Phenomenal SCIENCE



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TEACHER BOOK

Patricia Oliver

Pearson

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Contact: soporte@pearson.com

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Scope & Sequence

Unit	Lessons	Key words
1 Do you have a problem?	Lesson 1: What are problems and solutions?	*problem, break, solutions, fix, identify, solve, plan*
	Lesson 2: How do ideas become solutions?	*design, model, tool, material, share*
	Lesson 3: How can we solve a problem?	*test*
2 What are living and non-living things?	Lesson 1: What do living things need?	*living, non-living, grow, shelter, needs, breathe*
	Lesson 2: What are non-living things?	*bigger, change*
	Lesson 3: How are living things alike?	*alike, same, size, parts, roots, stems, leaves, flowers, petals, fruits*
3 What are plants?	Lesson 1: How are plants classified?	*cacti, bushes, grass, climates, aquatic, flowering, non-flowering, herb, bush, tree, deciduous, evergreen*
	Lesson 2: What are the parts of a plant?	*trunk, root hairs, nutrients, bark, veins, buds, reproduction*
	Lesson 3: How do plants grow?	*wind, rain, animals, shoot, seedling, bulbs*
4 What do you know about animals?	Lesson 1: What makes animals the same and different?	*attributes, paws, hooves, wings, beaks, whiskers, fins, trunks, snouts, tongues, skin, hair, feathers, fur, scales*
	Lesson 2: How are animals grouped?	*mammals, fish, birds, reptiles, amphibians, insects, diet, carnivore, herbivore, omnivore, vertebrate, invertebrate, cold-blooded, warm-blooded*
	Lesson 3: What are animal life cycles?	*life cycle, birth, growth, reproduction, hatch*
5 How do we sense what's around us?	Lesson 1: What are my body parts?	*internal, external, brain, skull, head, bones, muscles, flexible, arms, legs, hands, feet, prosthetic, mouth, teeth, tongue*
	Lesson 2: What are healthy habits?	*accident, illness, dentist, nurse, doctor, ophthalmologist, cough, sneeze, germs, heal, bandage, helmets, knee pads, life jacket, sunscreen*
	Lesson 3: What are the five senses?	*smell, touch, taste, hearing, sight, sound, vision*
6 How is the weather related to the seasons?	Lesson 1: What are seasons?	*days, nights, months, years, seasons, winter, spring, summer, fall, cold, hot, warm, wettest, cool, rain, humid, snowy*
	Lesson 2: How do we measure and record weather?	*weather, weather report, rain gauge, rainfall, thermometer, temperature, wind, anemometer, weather station, weather forecaster, symbols*
	Lesson 3: How long are days?	*sky, sunrise, sunset, day length, morning, afternoon, evening, calendars*
7 What are materials?	Lesson 1: Where do materials come from?	*object, material, cotton, straw, wood, metal, clay, glass, brick, concrete, sponge, plastic, resin*
	Lesson 2: How do we identify liquids and rust?	*solid, liquid, runny, iron, oxygen, moisture, rust*
	Lesson 3: Which material is most suitable?	*suitable, pillow, jelly, flour, powder, car, rubber*
8 What are materials like?	Lesson 1: What are the properties of materials?	*property, similar, different, category, light, heavy, loud, quiet, round, sink, float, squash, flexible, band, sharp*
	Lesson 2: What are soft and hard materials used for?	*soft, sawdust, button, polyester, thread, fabric, hard, steel, goggles*
	Lesson 3: Which materials let light through?	*transparent, translucent, opaque, transparency test, light source*
9 What are position and motion?	Lesson 1: How do we know where objects are?	*movement, position, on, above, below, under, in front of, behind, next to, between*
	Lesson 2: How do objects move?	*push, away from, pull, toward, fast, slowly*
	Lesson 3: What do magnets do?	*magnet, attract, repel*

