants receive "Guidelines for Effective Consensus Conversation" and "Discourse Sentence Starter" resources to encourage equitable talk practices and productive conversations focused on the evidence in the materials.
- *Why is this important to ensure quality?* Consensus calls are facilitated by a NextGenScience staff member to ensure conversation remains evidence-based and all three reviewer voices are heard. Keeping the conversation evidence-based and having all expert reviewer views reflected in the consensus report improves the quality of the review and feedback.

Detailed EQiP Criterion Guidance

- *What do we do?* NextGenScience provides internal EQiP Rubric Scoring Guidance to guide reviewers in determining what rating to give materials based on the evidence and reasoning compiled. It plays a large role in individual reviews and consensus conversations. The document has been collaboratively developed and refined over the years by PRP members, Achieve, NSTA, and some of the NGSS writers. [A portion of this document is available publicly.](#)
- *Why is this important to ensure quality?* This guidance document improves the objectivity and consistency of EQiP reviews by providing concrete descriptors for each criterion and rating.

Report Template, Template Guidelines, and Science PRP Report Manual

- *What do we do?* NextGenScience provides reviewers with a Report Manual, which includes guidance on how to organize the report (e.g., summary, evidence, suggestions for improvement, etc.) as well as suggestions for how to write those report sections with clarity.
- *Why is this important to ensure quality?* Quality EQuIP reviews do not benefit developers or users if they aren't written clearly. This resource allows the expertise and quality review process to be effectively communicated while minimizing formatting frustrations.

NextGenScience Final Report Review

- *What do we do?* NextGenScience reviews the final EQuIP report to ensure that:
 - All EQuIP criteria ratings reflect the evidence included in the reports and discussed in the consensus conversation.
 - Sufficient evidence and reasoning are provided to support the rating of each criterion.
 - Suggestions for improvements are provided for areas of growth.
 - NextGenScience sends the reviewed EQuIP report back to the lead reviewer to address all comments and questions.
- *Why is this important to ensure quality?* This key step in the process ensures the content of the report is clear, supported by evidence, and includes feedback consistent with other reports.

Ongoing Professional Learning for PRP

- *What do we do?* See the section on [Reviewer Training and Professional Learning](#) to learn about frequency and areas of focus.
- *Why is this important to ensure quality?* Ongoing professional learning for PRP members is a necessity in order to continually calibrate understanding of EQuIP criteria and the features of quality material evaluations. Members also build relationships during professional learning opportunities, which leads to better communication and trust during consensus conversations and higher quality reviews overall.

Process and Timeline Management

- *What do we do?* NextGenScience manages the review process and provides necessary accountability structures to keep the team on track. See the [PRP Review Process and Timeline](#) section for more information about the eight- to 10-week timeline.
- *Why is this important to ensure quality?* Careful management is required to ensure quality and timeliness of EQuIP reviews. For example, if too much time passes between individual reviews and consensus conversations, reviewers are not able to discuss their evaluations as robustly, potentially decreasing the quality of final outcomes.