

What's new: Back-to-school 2018

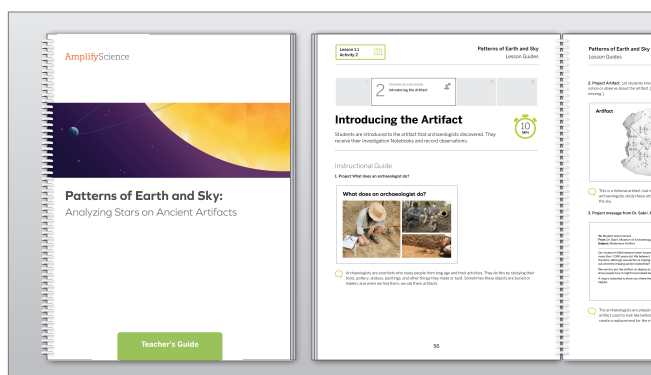
K-5

Back to school 2018 is here! This document will outline the changes you need to be aware of to be successful with the 2018 version of Amplify Science.

Improved teacher resources

Print Teacher's Guides K-5

Print Teacher's Guides are now available for purchase for each unit, containing all of the information found in the digital Teacher's Guide, including all unit overview documents, complete lesson guides, standards alignment, differentiation strategies, and more. Furthermore, teachers also have the option of downloading individual parts or the entire unit Teacher's Guide as a PDF file.



Updated Unit Guide experience K-5

All unit overview documents ("Unit Guide") are now easier to find and are located just below the list of chapters on each unit page. Materials have been grouped into two sections, "Planning for the Unit" and "Teacher References", and can now be viewed directly on the curriculum website with no need to download each document (though the option to download a PDF is still available). A Printable Resources section has also been added along the right side of the page for easy download access to common print materials.

The screenshot shows the Amplify Science website interface for the 'Patterns of Earth and Sky' unit. At the top, there is a navigation bar with the Amplify Science logo and the unit title. Below the navigation bar, there is a section titled 'Patterns of Earth and Sky' with a '22 Lessons' indicator. A 'Generate Printable Teacher's Guide' button is prominently displayed. A dropdown menu is open, showing options for 'Full Teacher's Guide' (including Unit Guide & all 18 Lesson Guides) and 'Lesson Guides only' (including 18 Lesson Guides). Below this, there is a section for 'Unit Overview' with a dropdown menu. To the right, there is a 'Printable Resources' section with links to 'Copymaster Compilation' and 'Investigation Notebook'. At the bottom, there is a 'Teacher References' section with links to 'Lesson Overview Compilation', 'Standards and Goals', '3-D Statements', 'Assessment System', 'Embedded Formative Assessments', 'Books in This Unit', and 'Apps in This Unit'. A 'View Credits' link is located at the bottom right.

Improved teacher resources

Unit Guide reorganization K-5

Some documents found in the Unit Guide have changed names or have been separated into two documents:

- “**Unit Map**” and “**Standards at a Glance**” are now two separate sections
- “Managing the Unit” is now called “**Getting Ready to Teach**”
- “Lesson Summaries” is now called “**Lesson Overview Compilation**”
- “On-the-Fly Assessments” is now called “**Embedded Formative Assessments**”

Many of the materials found in the Unit Guide have been revised. You can access the latest version by redownloading each PDF on its own or by downloading the entire unit’s Teacher’s Guide as a PDF file.

AmplifyScience > Waves, Energy, and Information

22 Lessons

Waves, Energy, and Information

[JUMP DOWN TO UNIT GUIDE](#) [GENERATE PRINTABLE TEACHER'S GUIDE](#)

Chapter 1: How does a mother dolphin communicate with her calf across a...

5 Lessons

Chapter 2: How does sound energy travel through water from a mother dolphin t...

6 Lessons

Chapter 3: How does a dolphin calf know which call is his mother's call?

7 Lessons

Chapter 4: How can humans use patterns to communicate?

4 Lessons

Planning for the Unit

Unit Overview

Unit Map

Progress Build

Getting Ready to Teach

Materials and Preparation

Science Background

Standards at a Glance

Teacher References

Lesson Overview Compilation

Standards and Goals

3-D Statements

Assessment System

Embedded Formative Assessments

Books in This Unit

Apps in This Unit

Printable Resources

Copymaster Compilation

Investigation Notebook

Multi-Language Glossary

Print Materials (8.5" x 11")

Print Materials (11" x 17")