	Flashchards & Poster	Makerspace	Skills
	design, idea, materials, plan, problem, share, solution, test, tools Poster: Steps to Solve a Problem Song: Problems Need Solutions	How can we build the tallest tower? STEAM	Creativity T5, Collaboration T6, Communication T7 Forming conclusions T5
	cactus, flower, leaf, petal, roots, stem, sun, trunk, water Poster: Basic Needs of Living Things Song: What Am I?	Are trees alive? STEAM	Communication T20 Comparing T19
	bark, bud, deciduous, evergreen, herbs, seeds, seedling, shoot, soil Poster: Plants and Trees Song: Plants Everywhere	What do plants need to grow? STEAM	Critical Thinking T35 Comparing T31 Communicating T32
	amphibians, birds, carnivores, fish, herbivores, insects, mammals, omnivores, reptiles Poster: Animal Attributes Song: Same and Different	How do we make an animal life cycle model? STEAM	Communication T42, T44 Forming conclusions T45 Observing T44 Classifying T43
	bandage, germs, glasses, hearing, hearing aid, sight, smell, taste, touch Poster: Our Five Senses Song: Five Senses	How can we make a sensory box? STEAM	Creativity T51, Communication T51, T55, T58 Forming conclusions T55
	afternoon, calendar, evening, morning, night, seasons, sunrise, sunset, temperature Poster: Weather Station Song: What's the weather like?	What is the weather like? STEAM	Communication T65 Predicting T69
	brick, clay, concrete, cotton, glass, metal, sponge, straw, wood Poster: Natural and Manufactured Materials Song: The World Is Upside Down!	Would it float or sink? STEAM	Communication T81 Predicting T81
	flexible, float, opaque, round, sink, translucent, transparent, weight Poster: Comparing Materials Song: Materials All Around	How do we make a colorful candle holder? STEAM	Communication T89, Critical Thinking T91 Comparing T90, Testing T94
	above, attract, behind, below, in front of, next to, pull, push, repel Poster: Magnets Attract and Repel Song: The Position and Motion Song	How do we make a magnet maze? STEAM	Collaboration T102, Communication T105, Critical Thinking T107 Predicting T107

Welcome to Phenomenal Science!

Methodology

Teaching science in early education is fundamental. **Phenomenal Science** is a content-based series that provides an enjoyable learning experience based on the integration of five main learning approaches: **Blended Learning**, **Flipped Learning**, **STEAM**, **Makerspace**, and **Soft Skills** development. **Phenomenal Science** aims at boosting learners' understandings of the world while fostering essential skills for life.



Flipped and Blended Learning

Phenomenal Science blends print and digital learning to provide a complete and enriched learning experience that allows students to direct their own learning and to learn actively and collaboratively. The digital resources can be used in class and can also be assigned to individuals for outside-the-classroom work.



Soft Skills

Phenomenal Science integrates the development of essential soft skills within the activities done in class. The soft skills developed throughout the course are Critical thinking, Communication, Collaboration, Creativity, and Citizenship.



Science Skills

The development of science skills is needed for inquiry learning. Observing, predicting, measuring, classifying, inferring, analyzing, and reaching conclusions are some of the skills promoted.



STEAM

Science, Technology, Engineering, Art, and Math—subjects are integrated throughout the units with the connection reinforced and the learning applied at the end of each one.



Makerspace

Phenomenal Science provides nine hands-on creative projects that encourage students to design, experiment, build, and invent as they engage in science.

Giving students access to a **Makerspace** center transforms your science classroom. It introduces aspects of STEAM. Such a space promotes an environment where students become the "makers" that create, invent, build, craft, produce, explore, and solve problems as they collaborate with each other.

A **Makerspace** is an area in the classroom or school where students have access to a wide variety of materials, tools, and supplies that can be used for the purposes of developing projects and doing experiments.

Tips for starting a **Makerspace** center in your classroom:

- Select an area. You'll need to have a stock of materials in the same space and at least two sturdy tables.
- Involve students in an open materials-gathering process. This can be done periodically, and the materials collected by students are classified and stored. Students need to collect items that are found around them.
- Get shelves, see-through boxes, and other types of storage containers to organize supplies.
- Use as many recyclable and reusable materials as possible. Always try and reduce waste.
- Clearly label and organize materials and tools.
- Keep an inventory list and involve students in keeping track of it.
- Organize donations campaigns for specific supplies needed such as wire, batteries, screw drivers, etc.
- Get creative but selective while collecting supplies. Accept materials brought by students, but be careful not to turn your space into a big storage for supplies that aren't very useful.



Teaching Science

The Teaching Cycle

The nine units in each level are designed based on a cycle that integrates 21st Century Competencies turned into five learning stages: **Connect**, **Investigate**, **Synthesize**, **Demonstrate**, and **Evaluate**. The learning cycle in a unit starts with a **Phenomenal Video** introducing the main topic and triggering curiosity. A unit ends with the development of a project that wraps up the unit's content. Throughout the unit, diverse digital and printed resources can be used to present, develop, and reinforce science concepts.

