Amplify Science

Grades 6–8

Approach to assessment

The Amplify Science assessment system is grounded in the principle that students benefit from regular and varied opportunities to demonstrate understanding through performance. In practice this means that, for assessment opportunities in each Amplify Science unit, conceptual understanding is revealed through engagement in the science and engineering practices.

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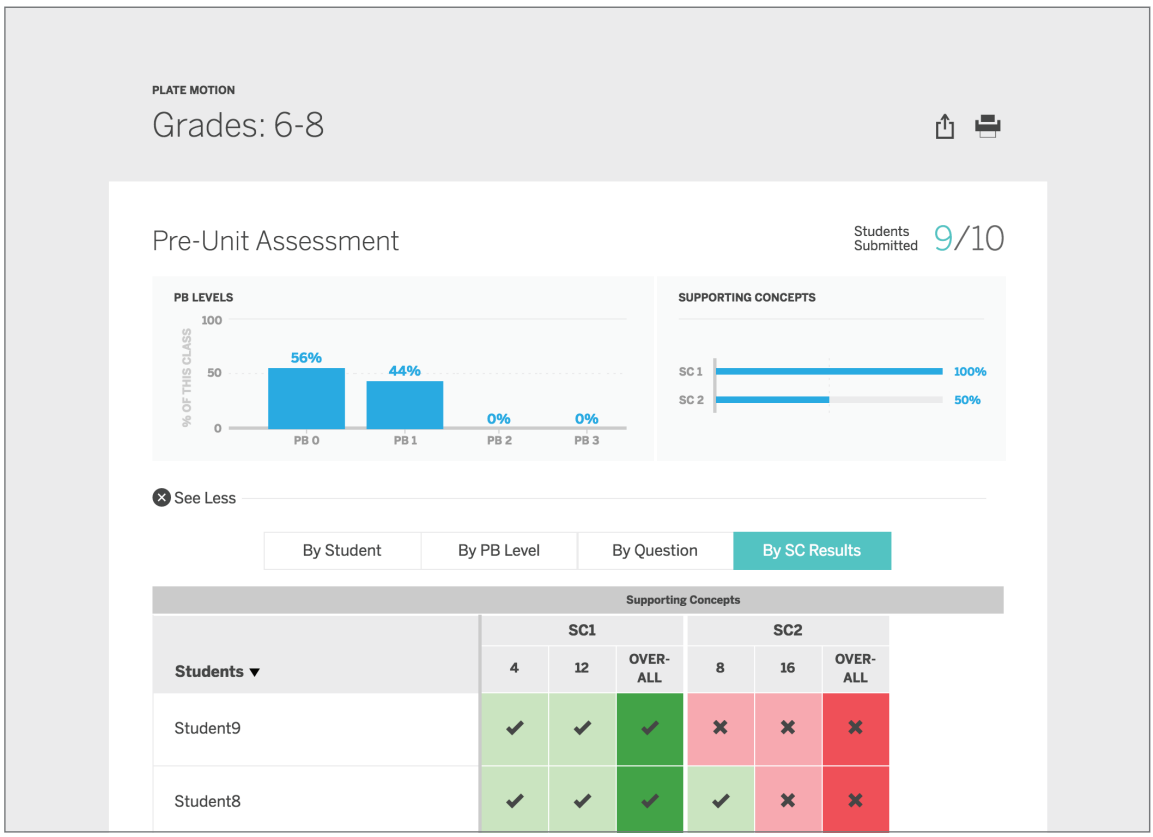
The Amplify Science assessment system

The system of assessment for each Amplify Science unit is designed to provide teachers with credible, actionable, and timely information about student progress toward the unit's learning goals, including their mastery of disciplinary core ideas, science and engineering practices, and crosscutting concepts. As a system, these assessment opportunities encompass a range of modalities and reflect current research on effective assessment strategies and the principles outlined in the NGSS and the National Research Council's Framework for K–12 Science Education (2012).

Formative assessments to illuminate student thinking

Each unit includes a range of formative assessments embedded in instruction with the goal of providing regular, actionable information to the teacher with minimal impact on instructional time. Assessments include frequent unobtrusive observational assessments, end of chapter scientific explanations, evidence-based arguments, modeling activities, and student self-reflections. Each assessment includes guidance for the teacher on what misconceptions to look for and suggestions on how to adjust instruction accordingly.

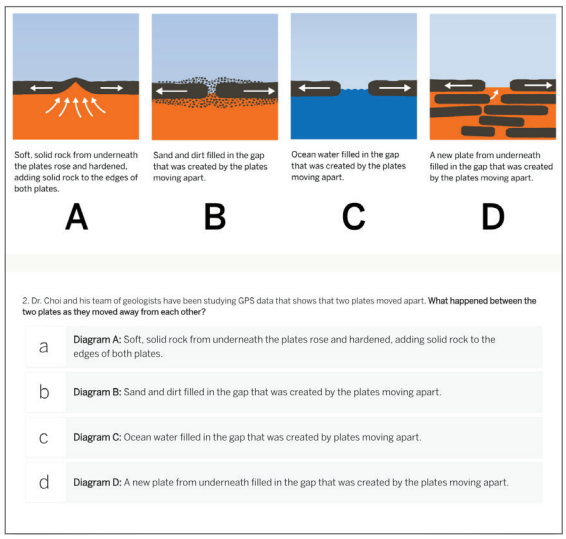
When assessments are taken online, teachers have access to the Reporting tool, which offers an "at-a-glance" view of student and class performance on each unit assessment, as well as visualizations of student growth, analysis of class responses to individual questions, and automated grouping of students to drive the delivery of differentiated lesson content.