Improved teacher resources

Larger lesson map K-5

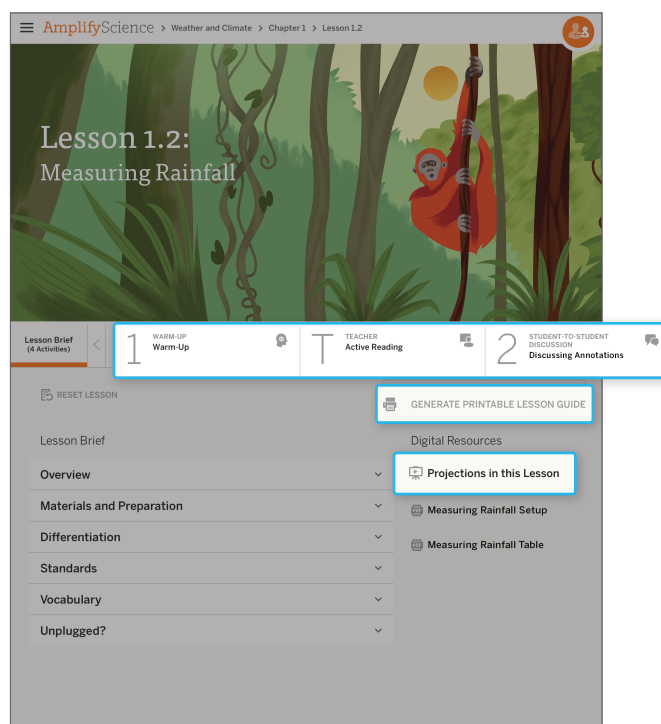
We have improved the design of the lesson map to make it easier for teachers to locate activities while teaching or planning for a lesson.

Improved lesson guides K-5

Printable lesson guides feature a new, improved design and include the same content as the digital version, such as teacher supports, possible responses, and On-the-Fly Assessments.

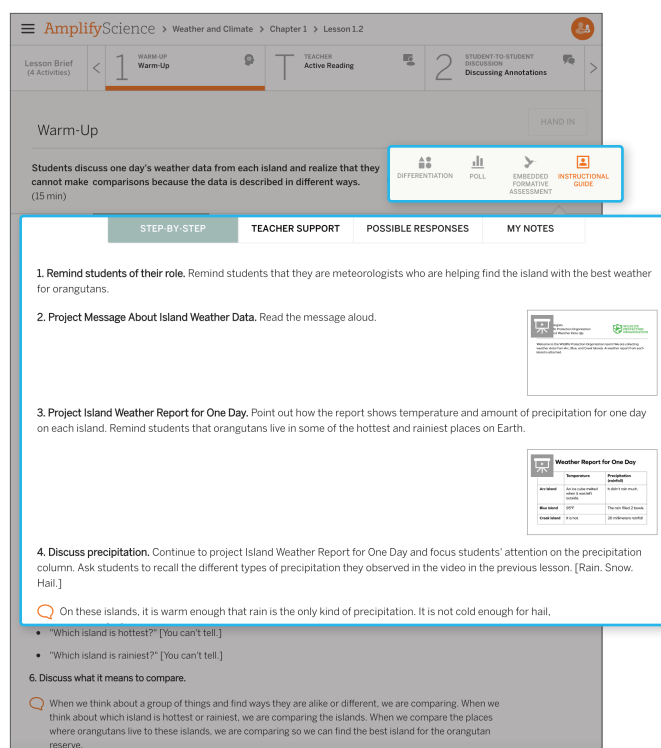
Easily displayed projections K-5

To improve the teaching experience, we have added a projection mode that allows teachers to project and flip through the slides for a given lesson without revealing the Instructional Guide to students.



Improved lesson planning experience K-5

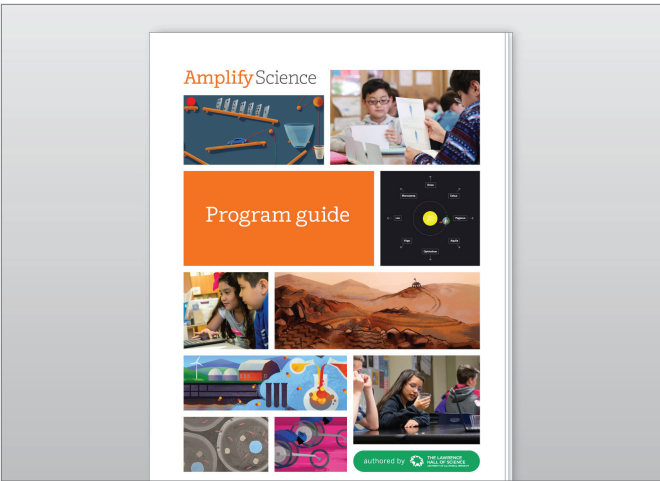
The Instructional Guide has been redesigned to be more clearly organized and to ensure that teachers are able to quickly and easily find what they are looking for while planning to teach. The teacher view of lesson activities has also been updated with better labeling, icons, and color-coding.