Structure of a Unit

The **Student Book** is organized into nine units full of facts and interesting information that will engage students in the phenomenal world of science.

Each unit is organized into an Opener, Lessons 1, 2, 3, a **Makerspace** Project, a Review, and a Glossary making up a total of 12 pages. Each lesson integrates the use of additional resources such as a projectable activity, a lesson worksheet, and an interactive vocabulary practice activity. Additionally, the **Phenomenal Video**, the **Makerspace** Project, and the **STEAM** connection are accompanied by a worksheet.

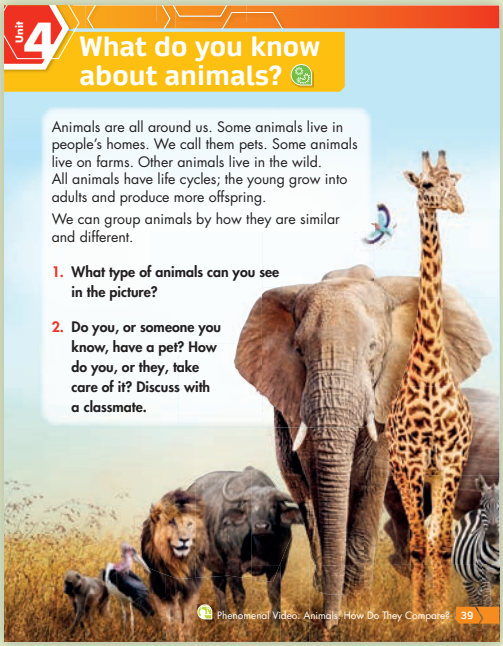
The **Teacher Book** provides guidance on how to approach the topics and conduct the activities in the **Student Book**. It also describes when and how to do activities using the worksheets and additional resources on the **Phenomenal Science** website.

After each unit, there's a **Review** page followed by a self-assessment section preparing students for the formative assessment. There are three types of assessments: one test per unit, a mid-course test (between units 4 and 5), and an end-of-course test. The **Teacher Book** includes one photocopiable version of each test type, but two more versions are available on the **Phenomenal Science** website.

Student Book

The **Student Book** provides activities to present and understand concepts. It is used in class.

The **Opener** introduces the unit's topic. It includes the **Phenomenal Video** that can be watched before or in class to engage students with the unit's main topic.

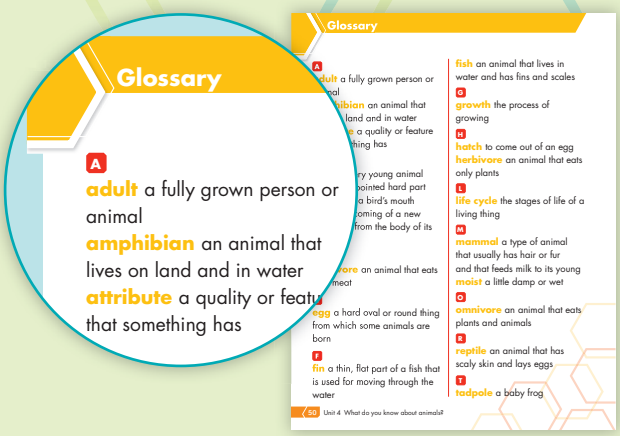


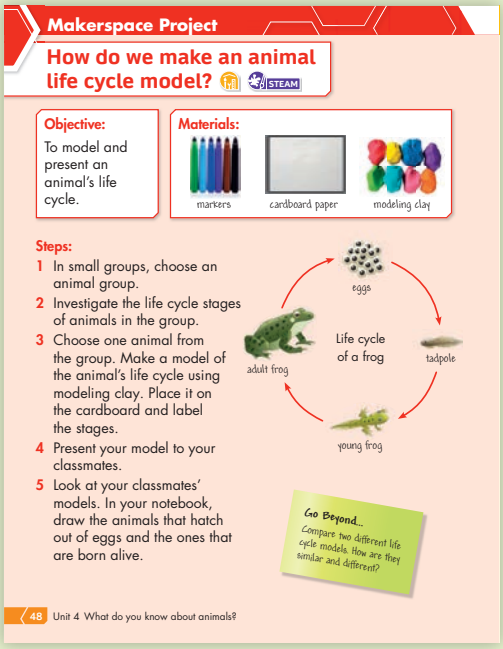
Series of activities come after texts to check comprehension, to encourage students to investigate, and to synthesize knowledge and ideas.

