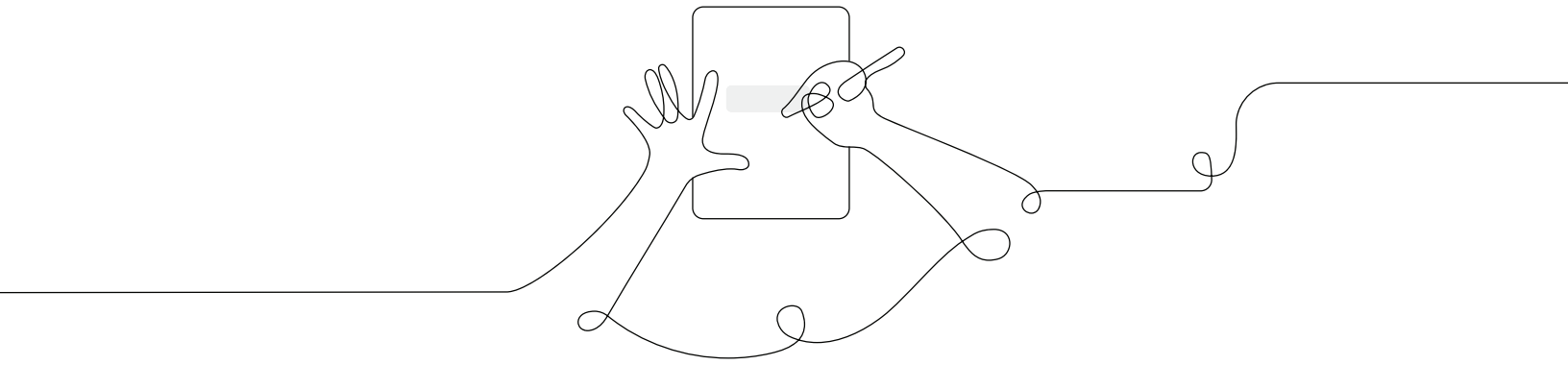
Amplify Science

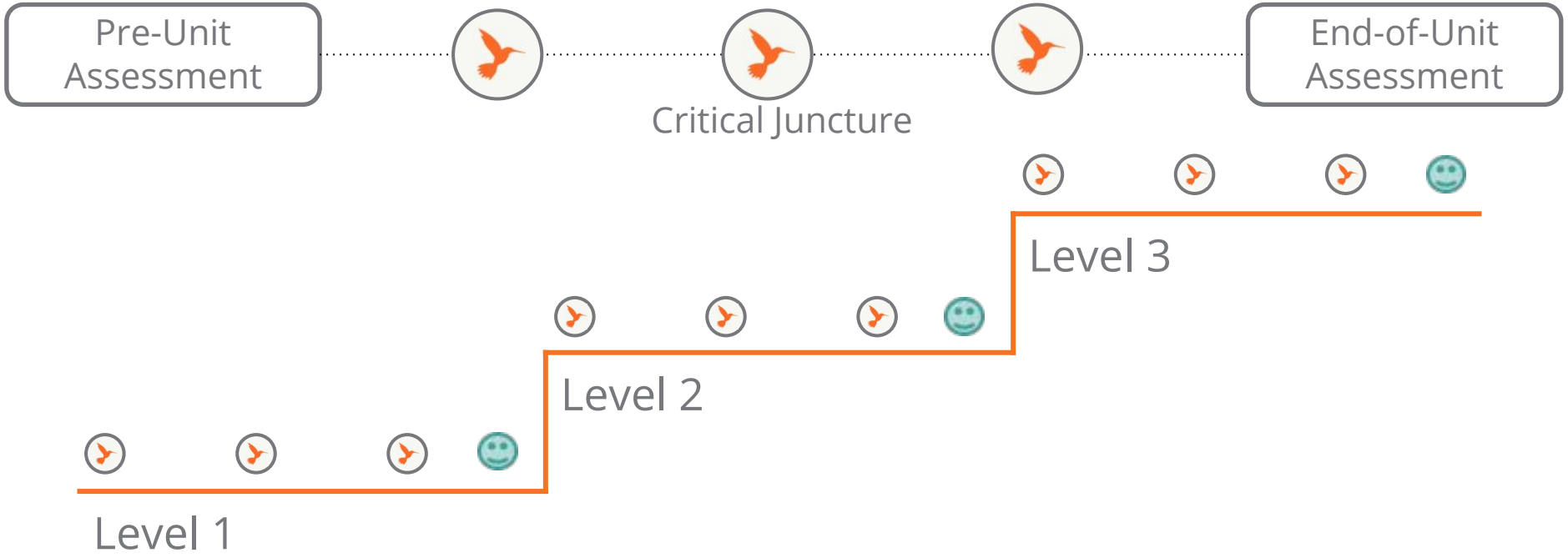
Participant Notebook

Assessments

Grades K–5



K-5 Assessment System



Progress Build Analysis

Instructions:

1. Open the Progress Build document in the Planning for the Unit section of the Unit Guide.
2. **STARTING WITH THE BOX AT THE BOTTOM OF THE PAGE,** summarize each Progress Build level. Feel free to draw if it's helpful.
3. In between the boxes, reflect on how the ideas build from one level to the next by answering the two questions.

Level 3:

What new ideas are added in level 3?

How do those new ideas build on and connect to level 2?

Level 2:

What new ideas are added in level 2?

How do those new ideas build on and connect to level 1?

Level 1:

Level 0 (preconceptions/prior knowledge):

Embedded Formative Assessment

On-the-Fly Assessment 5: Parts of the Plant System

Look for: As students work, circulate and look at students' drawings, and listen to students sharing with partners. Listen for how well students are able to express the idea that a plant is a system made up of different parts (leaves, stems, roots), and that each of these parts has a unique role so that the plant can live and grow. This activity helps students to construct understanding of the Crosscutting Concepts of Structure and Function and Systems and System Models.

Now what? It is okay if students are unsure of the function of each plant part within the plant system. Students will investigate plant part functions in Lesson 2.2 as they read and discuss the book *A Plant Is a System*. However, make note of what your students already know, don't know, or have alternate conceptions about with regards to plant part function. Build on these ideas in the next lesson.

Assessment System reference (grades K-1)

Assessment type	Description	Student experience	Teacher resources
Pre-Unit Assessment	Formative, 3-D performance assessment meant to gauge students' initial understanding and pre-conceptions about core ideas in the unit	• Full-class teacher-led discussion, supported by visual cues	• Assessment Guide (available in Digital Resources)