New teacher resources

Program Guide K-5

The Amplify Science Program Guide details information about the program, including its authorship, development, themes, and more. It serves as a resource for finding out more about the program’s structure, components, supports, how it meets standards, and flexibility.



Revised rubrics 2-5

Rubrics for scoring end-of-unit performance tasks were revised based on teacher feedback. Rubrics now articulate what counts as level 1, 2, etc., to help teachers review and score student work.

Question: Why aren't the snakes growing and thriving in the forest ecosystem?

Rubric 1: Assessing Students' Performance of the Practice of Constructing Arguments
This rubric is specific to students' scientific arguments (Part 2) of the End-of-Unit Writing: Scientific Argument About Why a Forest Ecosystem Is Not Thriving student sheets. Rubric 1 focuses on the responsiveness, justification by the reasoned use of evidence, and clarity criteria and is designed to monitor and support students as they develop dexterity with the *practice* of constructing arguments. For each criterion, levels are described to monitor students' progress by indicating the degree to which students can independently demonstrate fluency with the scientific practice. Importantly, practices develop through regular opportunities across multiple units, and mastery of the practice is outside the scope of a single unit. Thus, this rubric is intended to guide formative feedback to students rather than assign summative grades. It features targeted questions the teacher may use to assess a student's written work and provides specific feedback for future encounters with the practice.

Rubric 1: Assessing Students' Performance of the Practice of Constructing Arguments		
Criteria	Description of level	Level
Responsive Does the argument propose a claim that directly answers the question?	No claim is proposed, or proposed claim does not answer the question (e.g., claim is off-topic).	0
	Possible feedback: <i>What are the possible reasons the snakes aren't growing and thriving? Which reason do you think best explains why they aren't growing and thriving?</i>	
	The argument provides a claim that answers the question.	1

New teacher resources

Additional differentiation strategies K-5

New differentiation strategies are now available in the lesson-level differentiation briefs, supporting teachers in making necessary adaptations to the lesson to ensure that all students are able to engage with the curriculum.

×

Differentiation

Embedded Supports for Diverse Learners

Discourse routine. In this lesson, students are introduced to the Think-Write-Pair-Share discourse routine, which they will use throughout the unit. Engaging in this routine allows students to activate their prior knowledge and discuss science ideas. It also helps students practice active-listening skills. This routine is especially helpful for English learners as it allows students time to organize their own ideas before discussing them with a partner and to hear models of language from their peers before sharing with the whole class.

Accessible examples. Having students consider structure and function through a series of images supports the learning that students will do in upcoming lessons about structure and function as it relates to structures inside the eye. It is easier to establish this complex idea in these image examples as they are familiar to students and easily observed.

Multimodal experience. This lesson has students utilizing multiple senses and includes hands-on experience, structured discussion, and writing about similar phenomena and ideas. This multimodal instruction provides students with many opportunities to make sense of the concepts and provides access points for different types of learners.

Potential Challenges in This Lesson

Focus on using senses. Chapter 1 focuses on how animals use their senses to get information from their environment and how this helps animals survive. Some of the lessons in Chapter 1 rely on students using their own senses of vision, hearing, smell, and touch to try to identify various objects in canisters. As written, these

Digital student books K-5

Student books are available in a digital library, giving teachers the ability to project to students easily and access the books from any supported device.

A Busy Day in Pushville

♥

A Busy Day in Pushville



1

I live in a town called Pushville. People do all kinds of different jobs in my town. On the way to the library with my dad, I see lots of people doing their jobs. They all use **forces** to do their jobs! I just learned about forces at

Amplify Science | What's new: Back-to-school 2018 | K-5

5

New NGSS lesson supports

Phenomenon statements K-5

New phenomenon statements have been added to the lesson overviews on the curriculum website, clearly labeling and describing the anchor phenomenon and other types of phenomena explored throughout each unit.

Overview

Students make sense of their Warming Model investigation data and learn more about how and why scientists use models. Students share their recorded observations from the Warming Model and the teacher combines these observations in the Warming Graph, then students interpret the graph to conclude that surfaces get warmer when light is shining on them. Students are introduced to the unit reference book, *Handbook of Models*, and the teacher reads aloud different sections about how scientists use models to investigate things that are too big to study directly. Students learn how to use thermometers to take the temperature of their playground surface and begin to record this data on the Class Playground Temperature chart. The purpose of this lesson is for students to interpret the findings from their first investigation and to learn more about how and why scientists use models.

Anchor Phenomenon: Students at Carver Elementary School are too cold during morning recess, while students at Woodland Elementary School are too hot during afternoon recess.

Investigative Phenomenon: A surface gets warmer when light is shining on it.

Students learn:

- Scientists use models to investigate things that are too big to study directly.
- Scientists use models to make predictions about the real world.