The **Review** page has one activity per lesson to review the key concepts of the unit to prepare them for assessment.



The **Glossary** page at the end of each unit includes descriptions of the most used relevant words.

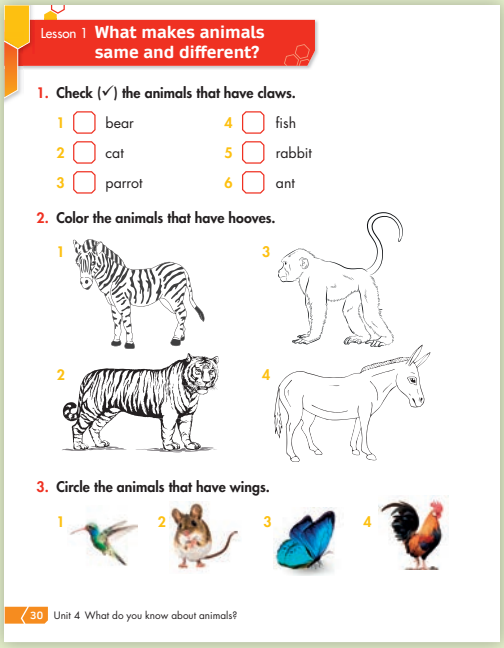




The **Makerspace Project** is a hands-on team project that provides students the opportunity to demonstrate their understanding of the topic and to connect it to an STEAM subject.

The **Go Beyond** feature encourages students to transfer knowledge to new situations related to the project.

Workbook


Lesson 1 What makes animals same and different?

1. Check (✓) the animals that have claws.

1 ☐ bear
2 ☐ cat
3 ☐ parrot
4 ☐ fish
5 ☐ rabbit
6 ☐ ant

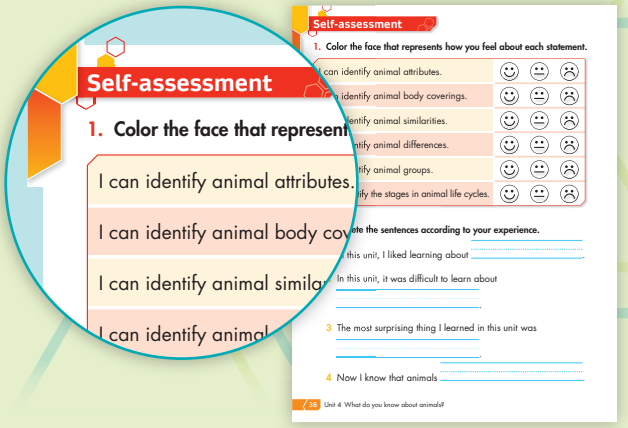
2. Color the animals that have hooves.

3. Circle the animals that have wings.

30 Unit 4 What do you know about animals?

The **Phenomenal Science Workbook** is is an optional component that provides activities to further develop concepts and consolidate learning. Its use is suggested as homework and as extra activities in class.

The Self-assessment section encourages students to reflect on their learning process and on the development of soft skills.


Self-assessment

1. Color the face that represent

I can identify animal attributes.
I can identify animal body co
I can identify animal simila
I can identify animal

Self-assessment

1. Color the face that represents how you feel about each statement.

I can identify animal attributes.
I can identify animal body coverings.
I can identify animal similarities.
I can identify animal differences.
I can identify animal groups.
I can identify the stages in animal life cycles.

2. Complete the sentences according to your experience.

1 In this unit, I liked learning about
2 In this unit, it was difficult to learn about
3 The most surprising thing I learned in this unit was
4 Now I know that animals

35 Unit 4 What do you know about animals?

Teacher Book

The unit **Overview** presents the contents and resources available and lists the learning objectives achieved in the unit. The unit **Overview** spread includes:


Unit 4 Overview

What do you know about animals?

LEARNING OBJECTIVES
- Learn that animals live everywhere.
- Explore animal attributes, body parts, and body coverings.
- Notice how animals are the same and different.
- Compare animal groups.
- Learn about animals' diets.
- Notice that animals can be vertebrate or invertebrate, cold- or warm-blooded.
- Learn about an animal's life cycle.
- Construct an animal life cycle model.