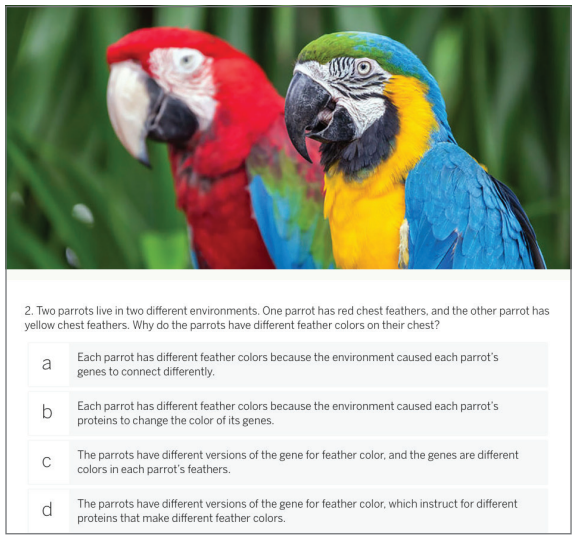


Teacher view of student performance on formative assessments

Summative assessments to measure student growth and comprehension

Science Seminars provide a culminating performance task for each core unit where students are introduced to a new real-world problem, collect and analyze evidence, examine a number of claims, and then engage in a full-class discussion and write a Final Written Argument where they must state which claims are best supported by the evidence. Each unit then concludes with a summative End-of-Unit Assessment that measures student mastery of the unit's learning goals with auto-scored multiple choice questions and rubric-scored written-response questions.





Example questions from End-of-Unit Summative Assessments

Three-dimensional assessment opportunities make measuring progress toward NGSS learning goals possible.

Assessment opportunities include clear labeling around the Disciplinary Core Ideas (DCIs), Crosscutting Concepts (CCCs), and Science and Engineering Practices (SEPs) to help teachers connect formative and summative assessments, to specific NGSS dimensions.

Assessment Opportunity	Next Generation Science Standards
Lesson 1.1, Activities 1-3: Multiple-Choice and Written-Response Questions **Assessment Type:** Pre-Unit Assessment **Evaluation Guidance:** • Auto-Scored Through *Reporting* (Selected-Response Items) • Rubrics & Possible Student Responses for DCIs & CCCs (Constructed-Response Items)	**DCIs:** • LS1.A: Structure and Function • LS1.C: Organization for Matter and Energy Flow in Organisms • PS3.D: Energy in Chemical Processes and Everyday Life **SEPs:** • Practice 4: Analyzing and Interpreting Data • Practice 6: Constructing Explanations and Designing Solutions • Practice 8: Obtaining, Evaluating, and Communicating Information **CCC:** • Systems and System Models

DCI, SEP, and CCC labeling, for assessments in the Assessment System unit overview document

The variety of assessment options for Amplify Science 6–8 include:

F: formative **S: Summative**

- **Pre-Unit Assessment (F):**
  Auto-scored multiple choice questions and rubric-scored written-response questions.
- **On-the-Fly Assessments (OtFA) (F):**
  3–4 per chapter; three-dimensional tasks integrated regularly throughout the lessons. OtFA opportunities were designed to help a teacher make sense of student activity during a learning experience (e.g., student-to-student talk, writing, model construction) and to provide evidence of how a student is coming to understand core concepts and developing dexterity with SEPs and CCCs. Each OtFA includes specific guidance for the teacher to adjust instruction in response to assessment information.
- **End-of-Chapter Explanations (F):**
  Variety of multidimensional performance tasks intended to assess student progress, occurring at the end of each chapter. Examples include writing scientific explanations, engaging in argumentation, developing and using models, and designing engineering solutions.
- **Self-assessments (F):**
  One per chapter; brief opportunities for students to reflect on their own learning, ask questions, and reveal ongoing wonderings about unit content.
- **Critical Juncture Assessment (F):**
  Occurring toward the midpoint of each unit, similar in format to the Pre-Unit and End-of-Unit assessments; auto-scored multiple choice questions and rubric-scored written-response questions. Student performance on the CJ guides the differentiated instruction in the next lesson.
- **Science Seminar & Final Written Argument (S for unit concepts; F for the practice of scientific argumentation):**
  Culminating performance task for each unit; includes a rubric for assessing core unit concepts and a rubric for assessing students' developing facility with the practice of scientific argumentation.
- **End-of-Unit Assessment (S):**
  Auto-scored multiple choice questions and rubric-scored written-response questions.