NGSS information for parents and guardians K-5

New information about the Next Generation Science Standards is available to be shared with parents. This explains how students engage with three-dimensional learning to figure out real-world problems throughout each unit, and can be accessed from the Printable Resources section at the unit level.

Information about the NGSS for Parents and Guardians of 2nd Graders

What are the Next Generation Science Standards?

The Next Generation Science Standards (NGSS) are a new set of science standards for kindergarten through high school. The NGSS were designed with the idea that students should have a science education that they can use in their lives. It should empower students to be able to make sense of the world around them. And, it should give students the critical thinking, problem solving, and data analysis and interpretation skills they can use in any career, and that will help them make decisions that affect themselves, their families, and their communities. Many states have adopted the NGSS or very similar standards.

In order to accomplish this, the NGSS call for science learning in which students do not just memorize a set of science facts, but rather engage in figuring out how and why things happen. Core ideas in life science, Earth science, physical science, and engineering, are intentionally arranged from kindergarten through 12th grade so that students can build their understanding over time, and see the connections between different ideas and across disciplines. To figure out these core ideas, students engage in the same practices that real scientists and engineers do. For example, students develop and use models, analyze data, and make evidence-based arguments. They also learn to make sense of core ideas using crosscutting concepts, such as systems or cause and effect, which are useful ways of thinking about and making connections across different areas of science and engineering. The NGSS website provides additional information and resources for families.

3-D Statements K-5

Color-coded 3-D Statements are available in K-5 units, offering a clear overview of how instruction supports three-dimensional learning. These can be viewed in both the lesson briefs and at the unit level.

AmplifyScience

> Balancing Forces

3-D Statements

OPEN PRINTABLE 3-D STATEMENTS

Key

Practices

Disciplinary Core Ideas

Crosscutting Concepts

Unit Level

Students are challenged to explain how a floating train works in order to reassure nervous citizens. To solve the mystery, students **plan and conduct investigations**, **analyze patterns in data (patterns)**, and **obtain information about magnetic force, gravity, and balanced and unbalanced forces**. Students **write explanations and create physical models and diagram models to show why the train's vertical motion is stable at times and changes at times** (stability and change).

Chapter Level

Chapter 1: Why does the train rise?

Students **ask questions** about the floating train and discover, by **analyzing patterns in data (patterns)**, that **a force can cause an object's motion to change as it starts or stops moving** (stability and change).

New assessment supports

Summative 3-D investigation assessments and scoring guidance K-5

A new, summative “3-D Investigation Assessment with Scoring Guidance” activity has been added to each grade level. Embedded in one unit in each grade level, these assessments provide students with an open-ended opportunity to show what they’ve learned by developing a scientific investigation from scratch. The 3-D Investigation Assessments can be found in the following units:

- Grade K: *Sunlight and Weather*, Lesson 4.1, Activities 3 and 4
- Grade 1: *Light and Sound*, Lesson 4.1, Activity 3
- Grade 2: *Plant and Animal Relationships*, Lessons 4.2 and 4.3
- Grade 3: *Balancing Forces*, Lesson 5.1, Activity 3
- Grade 4: *Vision and Light*, Lessons 5.1 and 5.2
- Grade 5: *Patterns of Earth and Sky*, Lessons 4.2 and 4.3

NGSS Benchmark Assessments 3-5

Developed by Amplify*, these assessments are delivered four times per year to give teachers insight into how students are progressing toward mastery of the standards ahead of high-stakes, end-of-year assessments. They can be accessed as PDF files or integrated into QTI-compatible assessment platforms by school or district IT teams.

Name: _____ Date: _____

Planning an Investigation

Directions:

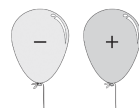
1. With your partner, plan what you will do to investigate how far the paper clip can be from the magnet before the forces become unbalanced in the Floating Paper Clip Device.
2. Answer the questions below.

How far do you think the paper clip can be from the magnet before the forces become unbalanced?

Amplify. Student Assessment | Grade 3 Form A Segment A

9

Two balloons are charged with static electricity. Their charges are represented in the picture.



If the balloons are held near each other, what will happen to them?

- a. Their charges will stay neutral.
- b. The charges will become opposites.
- c. Opposite charges will cause the balloons to pull toward each other.
- d. Same charges will cause the balloons to push apart from each other.

*The Amplify NGSS Benchmark Assessments were authored by Amplify and were not developed as part of the Amplify Science program or created by the Lawrence Hall of Science.

New assessment supports

3-D connections to assessment opportunities K-5

Easy-to-identify labeling for Disciplinary Core Ideas (DCIs), Crosscutting Concepts (CCCs), and Science and Engineering Practices (SEPs) has been added to assessment opportunities to help teachers connect formative and summative assessments to specific NGSS dimensions.