STEAM STEAM CONNECTION
- Students demonstrate curiosity about how animals are the same and different.
- Students notice animal body parts and coverings.
- Students observe animal attributes to determine which group they belong to.
- Students investigate and discuss animal life cycles and how animals are born.

Use the Unit 4 STEAM worksheet to work on the unit's topic connection with the subject of science.

DIGITAL RESOURCES
Phenomenal video: *How are animals alike and different?*
Do you have a pet?
Quest: *A good pet?*
Projectable activities: *Comparing different animals* (Lesson 1), *Animal types* (Lesson 2), *Animal life cycles* (Lesson 3)
Printable: Lessons worksheets
Vocabulary activities

MAKERSPACE
How do we make an animal life cycle model?
This project can be done at the end of the unit in a single class. Students investigate, identify, and name the life cycle stages of an animal of their choice. They notice that animals can be born live or can hatch out of eggs.
Students work in groups to do this project and compare their models. Allow some discussion time at the end so that they can all reflect on life cycles. Prepare kits of material per team in advance, but leave room for students to choose the materials they think they could use.
Print the Unit 4 Makerspace worksheet on the platform. Alternatively, photocopy the worksheet on page T126.

ASSESSMENT TOOLS
- Review: Student Book page 49

Self-assessment: Workbook page 36
Assessment: Unit 4 Test

FLASHCARDS
amphibians, birds, carnivores, fish, herbivores, insects, mammals, omnivores, reptiles
Lesson 2, Makerspace project, and Assessment.

POSTER
The Unit 4 poster shows a polar environment with arctic animals: a puffin, a penguin, walruses, a polar fox, and a polar bear. It also shows animal body parts: wing, beak, skin, fur, and paws. It can be used to show animal attributes.
Lesson 1.

fish
mammals
birds
Phenomenal Science Unit 4 Animal Attributes
wing beak skin fur paws

T38a Overview
Unit 4 What do you know about animals? T38b

- A **Makerspace** box describing the project and making reference to the Makerspace worksheet.
- A **STEAM** connection box listing the activities that integrate the contents of the unit with the STEAM subject.
- A digital resources box listing the resources available on the platform.
- An assessment tools box listing three types of assessments: Review, Unit Test, and Self-assessment.


Lesson 1

What makes animals the same and different?

Word Box
attributes
paws
hooves
wings
beaks
whiskers
fins

Animal Differences

Many animals have similar characteristics or **attributes**. These attributes describe the animal. Animal body parts are named differently from humans'. We have hands and feet. Cats and dogs have **paws**. Tigers and bears do, too. Horses and zebras have **hooves**.

Some animals have body parts that others do not. Many animals have four legs but others have just two. Birds have **wings** and **beaks**. Cats and mice have **whiskers**. Fish have **fins**.

1. Circle the animals that have paws.

2. Can you guess the animal by looking at its snout?

dog dolphin cat

40 Unit 4 What do you know about animals?

Lesson 1

What makes animals the same and different?

Learning outcome: Students will have identified that animals have similar and different attributes.
Keywords: *attributes, paws, hooves, wings, beaks, whiskers, fins*
Materials: a magazine cutout of an animal
Resources: Unit 4 poster; Unit 4 song: *Do you have a pet?*

CONNECT

Display the Unit 4 poster and have students describe the habitat. Then ask students to name the animals they see. Leave the poster on the board.

DO YOU HAVE A PET?

Tell students they are going to sing a song about pets and animals. Play the song once or twice for students to get familiar with and start singing it. Ask: *Which words did you recognize?* Write them on the board. Ask: *What does the song talk about?* Play the song again and have students sing along.

INVESTIGATE

Tell students to share their animal cutouts with a classmate. Ask them to first name the animals and then identify some similarities. Ask: *Do they have the same number of legs? Do they have fur? Do they live in the same place?* Then ask them to brainstorm other animals similar to the ones in their cutouts. Tell students to keep the cutouts in class for the next session.

SYNTHESIZE

Read the text about similar animal attributes out loud. Ask comprehension questions, such as: *What are similar characteristics in animals called? Are animal body parts called the same names as in humans? What are some animal body parts?* Ask students to read the words in the word box.

Elicit their meaning. Ask if they have heard any of the words in the song (*paws*). Direct students' attention to the Unit 4 poster again. Ask students to name the similar attributes they can see between two or more animals in the poster. Help them if needed.

