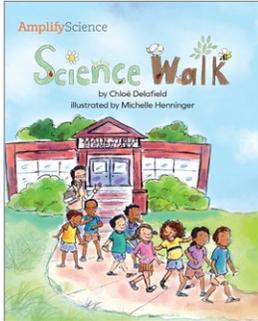


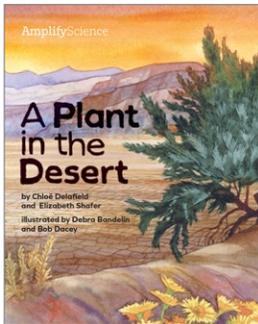
Needs of Plants and Animals: Milkweed and Monarchs



ISBN: 978-1-939787-90-3

Science Walk

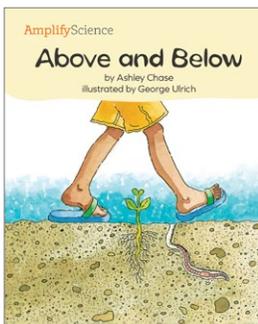
Science Walk introduces students to several scientific practices in the context of a story about a kindergarten class observing living and nonliving things outside. As the fictional class prepares for its science walk, the teacher explains the process of making observations, recording data, classifying information, and asking questions. Students first hear the book as a Read-Aloud and think about what scientists do to answer questions. Later, they explore the book as a Partner Read and look for living things in the images and text. The book helps prepare students to classify living and nonliving things and then make further classifications within the category of living things. After they have read about and explored these scientific practices through the book and related activities, students take a science walk of their own.



ISBN: 978-1-945191-06-0

A Plant in the Desert

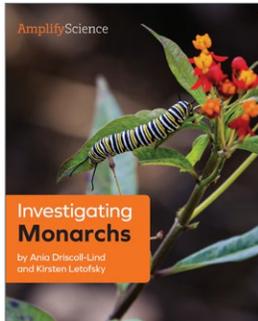
A Plant in the Desert uses the example of a sage bush to help students understand the needs of plants. It may seem like the desert has no water. If that's the case, how can plants grow there? Students learn that there is indeed water in the desert. It rains sometimes, and during those rains, the desert plants—and animals—take in all the water they can. The sage plant has many roots that reach deep into the soil to take in as much water as possible so it can survive until the next rain. Even plants and animals that live in very dry places must get water sometimes. This drives home the idea that all plants and animals need water to survive. Students encounter the book twice as a Shared Reading, each time with a different focus: first, that even plants in the desert need water and second, how plants get that water.



ISBN: 978-1-945191-53-4

Above and Below

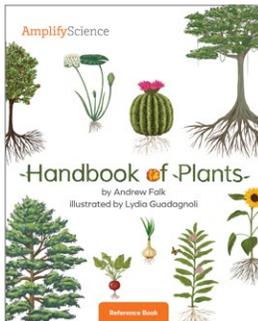
Above and Below uses engaging cutaway illustrations and repeating text to explore how different plants and animals are meeting their needs above and below the soil. Plants get water from below the ground; some animals stay safe and find food below the ground. Plants get sunlight from above the ground; some animals walk around and find food above the ground. Students first explore this book in pairs, searching the illustrations for plants and animals getting what they need. The class then reads the book as a Shared Reading, focusing on how plants and animals meet their needs in their habitats. Students use what they learn from this book to inform their discussions of monarchs and milkweed.



ISBN: 978-1-945191-02-2

Investigating Monarchs

Investigating Monarchs emphasizes the needs of monarch caterpillars and butterflies and shows what happens when these animals are not able to meet their needs. The book first introduces the life cycle of monarchs, explaining that monarch caterpillars must eat milkweed to survive and change into butterflies. Their summer habitat must have milkweed. The butterflies then migrate a long distance, from the United States to a forest in the mountains of Mexico, where they take shelter in the trees. Their winter habitat must have trees. Scientists discovered that the monarch population in Mexico was greatly reduced because people were cutting down the trees. The forest was then protected, but the monarch population did not recover as expected. Scientists in the United States found evidence that this was because fields with milkweed are being replaced by farms and buildings. Students are encouraged to think about what people in the United States can do to help the monarchs get what they need to survive. *Investigating Monarchs* is used as a Shared Reading, first to discover that monarch caterpillars turn into butterflies and then to consider how humans are changing monarch habitats.