End-of-Unit Assessment	Summative, 3-D performance assessment to evaluate students' understanding of core ideas in the Progress Build	• Full-class teacher-led discussion, supported by visual cues	• Rubric and Possible Responses in Assessment Guide (available in Digital Resources)
Critical Juncture Assessments	Embedded formative assessments for assessing students' progress along the Progress Build	• Activities are embedded into existing instructional activities leveraged for assessment opportunities – often student-to-student discussions, investigations, or modeling activities	• Full text of assessment includes "Assess Understanding" section and "Tailor Instruction" suggestions accessible in Instructional Guide by clicking the hummingbird icon • All Critical Juncture Assessments are included in Reference: Embedded Formative Assessments (available in the Unit Guide) • Clipboard Assessment Tool includes tailored sets of questions and the specific activities that present an opportunity to ask those questions. Also included is space to write notes about students' ideas. • Augmenting Instruction notes (accessible in Teacher Support tab) provide additional suggestions for supplemental instruction at the class, group, and student level
On-the-Fly Assessments	Embedded formative assessments for noting students' progress with one or more of the following: science disciplinary core ideas, science and engineering practices, crosscutting concepts, sense-making strategies, and collaborative science work	• Activities are embedded into existing instructional activities, leveraged for assessment opportunities. Artifacts can include full-class or student-to-student discussion, kinesthetic activities, notebook pages, etc.	• Full text of assessment includes what to "Look for" and "Now What?" instructional suggestions accessible in Instructional Guide by clicking the hummingbird icon • All On-the-Fly Assessments are included in Reference: Embedded Formative Assessments (available in the Unit Guide) • Clipboard Assessment Tool includes tailored sets of questions and the specific activities that present an opportunity to ask those questions. Also included is space to write notes about students' ideas.

Assessment System reference (grades K-1) cont.