1 **Circle the animals that have paws.**
Have students identify the animals shown in each picture. Then point to each picture as you ask: *Does the [cow / cat / bear / horse] have paws?* Elicit answers and tell students to circle the pictures. Finally, ask: *Do you have paws? What do you have?*

2 **Can you guess the animal by looking at its snout?**
Elicit the meaning of the word *snout*. Have students go back to the text to check what it refers to. Read the question. Students may work in pairs or as a class.

For the next class...

Have students do the activities on page 30 in their Workbook. Refer to the Workbook Answer Key on page T111.
Remind students to keep their animal cutouts for the next class.

DIFFERENTIATED INSTRUCTION

Remediation

Have students draw and label a person's nose, an elephant's trunk, and a dog's snout.

Stretch

Have students draw a T-table and write as many animals as they know that have paws (cat, tiger, dog, fox, rabbit, bear, racoon, mouse, rat, etc.) and hooves (horse, cattle, rhinoceros, deer, pig, sheep, camel, giraffe, antelope, etc.).

Lesson 1 What makes animals the same and different? T40

- The **Student Book** pages are embedded with the answer key included.

- The teacher's notes provide guidance on: the class activities, flipped and blended learning, differentiated instruction, and extra activities.

Features

- The General information box lists the relevant information for planning each class.
- The use of **Flashcards** and **Posters** is described within the teacher's notes. These resources are printed and also available on the website.
- The **Flipped learning** box contains activities to support struggling students (Remediation) or to take students further (Stretch).
- The **That's Phenomenal** box contains interesting facts related to the content covered in a specific class.
- The **Phenomenal activity** box describes interesting and fun activities.
- There are specific activities are included to promote the development of science skills such as inferring, observing, predicting, inquiring, etc.
- The development of the Communication, Critical thinking, Collaboration, and Citizenship soft skills is promoted in specific activities througout the unit.
- There are Extra activities suggested to be done for extended practice if time allows.
- The **For the next class...** box includes the directions for homework or preparation for the next class.
- There are notes for using worksheets, projectable resources, and vocabulary activities to enrich and reinforce the learning experience.
- At the end of each lesson students add ideas to a mind map to express what they have been learning.
- The **Makerspace Project** page gives the teacher ideas on how to organize and conduct the unit's project.
- The **assessment** page provides directions for three stages Review, Self-assessment, and unit testing.
- Grade 1 includes nine science-related songs to practice key concepts.

Digital Components

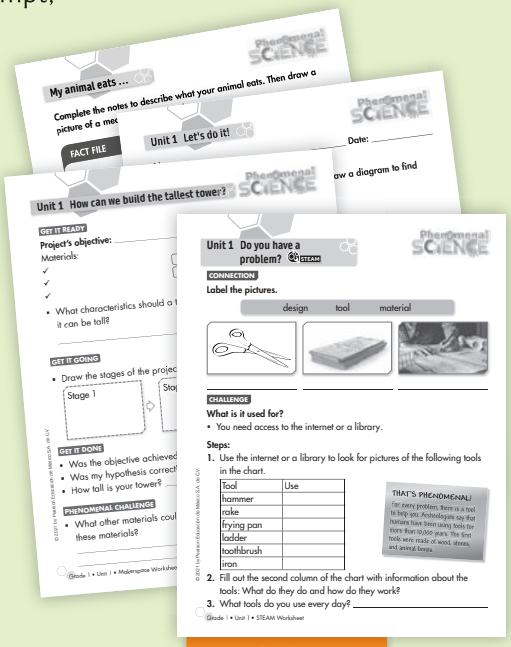
- There is a variety of assets available on the **Phenomenal Science** website to enrich the learning process by incorporating digital activities into the classroom. These can be identified with the **Blended learning** icon and their use is described in the teacher's notes.
- Students can access the **Phenomenal Science** website to watch the **Phenomenal Video** and to practice vocabulary with interactive activities.
- Teachers can find projectable activities; printable **Phenomenal Video**, **Makerspace**, **STEAM**, and **Lessons worksheets**; three versions of tests; and projectable **Flashcards** and **Posters**. Also, the **Student Book** is provided in its digital version to be used in class or by the students at home.
- The **Projectable activity** can be used to present lesson topics. There are some interactive activities that can be done in class or at home.
- Each unit has a set of **Flashcards** that can be used to present, prompt, and review key concepts at different stages.
- The unit **Poster** prompts the key concepts through appealing and engaging pictures. Its use is suggested at different stages of the unit.