Assessment opportunity	Next Generation Science Standards
Lesson 1.1: 3D Performance Task: Scientific Explanation Assessment Type: Pre-Unit Assessment Evaluation Guidance: - Assessment Guide (in Digital Resources for Lesson 1.1), with support for revealing students' prior knowledge, preconceptions, and to gauge their facility for using the SEPs and CCCs. - Possible Student Responses	DCIs: - LS4.B: Natural Selection - LS4.C: Adaptation SEPs: - Practice 1: Asking Questions and Defining Problems - Practice 6: Constructing Explanations and Designing Solutions - Practice 8: Obtaining, Evaluating, and Communicating Information CCCs: - Structure and Function

Portfolio assessment guidance and rubrics for teachers and students K-5

The Program Guide contains a suite of resources to plan, gather, annotate, and score portfolio assessments. The portfolio assessment process is designed to enable students to survey and reflect on the work they have done over a year, and for the teacher to look at growth across a year's worth of learning. To support this effort, student- and teacher-facing rubrics are also provided.

New student resources

Student-generated questions K-5

Additional opportunities for student-generated questions have been added throughout the curriculum to help students practice asking questions like scientists.

Think-Pair-Share Question 4

What questions do you have about the floating train?

Multi-language glossaries K-5

Teachers and students can utilize multi-language glossaries, with all unit vocabulary translated into ten languages. The glossaries are available through the printable resources section of the Unit Guide as a downloadable PDF.

English-Arabic Glossary

- claim:** a proposed answer to a question
خُجَّة: إجابة مقترحة عن سؤال ما
- design:** to try to make something new that solves a problem
تصميم: محاولة بناء شيء جديد يحل مشكلة ما
- engineer:** a person who uses science knowledge to design something in order to solve a problem
مهندس: شخص يستخدم المعرفة لتصميم شيء ما لحل إحدى المشكلات
- evidence:** information that supports an answer to a question
دليل: معلومات تدعم إجابة عن سؤال ما

English-Chinese Glossary

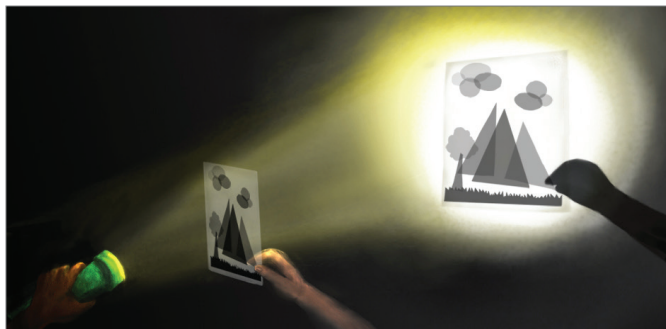
- claim:** a proposed answer to a question
主张: 对某个问题的拟定答案
- design:** to try to make something new that solves a problem
设计: 试图创造新东西以便解决某个问题
- engineer:** a person who uses science knowledge to design something in order to solve a problem
工程师: 为了解决问题而使用科学知识来设计某种东西的人
- evidence:** information that supports an answer to a question
证据: 支持问题答案的资料

Units with significant revisions

More student-directed activities

Several activities were revised to become more student-directed, specifically in the *Light and Sound* and *Inheritance and Traits* units, based on teacher feedback. For example, in the *Light and Sound* unit (grade 1), students now set up their own ways of investigating potential sound sources, rather than conducting a test suggested by the teacher. In the *Inheritance and Traits* unit (grade 3), students design their own investigations to answer the question of whether the environment can influence traits that are inherited.

Light and Sound Grade 1



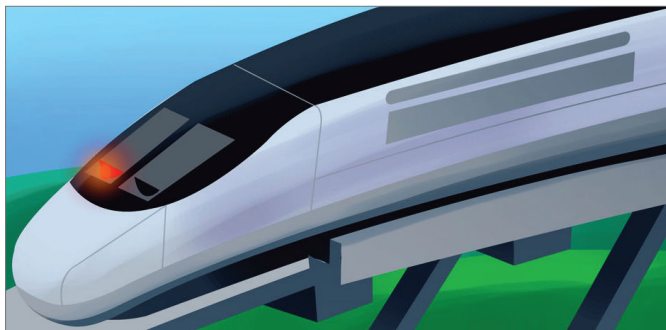
Inheritance and Traits Grade 3



Two restructured units

Two units have been noticeably revised. The third-grade *Balancing Forces* unit has been significantly revised based on teacher feedback to allow for more open-ended and student-driven modeling and questioning experiences and to include more explicit use of crosscutting concepts. Additionally, the unit's original Chapter 1 has been split into two separate Chapters, one on touching forces and the other on magnetic force, making the unit's learning progression easier to follow. The fifth-grade *Modeling Matter* unit has been adjusted from two chapters to three, with the addition of new content and minor adjustments to the unit's Critical Juncture assessments. The following tables explain the changes in more detail. To take advantage of the improvements to these units please redownload all materials.

