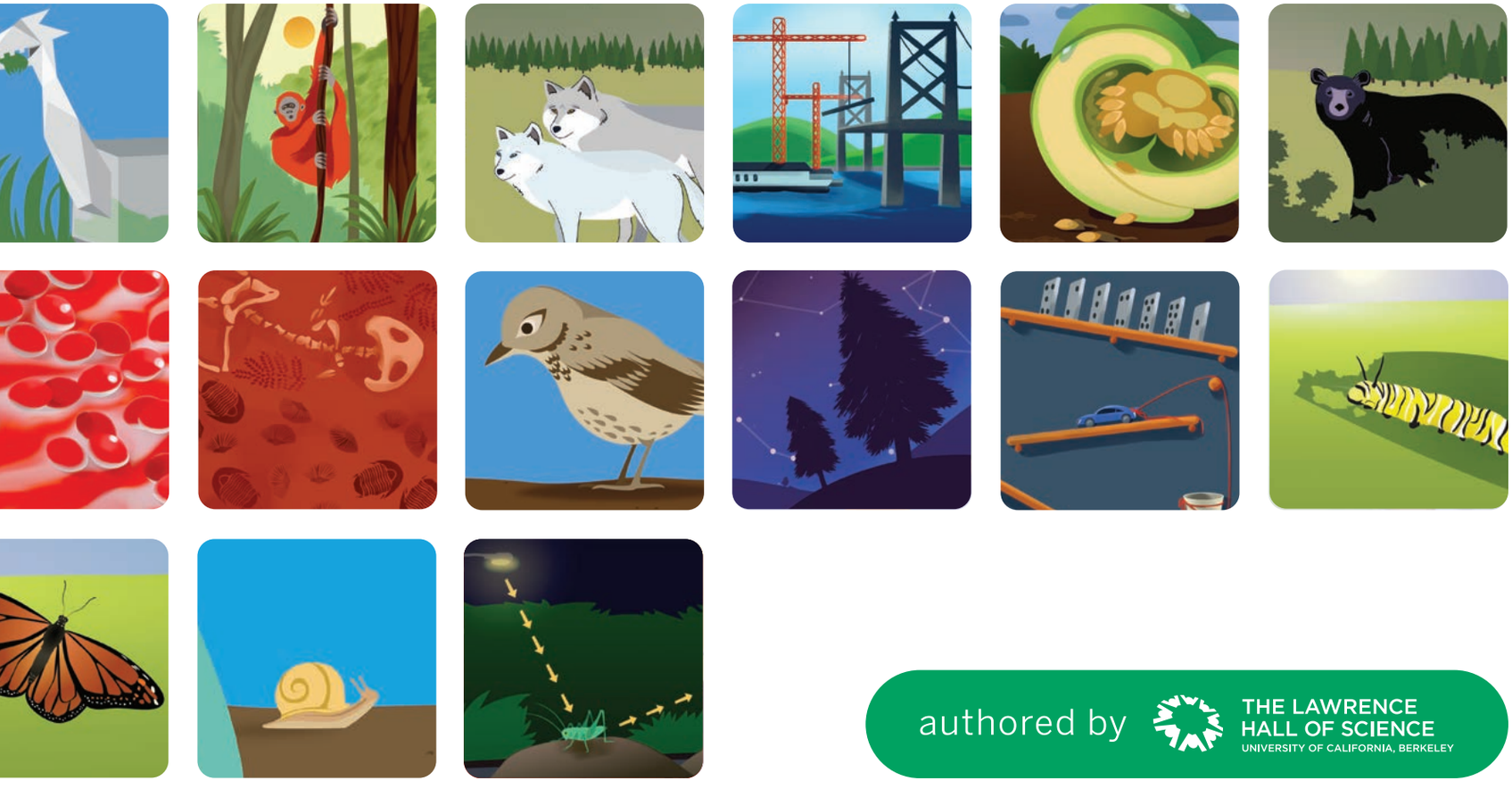
Amplify Science

Grade 1

Planning guide



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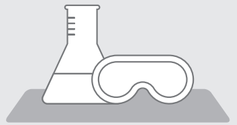
Program components

Student

Hands-on



Kit materials

Reading

Student Books for read-alouds, shared reading, and partner reading

Writing

Student Investigation Notebooks

Teacher

Instruction

Print Teacher's Guide

Digital Teacher's Guide

Display and hands-on materials (vocabulary cards, unit questions, key concepts, sorting cards, and more)

Planning for a year

Grade 1 scope and sequence

(66 days of instruction)