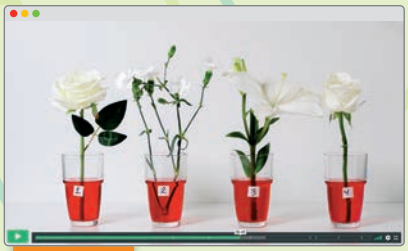
Flashcards



Posters



Worksheets



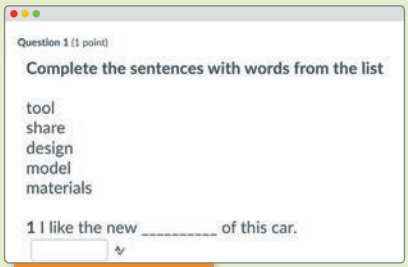
Video



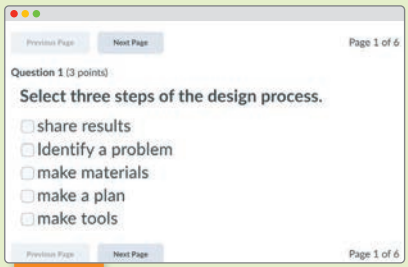
Projectable



Projectable



Vocabulary



Test

Do you have a problem?

LEARNING OBJECTIVES

- Realize that problems can have different solutions.
- Learn that a problem needs to be identified in order to be fixed.
- Learn that fixing problems is important.
- Realize that problems can have many different solutions.
- Practice all the steps in the process of looking for a solution.

STEAM CONNECTION

- Students identify problems.
- Students use a step-by-step method to look for one or several solutions.
- Students learn about a multi-step process to fix a problem: identify, plan, design, choose tools and materials, test, redesign, test again, and share.

Use the Unit 1 STEAM worksheet to work on the unit's topic connection with the subject of engineering.

DIGITAL RESOURCES

Phenomenal video: *Let's do it!*

Problems need solutions
Quest: *Solving problems*
Projectable activities: *Problems and solutions* (Lesson 1), *Classroom tools* (Lesson 2), *Bird feeders* (Lesson 3)
Printable: Lessons worksheets
Vocabulary activities

MAKERSPACE

How can we build the tallest tower?

This project can be done at the end of the unit in a single class. Students work in groups and come up with a plan to build the tallest tower using marshmallows and toothpicks. They plan, design, and measure their tower, and then compare it with other teams.
Prepare kits of material per group in advance, but leave room for students to choose the materials they think they could use.

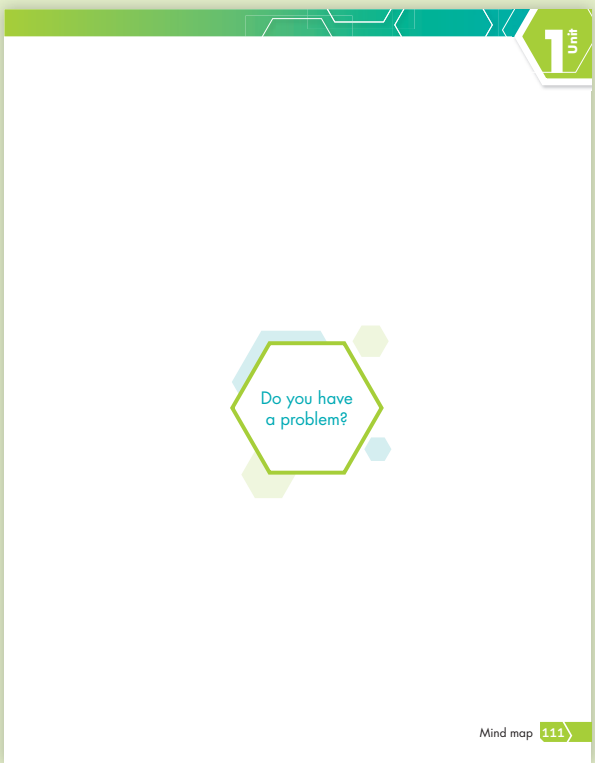
Print the Unit 1 Makerspace worksheet on the platform. Alternatively, photocopy the worksheet on page T123.

ASSESSMENT TOOLS

- Review: Student Book page 13

Self-assessment: Workbook page 12

Assessment: Unit 1 Test



FLASHCARDS

design, idea, materials, plan, problem, share, solution, test, tools

Lessons 1, 2, 3, and Assessment.