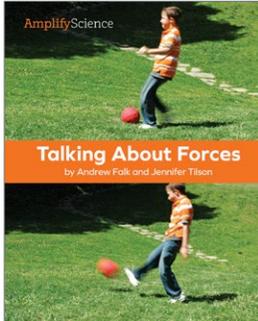
ISBN: 978-1-939787-94-1

Reference Book

Handbook of Plants

Handbook of Plants is the reference book for this unit. It includes information about nine different kinds of plants as well as introductory material about plant growth, seeds, leaves getting light, and roots getting water. Students use the book to look up information throughout the unit. First, they use the book to find out what animals and plants can live where, which helps illustrate the concept of habitat. Organisms can only live in a place that has what they need. Specifically, students learn that monarch butterflies can only live in a place that has milkweed. Students use the reference book again, as they are setting up the seeds to grow in their classroom, to learn more about how plants grow. They also look up radishes and their roots. The reference book is used again to discover that plants need light and which plant parts are important for getting that light. Students then look at diverse leaf types depicted in the book. *Handbook of Plants* is used as a Shared Reading throughout the unit.

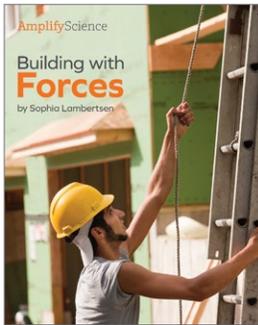
Pushes and Pulls: Designing a Pinball Machine



ISBN: 978-1-939787-92-7

Talking About Forces

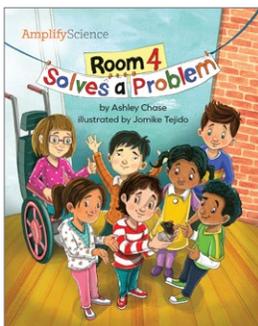
Talking About Forces introduces students to several foundational concepts for the unit, including the idea that forces make things move. The book also introduces key scientific language for explaining what is happening when a force makes something move. Students learn that scientists and engineers say that when one thing is making another thing move, it is exerting a force on it. Relatable examples and photographs help students connect the concepts they are learning in the unit with what they see in the world around them. The book helps students view the world through a scientific lens and see how forces are being exerted all the time. *Talking About Forces* is used as a Read-Aloud book at the beginning of the unit to introduce the content and help students connect movement with the forces that cause it to happen.



ISBN: 978-1-943228-68-3

Building with Forces

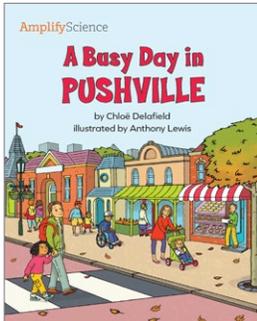
Building with Forces features construction workers who are building houses and stores. The book highlights forces being exerted in different directions: up, down, to the left, to the right, toward, and away. Students learn that construction workers must exert forces in the correct directions so everything ends up where it belongs. *Building with Forces* is used as a Shared Reading midway through the unit to help students visualize how forces exerted in different directions make things move in those directions. Construction photographs and simple text engage students in learning this foundational concept.



ISBN: 978-1-943228-62-1

Room 4 Solves a Problem

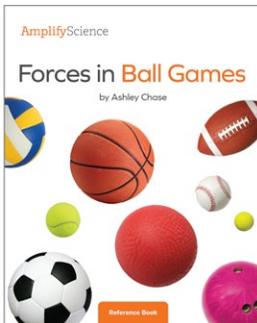
In *Room 4 Solves a Problem*, a group of kindergartners encounter a problem: Their class pet, Ratty, needs to get more exercise. Students jump into action, designing solutions that use pushes and pulls to alleviate Ratty's problem. They test out several solutions and then refine and improve their solutions until they have designed the perfect push-and-pull exercises for Ratty. *Room 4 Solves a Problem* is a Read-Aloud book that models the design process that students are using to create their pinball machines in the unit.