Animal and Plant Defenses

20 45-minute lessons
2 dedicated assessment days

Focal NGSS Performance Expectations:

- 1-LS1-1
- 1-LS1-2
- 1-LS3-1

Focal Disciplinary Core Ideas:

- LS1.A
- LS1.B
- LS1.D
- LS3.A
- LS3.B

Light and Sound

20 45-minute lessons
2 dedicated assessment days

Focal NGSS Performance Expectations:

- 1-PS4-1
- 1-PS4-2
- 1-PS4-3
- 1-PS4-4
- K-2-ETS1-1
- K-2-ETS1-2
- K-2-ETS1-3

Focal Disciplinary Core Ideas:

- PS4.A
- PS4.B
- PS4.C
- ETS1.A
- ETS1.B
- ETS1.C

Spinning Earth

20 45-minute lessons
2 dedicated assessment days

Focal NGSS Performance Expectations:

- 1-ESS1-1
- 1-ESS1-2
- 1-PS4-2

Focal Disciplinary Core Ideas:

- ESS1.A
- ESS1.B

Amplify Science was built from the ground up for 3-dimensional learning. Access the Teacher's Guide to see the complete list of Disciplinary Core Ideas, Crosscutting Concepts, and Science and Engineering Practices addressed in each unit.

Scheduling options

No matter what your scheduling preference, Amplify Science will work in your classroom.

"I teach science twice each week."

Each Amplify Science unit at grade 1 is made up of 22 45-minute lessons, which includes two lessons for pre- and post-assessment. With two scheduled 45-minute sessions each week, each Amplify Science unit will take between 2 and 2.5 months to complete.

"I teach science three times each week."

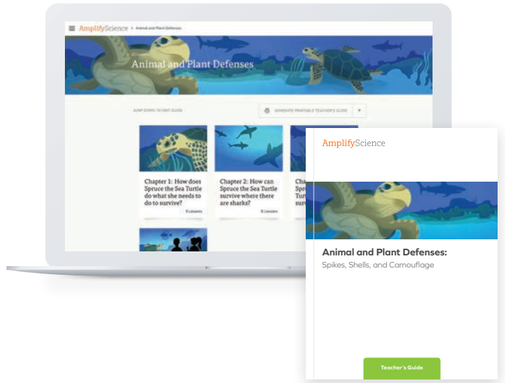
The easiest option is to plan for 3 45-minute sessions each week. This way, each Amplify Science unit will take approximately 1.5 months. This plan will provide you the freedom to slow down the pace of instruction if your students need more time, or if you'd like to weave in additional experiences.

"I teach science every day."

It will take you approximately 5 weeks (22 school days) to complete each unit. If you plan for sessions shorter than 45 minutes, the units will take slightly longer to complete.

Planning for a unit

Each unit's Teacher's Guide has all the information you need to learn about that unit's content and structure, materials, storyline, and student learning objectives.



Planning options

1 hour per unit

If you want to thoroughly prepare for a unit, the most important resources to locate and read are:

Foundational:

- **Unit Overview:** A few paragraphs outlining the unit, including what the unit is about, why it was written this particular way, and how students experience the unit.
- **Unit Map:** A 1-page summary showing how the chapters build upon each other, what questions students will investigate, and what evidence sources they will use to figure those questions out.
- **Lesson Overview Compilation:** 1–2 pages on each lesson provide insight into each lesson's sequence of activities, intent, materials used, and how the lessons connect with and build upon each other.

Supporting:

- **Progress Build:** A thorough explanation of the unit's learning progression (called the "Progress Build"). Understanding and internalizing the Progress Build is key to understanding the embedded unit assessments.
- **Science Background:** A teacher-facing document that gives valuable science content information and calls out common student misconceptions and preconceptions. The Science Background resource provides all the context and subject matter knowledge needed to teach the unit.

30 minutes per unit

If you're a bit strapped for time but still want to get the essentials, try to focus on:

- **Unit Overview**, 1 page
- **Unit Map**, 1 page
- **Lesson Overview Compilation**

5 minutes per unit

If you have only 5 minutes to familiarize yourself with the most essential aspects of the unit, skip right to the **Unit Overview** and **Unit Map**. At the very least, you'll understand the unit narrative and structure, and get a sense of the materials used.

NOTE

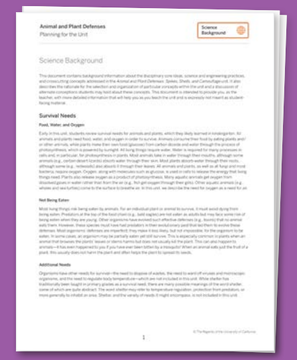
There's much more information available in the Teacher's Guide, including overviews of the unit's assessments, readings, student-facing technology, and standards.

