Amplify Science

Grades 6–8

Program structure and components

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Year at a glance

Units per year

9

Unit types

Launch
Launch units are the first unit taught in each year of Amplify Science. The goal of the Launch unit is to introduce students to norms, routines, and practices that will be built on throughout the year, including the practices of argumentation, active reading, and using the Amplify Science technology. For example, rather than taking the time to explain the process of active reading in every unit in a given year, it is explained thoroughly in the Launch unit, thereby preparing students to do active reading in all subsequent units.

Core
The majority of units in a course are Core units, which guide students in constructing a deep understanding of important science concepts by using key science and engineering practices. A Core unit establishes the context of the unit by introducing students to the real-world problem they will be investigating. As students move through lessons in a Core unit, they will figure out the unit's anchoring phenomena, gain an understanding of the unit's disciplinary core ideas and science and engineering practices, and make linkages across topics through the crosscutting concepts. Each Core unit culminates with a Science Seminar and final writing activity. Students explore a new real-world problem, collect and analyze evidence, and then debate which claims are best supported by evidence, all while making clear their reasoning that connects the evidence to the claims.

Engineering Internship units
In Engineering Internship units, students take on the role of interns for the fictional Futura company as they design solutions for real-world problems. Students figure out how to help those in need, from tsunami victims in Sri Lanka to the needs of premature babies, through the application of engineering practices. In the process, they apply and deepen their learning from Core units.

Course structure*

Key

L Launch C Core E Engineering Internship

Grade 6 (145 lessons)

Microbiome **11 lessons** L
Metabolism **19 lessons** C
Metabolism Engineering Internship **10 lessons** E
Traits and Reproduction **19 lessons** C
Thermal Energy **19 lessons** C
Ocean, Atmosphere, and Climate **19 lessons** C
Weather Patterns **19 lessons** C
Earth's Changing Climate **19 lessons** C
Earth's Changing Climate Engineering Internship **10 lessons** E

Grade 7 (145 lessons)

Geology on Mars **11 lessons** L
Plate Motion **19 lessons** C
Plate Motion Engineering Internship **10 lessons** E
Rock Transformations **19 lessons** C
Phase Change **19 lessons** C
Phase Change Engineering Internship **10 lessons** E
Chemical Reactions **19 lessons** C
Populations and Resources **19 lessons** C
Matter and Energy in Ecosystems **19 lessons** C

Grade 8 (145 lessons)

Harnessing Human Energy **11 lessons** L
Force and Motion **19 lessons** C
Force and Motion Engineering Internship **10 lessons** E
Magnetic Fields **19 lessons** C
Light Waves **19 lessons** C
Earth, Moon, and Sun **19 lessons** C
Natural Selection **19 lessons** C
Natural Selection Engineering Internship **10 lessons** E
Evolutionary History **19 lessons** C

*Example integrated sequence shown here. Amplify will work with you to design an integrated or domain sequence that will fit your school or district's needs.

Unit at a glance

Lessons per unit

Launch units:
11
lessons

Core units:
16
lessons plus three formal assessment days

Engineering Internship units:
10
lessons

Lesson length

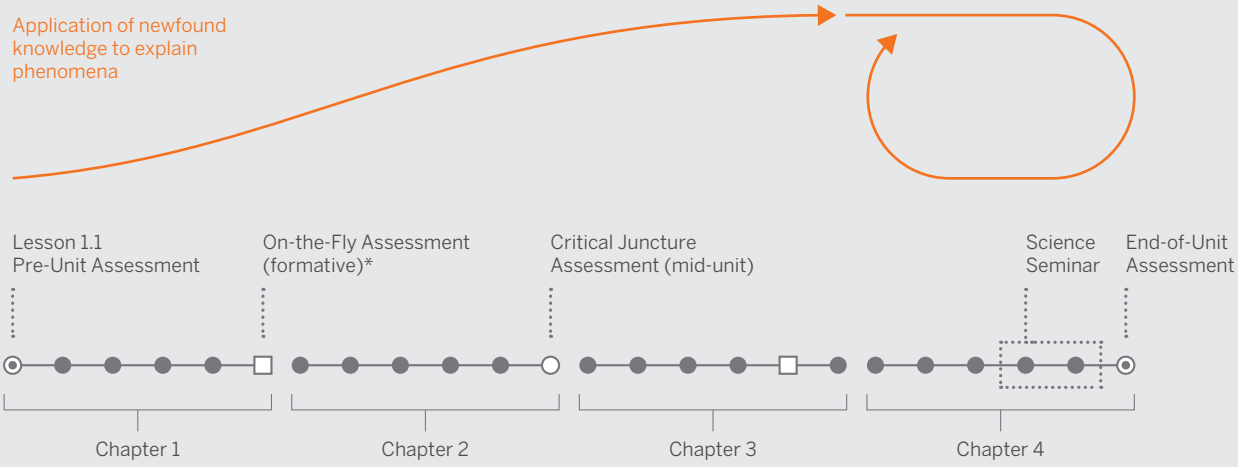
All unit types:
45
minutes

Our phenomena-based approach

In each Amplify Science unit, students are asked to inhabit the role of a scientist or engineer in order to investigate a real-world problem. These real-world problems provide relevant, 21st-century contexts through which students will investigate different scientific phenomena. Students work to define the problem and collect and make sense of evidence from multiple sources and through a variety of modalities. At the end of the unit, students are presented with a brand new problem, giving them an opportunity to apply what they've learned over the course of the unit to a new context. This represents a shift from asking students to *learn about* science to supporting students in *figuring out* the science.