Assessment type	Description	Student experience	Teacher resources
Student Self-Assessments	Opportunity for students to reflect on whether they understand or don't yet understand the core concepts from the unit	• Reflection prompts through teacher-led discussion and partner talk • Provided at or near the end of each chapter	• Information about Student Self-Assessments in Reference: Assessment System (in Unit Overview) • Teacher Support Notes accessible in Instructional Guide by clicking the Teacher Support tab • Discussion prompts in the Instructional Guide
Investigation Assessments	Summative, 3-D performance assessment to evaluate students' performance of the science and engineering practices of Planning and Carrying Out Investigations and Analyzing and Interpreting Data, as well as their application of disciplinary core ideas and crosscutting concepts	• Prompts for planning investigation and recording results in the Investigation Notebook or a copymaster (available in Digital Resources). Additional support and spoken teacher prompts in K-1. • Physical materials for conducting investigation	• Rubrics and Possible Responses in Assessment Guide (available in Digital Resources) • Possible Responses also accessible in Instructional Guide by clicking the Possible Responses tab
Portfolio Assessments	Opportunity for students to compile and reflect on key work products collected at the end of each unit. Final portfolio compilation occurs at the end of the school year and allows students to select and reflect on work products which they feel best demonstrate their growth in understanding throughout the year	• Compilation of work products that show growth over the course of the year • Reflection on chosen work products • Rubrics for evaluating work products (available in Program Guide → *Assessments → Additional Assessment Resources*)	• Assessment Rubrics (available in Program Guide → *Assessments → Additional Assessment Resources*) • Guidance for communicating to parents about student progress (available in Program Guide → *Assessments → Additional Assessment Resources*)

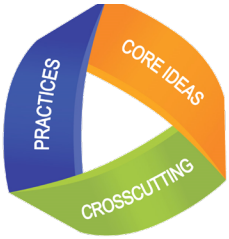
Assessment System reference (grades 2-5)

Assessment type	Description	Student experience	Teacher resources
Pre-Unit Assessment	Formative, 3-D performance assessment meant to gauge students' initial understanding and pre-conceptions about core ideas in the unit	• Pre-Unit Writing copymaster (available in Digital Resources)	• Assessment Guide (available in Digital Resources)
End-of-Unit Assessment	Summative, 3-D performance assessment to evaluate students' understanding of core ideas in the Progress Build	• End-of-Unit Writing copymaster, Versions A and B (available in Digital Resources) • For select units, End-of-Unit Writing Part 2 (available in Digital Resources or the Investigation Notebook)	• Rubric and Possible Responses in Assessment Guide (available in Digital Resources)
Critical Juncture Assessments	Embedded formative assessments for assessing students' progress along the Progress Build	• Written task in the Investigation Notebook • For written explanation and argumentation-based tasks, scaffolded version of assessment provided as a copymaster (available in Digital Resources)	• Full text of assessment includes "Assess Understanding" section and "Tailor Instruction" suggestions accessible in Instructional Guide by clicking the hummingbird icon • All Critical Juncture Assessments are included in Reference: Embedded Formative Assessments (available in the Unit Guide) • Possible Responses accessible in Instructional Guide by clicking the Possible Responses tab • For written explanation and argumentation-based tasks, Rubrics and Possible Responses in Assessment Guide (available in Digital Resources)
On-the-Fly Assessments	Embedded formative assessments for noting students' progress with one or more of the following: science disciplinary core ideas, science and engineering practices, crosscutting concepts, sense-making strategies, and collaborative science work	• Activities are embedded into existing instructional activities, leveraged for assessment opportunities. Artifacts can include discussion, use of a digital tool, notebook pages, etc.	• Full text of assessment includes what to "Look for" and "Now What?" instructional suggestions accessible in Instructional Guide by clicking the hummingbird icon • All On-the-Fly Assessments are included in Reference: Embedded Formative Assessments (available in the Unit Guide)

Assessment System reference (grades 2-5) cont.