Balancing Forces Grade 3



Modeling Matter Grade 5



Units with significant revisions

Grade 3: *Balancing Forces*

Overview: The unit now has five chapters instead of four (Chapter 1 was split into two chapters), and the last two chapters have been divided more clearly to focus on different topics (Chapter 4 focuses on balanced forces and Chapter 5 focuses on unbalanced forces). Throughout the unit, more opportunities for students to engage in questioning have been added and the connections to crosscutting concepts have been made more explicit.

2017 Lessons

Old Chapter 1: (8 lessons)

- This long chapter began with a focus on touching forces (3 lessons) then moved to non-touching forces (specifically magnetic force) and students explaining how the train rise.
- Students need more time to reach the conclusion themselves that, “when the train rises, that is evidence that a force is acting, so there must have been a force acting on the train to make it rise”.

Old Chapter 2: (5 lessons)

- The original critical juncture focused on the phenomenon more generally, rather than the phenomenon as applied to the unit problem.
- As part of this chapter, there was a very guided experience of creating a chain reaction device.

2018 Lessons

New Chapter 1: (4 lessons)

- The new Chapter 1 focuses on touching forces. The chapter begins in the same way as the old Chapter 1, but there is one additional lesson. In this new lesson (1.4), the teacher plays a video of a chain reaction of dominoes falling and models recording information about the forces that acted on the dominoes.
- Students then use materials to create their own chain reactions, in a completely open-ended way, and record the objects involved and the evidence of a force for two of the forces in their chain reaction.
- At the end of the new Chapter 1, students write their first scientific explanation. The teacher models writing a scientific explanation for why one of the dominoes in the video tipped over. Pairs then discuss the floating train, what they now know about what must have caused the train to rise (a force), and what questions they still have (what caused the force?). The teacher provides a topic sentence and students complete a short scientific explanation of why the train rises and how they know.

New Chapter 2: (5 lessons)

- This chapter focuses on magnetic forces and is made up of lessons related to magnetic forces from the second half of the old Chapter 1.

New Chapter 3: (4 lessons)

- Updating the critical junctures in the unit to have students write about the unit problem (rather than the phenomenon more generally), enabled this chapter to be shortened by one lesson.
- The activity involving the chain reaction device has been made more open-ended. Students have already had one opportunity to make chain reaction devices in the new Chapter 1 (with materials that were conducive to illustrating touching forces). Now, students are provided with additional materials, including a magnetic marble, a ring magnet, etc. that enable them to make a chain reaction device that also utilizes non-touching forces.

Units with significant revisions

Grade 3: *Balancing Forces* (cont.)

Old Chapter 3: (5 lessons)

- The old Chapter 3 focused on balanced and unbalanced forces, and had a spoiler in the *Hoverboard* book, that explained how an electromagnet turned the magnetic force off.

Old Chapter 4: (4 lessons)

- The old Chapter 4 focused on electromagnets and had the application opportunity of thinking about bridges from the perspective of balanced and unbalanced forces.

New Chapter 4: (4 lessons)

- This chapter focuses on balanced forces only. The *Explaining a Bridge* book now appears at the end of this chapter, focusing students on how the forces are balanced in a working bridge.

New Chapter 5: (5 lessons)

- This chapter now focuses on unbalanced forces. This is where students learn about what happens when forces become unbalanced, using the floating paper clip device as a model. Students then learn about electromagnets, and apply what they have learned to analyze and think about hoverboards (the *Hoverboard* book now appears here).
- The activity around the floating paper clip device has also been modified to be more open-ended, with students being challenged to construct the device in any way they want. Among other things, students discover that there are multiple ways to make the paperclip float.

Grade 5: *Modeling Matter*

Overview: The unit now has three chapters instead of two (Chapter 2 has been split into two separate chapters). This provides a clearer distinction between a focus on mixtures of a solid and liquid and a focus on mixtures of liquids.

2017 Lessons

Old Chapter 1: (10 lessons)

- This chapter focused on students figuring out: Why did the food coloring separate into different dyes?

Old Chapter 2: (12 lessons)

- This chapter focused on figuring out: Why do some substances mix and others do not? This included three phenomena in the one chapter: dissolving, liquids that separate into layers when mixed, and how emulsifiers work.

2018 Lessons

New Chapter 1: (10 lessons)

- The instruction and content in the chapter was not changed from the 2017 version.
- An optional “Home Investigation: Investigating More Mixtures” has been added to this chapter.

New Chapter 2: (5 lessons)

- This chapter now focuses students on figuring out dissolving, and explaining: Why do some salad dressings have sediments and some do not?