Unit stages

1. Students are introduced to a real-world problem.
2. Students collect evidence from multiple sources and build increasingly complex explanations.
3. Students apply what they've learned to a different problem.



*On-the-Fly Assessments appear throughout each unit.

Lessons at a glance

Amplify Science is rooted in the research-based **Do, Talk, Read, Write, Visualize** model of learning. Students engage with science and engineering practices, figure out disciplinary core ideas, and utilize and apply crosscutting concepts in multiple modalities across thoughtful, structured lessons, all centered around engaging anchor phenomena. Each lesson features a unique mix of activities that provide students with multiple points of entry into the instruction.

Do

First-hand investigations are an important part of any science classroom, and Amplify Science has students getting hands-on in every unit—from exploring collision forces to experimenting with electrical systems.

Talk

Student-to-student discourse and full-class discussions are integral parts of the program. The program fosters a collaborative classroom environment by providing students with numerous opportunities to engage in meaningful oral scientific argumentation, both one-on-one and in full-class discussions.

Read

Students learn how to read like scientists using scientific articles developed by the Lawrence Hall of Science specifically for Amplify Science. These articles engage students in close reading strategies, and in learning to read for a purpose—for example, finding evidence to support a claim.

Write

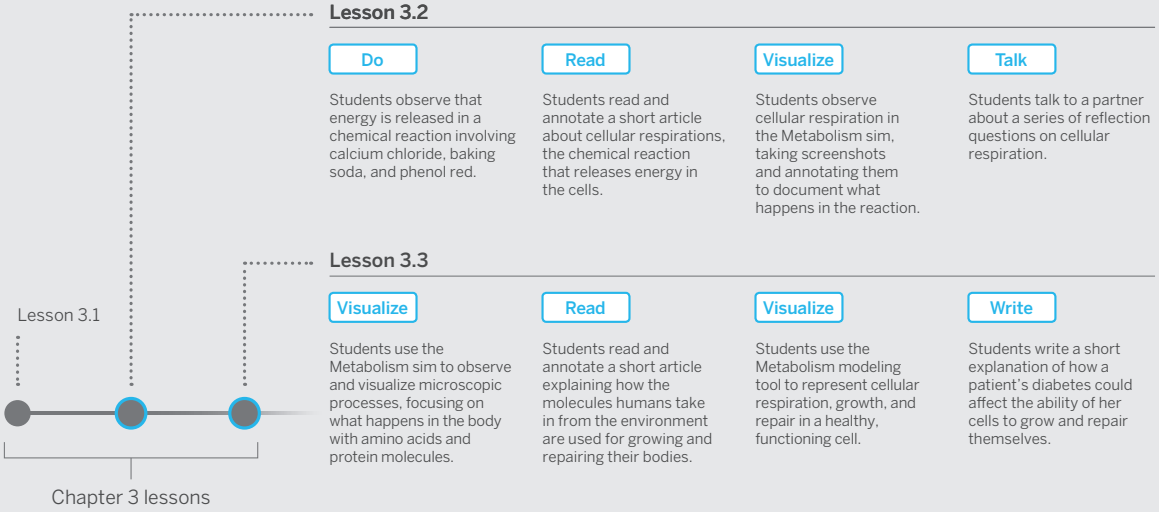
Students write like scientists, generating scientific explanations of the phenomena they investigate, and using evidence to construct scientific arguments. Students learn to articulate their reasoning in order to show how their evidence is connected to a claim.

Visualize

By engaging with simulations, media, and modeling tools, students are empowered to visualize scientific phenomena in ways never possible before.

Example from a unit: *Metabolism*

Through inhabiting the role of medical students in a hospital, students are able to draw the connections between the large-scale, macro-level experiences of the body and the micro-level processes that make the body function. These two example lessons illustrate how students engage in multiple modalities to figure out science ideas.



About the program

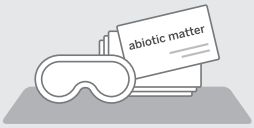
Amplify Science is a **new blended curriculum for grades K–8 that meets 100 percent of the Next Generation Science Standards**. A rich blend of physical materials and digital learning tools, the multimodal program includes: detailed lesson plans, hands-on activities, scientific texts, robust simulations, engaging media, physical and digital models, formative assessments, benchmark assessments, and a variety of embedded teacher supports and professional development options.

With Amplify Science, students learn to talk, read, write, think, and argue like real scientists and engineers through investigations of real-world problems and scientific phenomena, gaining the skills needed to master the NGSS.

With Amplify Science, you'll find:

- **Lessons written to address 100 percent of the Next Generation Science Standards** as well as a significant portion of reading and math standards at each grade level.
- **Kits and manipulatives** that emphasize the importance of hands-on investigations in the 21st-century classroom.
- **Engaging media** in each unit that draw students into the authentic problem-solving context and narrative.
- **Literacy-rich activities** that support students in making claims, leveraging evidence, drawing conclusions from data, and sharing their ideas through oral and written explanations and arguments.

Program components



Classroom kits

- Hands-on materials
- Printed classroom display materials

Print materials

- Student Investigation Notebooks with Article Compilations
- Print Teacher's Guides

Digital tools

- Digital Teacher's Guide
- Digital student experience
- Videos
- Simulations (sims)
- Futura Workspace (Engineering Internships)

Assessments

- Pre-/End-of-Unit Assessments
- Critical Juncture Assessments
- On-the-Fly Assessments (formative)
- Benchmark Assessments*

*Developed by Amplify outside of the Amplify Science program.

For more information on Amplify Science, visit **amplify.com/science**.

Amplify.

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