Unit Overview
1 page

Unit Map
1 page

Lesson Overview Compilation
Read through the lesson overviews in Chapter 1 - ***1 page each***

Progress Build
1 page



Science Background
Between 6 and 10 pages

Planning for a unit

Animal and Plant Defenses

22 Lessons

Modeling focus

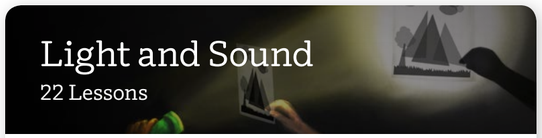
In the *Animal and Plant Defenses: Spikes, Shells, and Camouflage* unit, students learn how structures help organisms and their offspring meet survival needs, serving as a foundation for future learning about adaptations, inheritance, genetics, natural selection, and evolution.

Student role and phenomena

Students take on the role of scientists advising an aquarium director by helping answer young visitors' questions about how Spruce the Sea Turtle will survive when released back into the ocean.

Insights

Students gather evidence through careful observations of photographs and videos of real organisms and by reading science texts. Students also create multiple models throughout the unit to explain their ideas about how defenses function.



Light and Sound

22 Lessons

Engineering design focus

In the *Light and Sound: Puppet-Theater Engineers* unit, students tackle the question "How do we make different parts of a surface brighter or darker?" by investigating cause-and-effect relationships.

Student role and phenomena

In this unit, students take on the role of light and sound engineers as they are challenged with a design problem to design, build, and then project a scene for a puppet show.

Insights

Students apply knowledge to create a background scene for a puppet theater, using patterns of light to create the effects they want. After using light to create a scene, students create sound sources for their puppet show scene. By the end of the unit, students will have engaged in several engineering design cycles in which they learn, plan, make, and test different solutions to a problem.

Spinning Earth

22 Lessons

Investigation focus

In the *Spinning Earth: Investigating Patterns in the Sky* unit, students explore what the sky looks like during the daytime and the nighttime. They examine Earth as a round, ball-shaped planet and develop an understanding of the orientation of Earth and the sun in space, allowing them to figure out that daytime and nighttime are the result of Earth facing or not facing the sun.

Student role and phenomena

Students assume the role of sky scientists helping a young boy named Sai who lives in a place near them in order to understand why the sky looks different to him than to his grandma when they talk on the phone.

Insights

Students explore what they see in the sky at sunset, closely examining the change from daytime to nighttime. They gather data that shows that these patterns repeat from one day to the next in an ongoing cycle. Students develop an understanding that Earth is always spinning to explain these patterns

Planning for a lesson

Amplify Science makes lesson prep as easy as 1, 2, 3. You can use either the printed or digital Teacher's Guide.

1

Read the 1-page **Lesson Overview**, which contains:

- A **1-paragraph summary of the lesson**, including insights into the lesson's activities and any materials used.
- Clearly labeled **phenomena**.
- **Student learning objectives**
- **Lesson at a Glance**, which provides an outline of the lesson along with pacing suggestions.

Have some extra time? Read through the full step-by-step instructions for the lesson to see exactly where different materials are used, where projections are shown, and where to insert recommended teacher talk moments.

2

Every lesson includes a **Materials and Preparation** section, which clearly identifies all of the hands-on manipulatives, Student Books, printed classroom wall materials, and digital tools needed for the lesson. Remember: every lesson is different! Some lessons might call for Student Books; other lessons might call for setting up stations for hands-on investigations. Be sure to glance at the Materials and Preparation section to see what you need for your specific lesson.

3

Download any **Digital Resources** needed for the lesson. For example, most lessons have projections that you can show to your students at specific parts in the lesson. Be sure to download the PDF of projections before class.