New Chapter 3: (7 lessons)

- This chapter now focuses on students figuring out: Why can salad dressing ingredients separate again after mixing? This chapter has students exploring when and how liquids mix and when they separate, as well as investigating emulsifiers.
- Making the old Chapter 2 into two separate chapters enables the unit to have an additional Critical Juncture assessment after their investigation of dissolving to ensure that students are ready to go on to Chapter 3, where they will be looking at attraction between two liquids and emulsification.
- An optional “Home Investigation: Molecules in Salad Dressing Quiz” has also been added to this chapter.

Detailed changes to content by grade

To take advantage of the most up-to-date version of the curriculum we suggest teaching directly from the curriculum website. If you plan to teach offline and have printed/saved versions of the curriculum from the previous year, we have provided recommendations for which materials you should re-download and print to ensure you benefit from changes that impact the content you are teaching.

This list does not include changes that do not directly impact your use of the curriculum in the classroom (i.e. typo fixes, font changes, etc.)

We suggest re-downloading the following new and revised projections, copymasters and investigation notebook pages for the units you teach. In addition, we suggest re-downloading all materials across the curriculum for the following three categories.

- Print Materials (8.5" x 11")
- Print Materials (11" x 17")
- all assessments and rubrics throughout the unit

These materials can be easily downloaded from the Unit Guide or the Digital Resources section in each lesson.

Grade K			
Unit	Projections	Copymasters	Investigation Notebook Lessons
<i>Sunlight and Weather</i>	None	• Lesson 1.2: Optional: Chapter 1 Home Investigation: Observing Weather copymaster • Lesson 2.1: Lamp Models: Testing in Preparation for Use (NEW) • Lesson 2.2: Optional: Chapter 2 Home Investigation: Sunlight and Shade copymaster • Lesson 3.1: Optional: Chapter 3 Home Investigation: Time in the Sunlight copymaster • Lesson 3.3: Playground in the Sunlight Mini-Book 1 copymaster • Lesson 4.2: Optional: Chapter 4 Home Investigation: Dark and Pale Surfaces copymaster • Lesson 4.4: Getting Warmer or Cooler at the Beach Mini-Book 2 copymaster • Lesson 5.3: Flooding Models copymaster • Lesson 5.4: Optional: Chapter 5 Home Investigation: Preparing for Severe Weather Where You Live copymaster	• Lesson 1.2 • Lesson 1.3 • Lesson 3.1 • Lesson 4.1 • Lesson 5.2
<i>Needs of Plants and Animals</i>	None	• Lesson 1.1: Planting Guide copymaster	• Lesson 1.7 • Lesson 2.3 • Lesson 2.5 • Lesson 2.6 • Lesson 3.1

Detailed changes to content by grade

Grade K (cont.)

<i>Pushes and Pulls</i>	None	• Lesson 1.2: Explanation Language Frame • Lesson 2.2: Explanation Language Frame • Lesson 2.2: Optional: Chapter 2 Home Investigation: Making a Forces Kit copymaster • Lesson 3.3: Chapter 3 Home Investigation 1: More Practice with a Forces Kit copymaster • Lesson 3.4: Optional: Chapter 3 Home Investigation: Hitting Targets copymaster	None
-------------------------	------	--	------

Grade 1

Unit	Projections	Copymasters	Investigation Notebook Lessons
<i>Spinning Earth</i>	None	None	• Lesson 1.4 • Lesson 1.5 • Lesson 3.2 • Lesson 3.3 • Lesson 3.6 • Lesson 4.1 • Lesson 4.2 • Lesson 5.2
<i>Animal and Plant Defenses</i>	• Lesson 2.6	• Lesson 1.4: Optional: Chapter 1 Home Investigation: Animal or Plant Structure copymaster • Lesson 2.6: Optional: Chapter 2 Home Investigation: Camouflage Model copymaster • Lesson 2.7: Writing Planner: Explaining Animal and Plant Defenses copymaster • Lesson 3.5: Optional: Chapter 3 Home Investigation: Sharing the Mini-Book copymaster • Lesson 4.4: Optional: Chapter 4 Home Investigation: Sharing Your Model copymaster	• Lesson 1.4 • Lesson 2.3 • Lesson 2.5 • Lesson 2.7 • Lesson 2.8 • Lesson 3.3 • Lesson 4.2
<i>Light and Sound</i>	• Lesson 1.3	None	• Lesson 4.1 • Lesson 4.2