ISBN: 978-1-943228-60-7

A Busy Day in Pushville

A Busy Day in Pushville is written from the perspective of a young girl who sees people using pushes and pulls in their jobs and activities all around town as she goes to the library with her dad. After she and her dad come home, she also notices pushes and pulls as they paint and draw, make dinner, and more. Students are encouraged to look for evidence of forces throughout the book. *A Busy Day in Pushville* is used as a Shared Reading at the end of the unit to help students synthesize information and explain all the different kinds of forces they have learned about in the unit. The book provides a bridge to an activity in which students search for evidence of forces in and around the school.



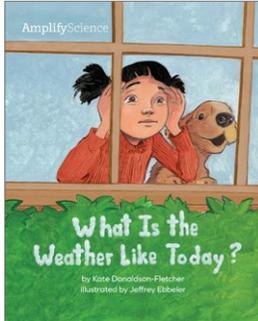
ISBN: 978-1-943228-66-9

Forces in Ball Games

Forces in Ball Games is the reference book for this unit. It explores the types of forces in many different ball games, both familiar and new. Showing how forces are exerted in the context of games helps solidify the connection between the physics content that students are learning and the pinball machines they are creating. The reference book is used during a Partner Read and in Read-Alouds throughout the unit and offers an opportunity to look for changes of direction, stopping and starting motion, and strong and gentle forces.

Reference Book

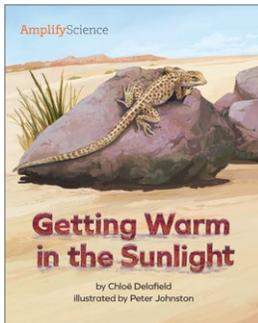
Sunlight and Weather: Solving Playground Problems



ISBN: 978-1-945192-39-5

What is the Weather Like Today?

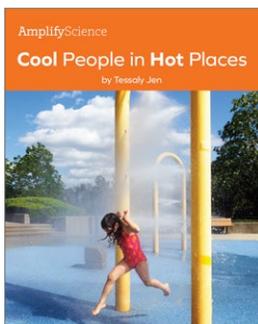
What Is the Weather Like Today? provides a lively introduction to some of the unit's content: various weather conditions and temperatures. The narrator of the book wakes up each morning and asks what the weather is like and what the temperature is. She looks out her window or steps out onto her porch to answer these questions. Having the answers helps her prepare for going outside and lets her know what kinds of activities she might be able to enjoy that day. This engaging Read-Aloud helps students become familiar with many of the words that will be used to describe weather and temperature in the unit. *What Is the Weather Like Today?* sets the context for this unit by introducing students to the idea that weather can change from day to day and throughout the year and that there are ways people can prepare for the weather to help them stay comfortable and safe.



ISBN: 978-1-945192-42-5

Getting Warm in the Sunlight

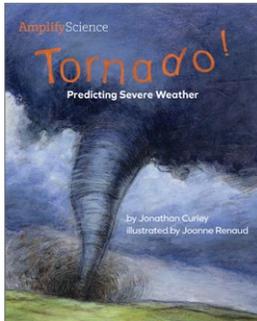
Getting Warm in the Sunlight explores the warming effects of sunlight through the story of a lizard's day. In the morning, it's too cold for the lizard to come out of its burrow. As the sun shines on Earth's surface, it starts to warm up enough for the lizard to come out and hunt for insects. Various surfaces—the dark rocks and pale sand—warm at different rates, and the lizard chooses on which surface to hunt based on when it reaches optimal temperature. As the day gets hotter, the lizard has to first seek out the pale sand and then the shade of a shrub. When the sun sets, the surfaces quickly cool down, and the lizard has to seek shelter again. *Getting Warm in the Sunlight* is a Shared Reading that provides a clear introduction to the idea that pale-colored surfaces and dark-colored surfaces warm up at different rates, which helps set the stage for students' firsthand investigations and for understanding what's going on with the two schools in the unit that are experiencing varying temperatures.