Assessment type	Description	Student experience	Teacher resources
Student Self-Assessments	Opportunity for students to reflect on whether they understand or don't yet understand the core concepts from the unit	• Reflection prompts in the Investigation Notebook • Provided at or near the end of each chapter	• Information about Student Self-Assessments in Reference: Assessment System (available in the Unit Guide) • Teacher Support notes accessible in Instructional Guide by clicking the Teacher Support tab
Investigation Assessments	Summative, 3-D performance assessment to evaluate students' performance of the science and engineering practices of Planning and Carrying Out Investigations and Analyzing and Interpreting Data, as well as their application of disciplinary core ideas and crosscutting concepts	• Prompts for planning investigation and recording results in the Investigation Notebook or a copymaster or copymaster (available in Digital Resources) • Materials (physical or digital) for conducting investigation	• Rubrics and Possible Responses in Assessment Guide (available in Digital Resources) • Possible Responses also accessible in Instructional Guide by clicking the Possible Responses tab
Portfolio Assessments	Opportunity for students to compile and reflect on key work products collected at the end of each unit. Final portfolio compilation occurs at the end of the school year and allows students to select and reflect on work products which they feel best demonstrate their growth in understanding throughout the year	• Compilation of work products (written explanations and/or arguments, models) that show growth over the course of the year • Reflection on chosen work products • Rubrics for evaluating work products (available in Program Guide → *Assessments* → *Additional Assessment Resources*)	• Assessment Rubrics (available in Program Guide → *Assessments* → *Additional Assessment Resources*) • Guidance for communicating to parents about student progress (available in Program Guide → *Assessments* → *Additional Assessment Resources*)

Three dimensions of NGSS reference



3-D learning engages students in using scientific and engineering practices and applying crosscutting concepts as tools to develop understanding of and solve challenging problems related to disciplinary core ideas.

Science and Engineering Practices

1. **Asking Questions and Defining Problems**
2. **Developing and Using Models**
3. **Planning and Carrying Out Investigations**
4. **Analyzing and Interpreting Data**
5. **Using Mathematics and Computational Thinking**
6. **Constructing Explanations and Designing Solutions**
7. **Engaging in Argument from Evidence**
8. **Obtaining, Evaluating, and Communicating Information**

Disciplinary Core Ideas

Earth and Space Sciences:
ESS1: Earth's Place in the Universe
ESS2: Earth's Systems
ESS3: Earth and Human Activity

Life Sciences:
LS1: From Molecules to Organisms
LS2: Ecosystems
LS3: Heredity
LS4: Biological Evolution

Physical Sciences:
PS1: Matter and its Interactions
PS2: Motion and Stability
PS3: Energy
PS4: Waves and their Applications

Engineering, Technology and the Applications of Science:
ETS1: Engineering Design
ETS2: Links among Engineering Technology, Science and Society

Crosscutting Concepts

1. **Patterns**
2. **Cause and Effect**
3. **Scale, Proportion, and Quantity**
4. **Systems and System Models**
5. **Energy and Matter**
6. **Structure and Function**
7. **Stability and Change**

Assessments and Grading

Assessment for Learning: The Amplify Science Approach

Each unit's Progress Build, which aligns with the NGSS disciplinary core ideas and crosscutting concepts, specifies the expected progression of students' understanding in the unit and outlines how the explanation students are working toward should develop and deepen over the course of the unit's learning experiences. The levels of a Progress Build are cumulative; as students progress through the unit, they are able to integrate prior understandings with new ones. Thus, students at the highest level of a Progress Build are able to construct a deep, causal explanation about a real-world phenomenon that draws on all core content of a unit. Due to the cumulative nature of the Progress Build in each unit, there are continuing opportunities for students to master conceptual understanding of early unit content in subsequent chapters of the unit.

Structuring units around Progress Builds allows for intentional and strategic assessment opportunities. The Amplify Science Assessment System prioritizes *formative* assessment because of the ongoing opportunities throughout a unit for students to develop their understanding. For example, we often incorporate an assessment at the end of Chapter 1 of a unit; however, units are structured in a way that will allow students to continue strengthening their understanding of Chapter 1 content in subsequent chapters. Therefore, we consider that Chapter 1 assessment to be a *formative* measure of students' evolving knowledge. That assessment generates students' work that an educator can use to monitor progress and inform future instructional decisions. The majority of assessments included within our Assessment System represent formative opportunities to gather actionable information about students' progress toward understanding concepts in the Progress Build and their developing dexterity with targeted science practices. That is, the assessments are designed to support learning.