Detailed changes to content by grade

Grade 2

Unit	Projections	Copymasters	Investigation Notebook Lessons
<i>Changing Landforms</i>	Lesson 1.1	None	- Lesson 1.6 - Lesson 2.4 - Lesson 2.6 - Lesson 3.5 - Lesson 4.5
<i>Plant and Animal Relationships</i>	None	- Lesson 1.5: Plant Growth Image copymaster - Lesson 1.6: Optional: Chapter 1 Home Investigation: Investigating a Sample Study Site	Redownload to take advantage of revisions to a large number of pages in the notebook
<i>Properties of Materials</i>	None	None	- Lesson 1.9 - Lesson 2.4 - Lesson 4.4

Grade 3

Unit	Projections	Copymasters	Investigation Notebook Lessons
<i>Weather and Climate</i>	- Lesson 1.5 - Lesson 1.6 - Lesson 2.4	None	- Lesson 1.2 - Lesson 1.6 - Lesson 2.5 - Lesson 3.7 - Lesson 4.2 - Lesson 4.4
<i>Inheritance and Traits</i>	- Lesson 2.2 - Lesson 3.6	None	- Lesson 1.7 - Lesson 2.3 - Lesson 2.6 - Lesson 3.5 - Lesson 3.6 - Lesson 4.1 - Lesson 4.3

Detailed changes to content by grade

Grade 3 (cont.)

<i>Environments and Survival</i>	None	- Lesson 2.2: Extension: Fossil Skulls: Clues into Past Environments (NEW) - Lesson 3.3: Optional: Chapter 3 Home Investigation: Traits and Environment Quiz copymaster	- Lesson 1.5 - Lesson 2.8 - Lesson 3.4
<i>Balancing Forces</i>	This unit has been significantly revised based on teacher feedback. Please see the table on pages 11 and 12 for a more detailed explanation of the revisions that have been made.		

Grade 4

Unit	Projections	Copymasters	Investigation Notebook Lessons
<i>Earth's Features</i>	- Lesson 1.1 - Lesson 1.6 - Lesson 2.6 - Lesson 3.5 - Lesson 4.5	Lesson 4.5: Patterns on a World Map copymaster (NEW)	- Lesson 1.6 - Lesson 2.4 - Lesson 2.5 - Lesson 2.6 - Lesson 4.3 - Lesson 4.4 - Lesson 4.5
<i>Vision and Light</i>	Lesson 1.4	- Lesson 5.1: Smell Investigation copymaster - Lesson 5.1: Hearing Investigation copymaster - Lesson 5.1: Touch Investigation copymaster	- Lesson 1.4 - Lesson 2.5 - Lesson 3.5 - Lesson 2.4 - Lesson 4.6 - Lesson 5.2
<i>Energy Conversions</i>	- Lesson 2.2 - Lesson 3.1 - Lesson 3.2 - Lesson 3.4 - Lesson 3.5 - Lesson 4.1 - Lesson 4.2 - Lesson 4.3	- Lesson 3.6: Extension: Questions About Energy Sources copymaster - Lesson 4.4: Possible Solutions for Improving Ergstown's Electrical System copymaster	Re-download to take advantage of revisions to a large number of pages in the notebook
<i>Waves, Energy, and Information</i>	Lesson 3.7	None	- Lesson 1.5 - Lesson 2.4 - Lesson 2.6 - Lesson 3.6 - Lesson 3.7 - Lesson 4.4

Detailed changes to content by grade

Grade 5			
Unit	Projections	Copymasters	Investigation Notebook Lessons
<i>Patterns of Earth and Sky</i>	- Lesson 1.6 - Lesson 2.5	- Lesson 2.3: Extension: Investigating Shadows copymaster (NEW) - Lesson 3.1: Extension: Investigating the Sun Throughout the Year copymaster	- Lesson 1.6 - Lesson 1.7 - Lesson 2.6 - Lesson 3.6 - Lesson 4.3
<i>The Earth System</i>	- Lesson 1.3 - Lesson 2.1	Lesson 4.2: Extension: Hydrosphere-Geosphere Interactions copymaster	- Lesson 1.3 - Lesson 2.6 - Lesson 2.8 - Lesson 3.4 - Lesson 4.5 - Lesson 5.4 - Lesson 5.6
<i>Ecosystem Restoration</i>	- Lesson 1.2 - Lesson 1.4 - Lesson 1.7 - Lesson 1.8 - Lesson 2.1 - Lesson 2.5 - Lesson 3.5	- Lesson 1.2: Setting Up a Terrarium copymaster - Lesson 1.8: Rain Forest Restoration Plan 1 Action Steps chart	- Lesson 1.2 - Lesson 1.4 - Lesson 1.8 - Lesson 2.1 - Lesson 2.5 - Lesson 2.7 - Lesson 3.6
<i>Modeling Matter</i>	This unit has been significantly revised based on teacher feedback. Please see the table on page 12 for a more detailed explanation of the revisions that have been made.		

For more information, please contact scihelp@amplify.com