ISBN: 978-1-945192-33-3

Cool People in Hot Places

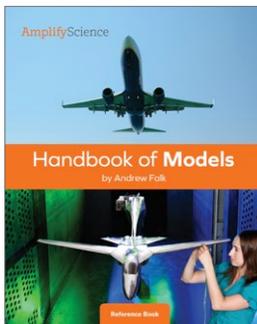
Cool People in Hot Places takes students to seven locations around the world where people use different techniques to deal with a particular type of severe weather—very high temperatures. The book is a Shared Reading that uses a repetitive structure to introduce students to various methods of blocking sunlight, increasing airflow, and using pale colors to prevent surface temperatures from getting too high. These examples help reinforce several essential unit concepts: sunlight warms surfaces, different surfaces warm at different rates, weather can become severe, and people can take measures to protect themselves from severe weather. This book helps support students' firsthand investigations by showing them real-world examples that relate to the problem they are trying to solve.



ISBN: 978-1-945192-36-4

Tornado! Predicting Severe Weather

Tornado! Predicting Severe Weather tells the story of real-life weather scientist Lynn Burse and how she studies and predicts severe weather. In this Read-Aloud, students hear about how Burse and her fellow scientists use their observations and measurements of the weather—including wind, rain, temperature, and changes in weather—to make predictions. Many people use these predictions in their daily lives to prepare for severe weather. On one particular occasion, Lynn and her team used their observations of temperature and thunderstorms to predict that a tornado was coming to their area. They warned the people in time for everyone to get to safety, and no one was hurt even though the tornado caused a lot of damage. This book supports students in making connections between what they are learning in the classroom about predicting and preparing for different weather conditions and what scientists in the field do to help keep people safe.



ISBN: 978-1-945192-30-2

Reference Book

Handbook of Models

Handbook of Models is the reference book for this unit, giving students a place to see examples of many different kinds of scientific models and how people use them to understand the world. Models can help us investigate things that are too big or too small to study otherwise and can help us investigate things that happen too quickly or too slowly to observe directly. Models also help us study one part of a complex system at a time and allow us to test our predictions. As students build and manipulate their own scientific models, they can use this reference book to make connections between what they are doing and the larger idea that models help facilitate learning in a variety of ways. *Handbook of Models* is used as a Shared Reading throughout the unit and helps build a foundation for understanding scientific models that will support students throughout the unit and throughout their entire science education.

About the books

Each unit of Amplify Science K–5 includes five student books authored by the curriculum experts at the University of California, Berkeley’s Lawrence Hall of Science. These age-appropriate books were built specifically to enhance students’ experiences in the Amplify Science curriculum. The books engage students with science phenomena that are too big, too small, too far, happen too slowly, or are too dangerous for students to engage with firsthand in the classroom, while reinforcing reading and literacy skills. These content-rich, nonfiction and informational texts provide opportunities for students to search for evidence relevant to their firsthand investigations, see science practices and dispositions modeled, extend their science knowledge, and provide real world connections as they master reading-to-learn, and close reading skills, and construct evidence-based arguments. The five books in each unit include one book for approximately every five days of instruction and one reference book that students draw upon throughout the 20-lesson units.



**THE LAWRENCE
HALL OF SCIENCE**
UNIVERSITY OF CALIFORNIA, BERKELEY

The program is designed to provide strong support in how to read like a scientist and for the development of vocabulary, language, and reading comprehension particularly relevant to reading informational text. It can serve as a complement to an English Language Arts program that addresses other literacy components (e.g., skill-based or fluency-oriented literacy instruction). Big books come with the program for all titles in grades kindergarten and 1.

Lexile Levels

The Lexile¹ measure is provided for all non-reference books.² At this time, our reference books are not given Lexile measures because these books are not designed to be read from cover to cover; rather, students use these books to find targeted information to support their investigations. All books in the Amplify Science program fall within, or in a few cases, just outside, the range of Lexile measures specified for the grade level.

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- 1 Target Lexile measures by grade band are specified by the Common Core in Supplemental Information for Appendix A of the Common Core State Standards for English Language Arts and Literacy: New Research on Text Complexity, available at <http://www.corestandards.org/wp-content/uploads/Appendix-A-New-Research-on-Text-Complexity.pdf>. MetaMetrics further specifies target Lexile measures for each grade, available at <https://lexile.com/about-lexile/grade-equivalent/grade-equivalent-chart/>
 - 2 Lexile measures are available for the Grades 2–5 books; there are no current official Common Core recommendations for Lexile measures for kindergarten and Grade 1.