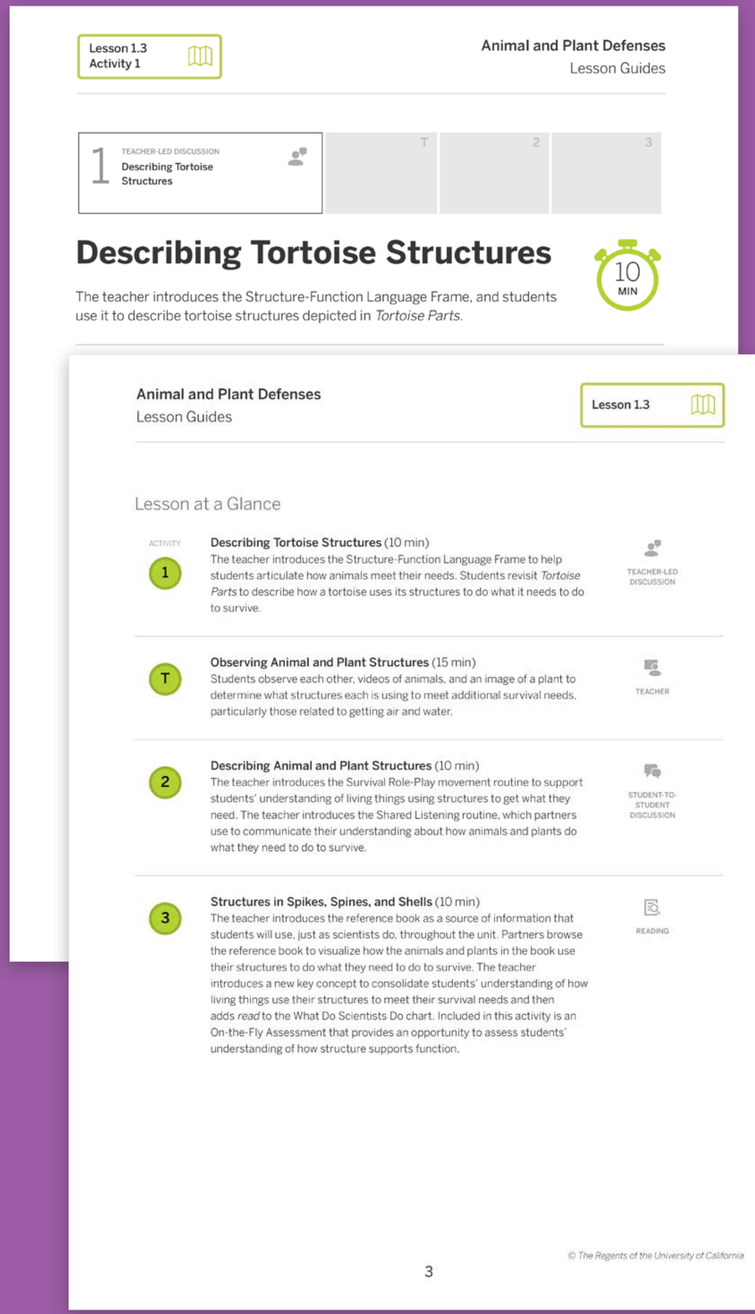
TIP

Did you know that you can download all digital resources you'll need in the unit with just a few clicks? Look for the **Offline Guide** in your digital Teacher's Guide to download all projections, assessments, videos, and more.

Offline Preparation

Teaching without reliable classroom internet? Prepare unit and lesson materials for offline access.

OFFLINE GUIDE



Lesson 1.3
Activity 1

Animal and Plant Defenses
Lesson Guides

1 TEACHER-LED DISCUSSION
Describing Tortoise Structures

T 2 3

Describing Tortoise Structures

10 MIN

The teacher introduces the Structure-Function Language Frame, and students use it to describe tortoise structures depicted in *Tortoise Parts*.

Animal and Plant Defenses
Lesson Guides

Lesson 1.3

Lesson at a Glance

ACTIVITY 1 — **Describing Tortoise Structures** (10 min)
The teacher introduces the Structure-Function Language Frame to help students articulate how animals meet their needs. Students revisit *Tortoise Parts* to describe how a tortoise uses its structures to do what it needs to do to survive.
TEACHER-LED DISCUSSION

T — **Observing Animal and Plant Structures** (15 min)
Students observe each other, videos of animals, and an image of a plant to determine what structures each is using to meet additional survival needs, particularly those related to getting air and water.
TEACHER

2 — **Describing Animal and Plant Structures** (10 min)
The teacher introduces the Survival Role-Play movement routine to support students' understanding of living things using structures to get what they need. The teacher introduces the Shared Listening routine, which partners use to communicate their understanding about how animals and plants do what they need to do to survive.
STUDENT-TO-STUDENT DISCUSSION

3 — **Structures in Spikes, Spines, and Shells** (10 min)
The teacher introduces the reference book as a source of information that students will use, just as scientists do, throughout the unit. Partners browse the reference book to visualize how the animals and plants in the book use their structures to do what they need to do to survive. The teacher introduces a new key concept to consolidate students' understanding of how living things use their structures to meet their survival needs and then adds *read* to the What Do Scientists Do chart. Included in this activity is an On-the-Fly Assessment that provides an opportunity to assess students' understanding of how structure supports function.
READING

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







Amplify.

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