Suggestions for Assigning Grades to Student Work

We recommend a three-pronged approach to evaluating students' learning progress that includes attention to: 1) demonstrated **proficiency** (summative at the *unit level* for disciplinary core ideas and at the *course or grade level* for science and engineering practices and crosscutting concepts), 2) **habits of work** demonstrated through conscientious completion of assigned tasks, and 3) demonstrated **growth** across pre-unit assessments, Critical Junctures Assessments, and end-of-unit assessments.

- Assessing students' understanding:
  - End-of-Unit Assessment
  - Investigation Assessment
- Assessing habits of work:
  - demonstrated effort in completing in-class notebook pages
  - demonstrated effort in completing optional assignments, such as Home Investigations (one per chapter), Daily Written Reflection notebook pages (one per day), Getting Ready to Read notebook pages (one per book), and Reading Reflection notebook pages (one per book)
  - observed diligence in engaging with science and engineering practice
  - nature of collaboration during partner and group activities (e.g., level of cooperation)
- Assessing growth across the unit:
  - evidence from demonstrated changes across pre-unit assessment, Critical Juncture Assessments, and end-of-unit assessment
  - progress across independently written and diagrammed scientific explanations (Lessons 2.5, 3.6, 4.4)

Formative Assessments *Not* Recommended for Grading

Related to the formative assessments listed below, we recommend using caution if assigning grades to students' written explanations, arguments, and/or models at the end of early chapters. While these tasks are an opportunity for students to demonstrate understanding of content introduced up to that point in the unit, the Amplify Science curriculum is designed to support students on different learning paths, and students will continue to have opportunities to build understanding of these ideas through the end of the unit.

- Pre-Unit Assessment
- Critical Juncture Assessments
- On-the-Fly Assessments

Additional Amplify resources

Program Guide

Additional insight into the program's structure, intent, philosophies, supports, and flexibility.

https://my.amplify.com/programguide

California Edition:
http://amplify.com/science/california/review

Louisiana Edition:
https://my.amplify.com/programguide/content/louisiana/welcome/elementary-school/

Amplify Help

Frequently updated compilation of articles with advice and answers from the Amplify team.

my.amplify.com/help

Caregivers Site

https://amplify.com/amplify-science-family-resource-intro/

Amplify Support

Contact the Amplify support team for information specific to enrollment and rosters, technical support, materials and kits, and teaching support, weekdays 7AM-10PM EST and weekends 10AM-6PM EST.

Email: help@amplify.com

Email: edsupport@amplify.com (pedagogical questions)

Phone: 800-823-1969

Or, reach Amplify Chat by clicking the  icon at the bottom right of the digital Teacher's Guide.

When contacting the support team:

- Identify yourself as an Amplify Science user.
- Note the unit you are teaching.
- Note the type of device you are using (Chromebook, iPad, Windows, laptop).
- Note the web browser you are using (Chrome or Safari).
- Include a screenshot of the problem, if possible. Copy your district or site IT contact on emails.

Notes

Amplify Science@Home resources reference

Use this guide to keep track of the different resources available for remote and hybrid learning.

Instructional materials: Click Remote and hybrid learning resources, then select your grade level from the dropdown menu. Select your unit.	
@Home Unit resources: These will appear when you select your unit.	
Teacher Overview	General information for teaching with @Home Units, planning information, chapter and lesson outlines
Lesson Index	Lists the original Amplify Science lessons associated with each @Home lesson, and the Investigation Notebook pages, copymasters, and print materials associated with the @Home Unit Student Sheets
Family Overview	Information to send home to families to help them support students with remote learning
Student lesson materials for @Home Units	Printable or digital lessons condensed to be about 30 minutes long. You can access compilations of all student materials for your unit, or select from individual lessons.
@Home Video resources: After selecting your grade level and unit, select the @Home Videos tab below your unit title.	
@Home Video links	Links to video lessons that include all activities from the original units. Lesson playlists are on YouTube, and they autoplay in a playlist form.
Additional remote and hybrid instructional materials: These can be accessed from the tabs below your unit title.	
Hands-on investigations support	Videos of every unit's hands-on activities (note, these videos also appear in the student lesson materials).
Read-aloud videos	Link to a YouTube playlist of read-aloud videos of all books in your unit.
Orientation and Tutorials: Click Remote and hybrid learning resources, then select your grade from the dropdown menu. Click Orientation and Tutorials. You'll not only find videos to help you use the resources, but also videos you can share with students and caregivers.	