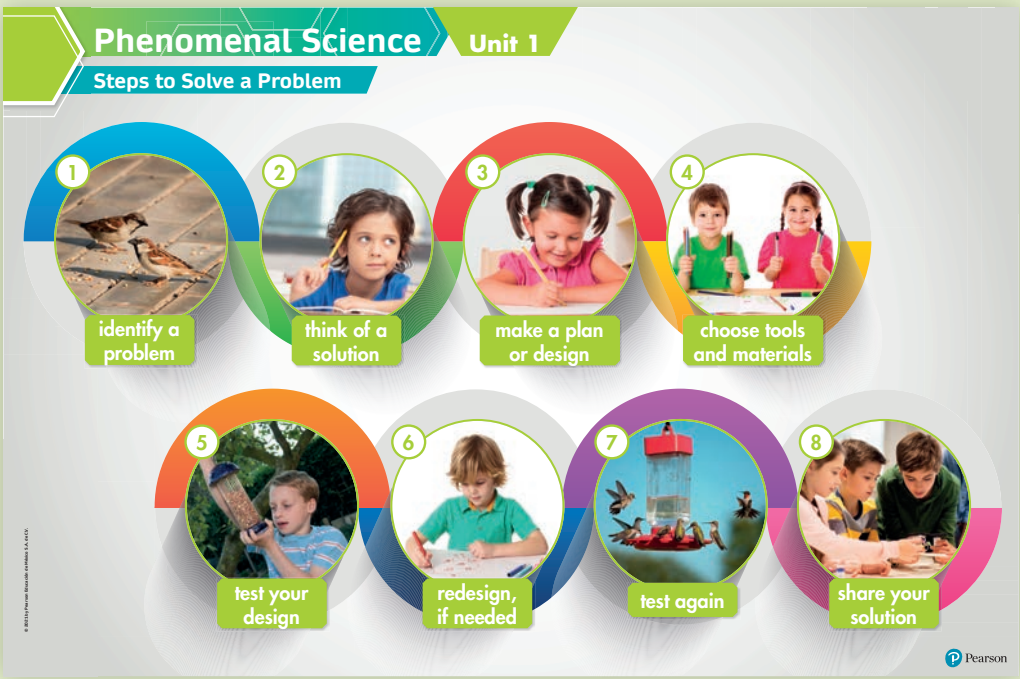




POSTER

The Unit 1 poster shows the steps to solve a problem. The steps are numbered and have a picture and a label. It can be used to help students reflect on the steps as they learn them in the lessons, and as review.

Lesson 3 and Assessment.



Do you have a problem?

Learning outcome: Students will have learned what problems and solutions are.
Keywords: *problem, break, solutions, fix*
Resources: Unit 1 Phenomenal video: *Let's do it!*; Unit 1 video worksheet; Quest: *Solving problems*

CONNECT

FLIPPED LEARNING

Before class

Students watch the video before class. Give them the Unit 1 video worksheet beforehand to complete as they watch the video at home. Alternatively, you could watch the video in class.

In Class

Ask students to take out their video worksheet and elicit examples of some problems they wrote about. Write the title of the experiment on the board, *Let's do it*, and then write *Materials* below the text. Then elicit the materials used. Put students into small groups and have them report on their observations recorded in the table. Have a guided discussion about the results and the conclusion.

INVESTIGATE

Read the unit title. Direct students' attention to the background picture. Ask: *What do you think the children are thinking about? How do they look: happy, sad, worried, thoughtful?* Encourage students to look at the rest of the picture to create a hypothesis about what the children might be thinking about and what their problem might be. Then read the text out loud.

1 Think about a problem you've had. How did you solve it? Draw it in your notebook.
Ask students to think about a problem they have had recently or in the past. Ask them to reflect on how they solved it and if they followed the process described in the Unit 1 video worksheet or not. Let them know that they are just sharing their experience and that there is no wrong answer. Have them draw the problem and the solution in their notebooks. Help if needed.

QUEST Solving problems

Go to the *Quest* activity on the platform. Ask students to describe the pictures first. Then read the question and let them discuss in pairs. Have pairs share their answers with the rest of the class and explain their choice. Explain that there will usually be more than one solution for a problem. However, this problem in the pictures has only one solution.

Move forward and show the next screen. Have students describe the pictures first. Then ask the question and let them discuss in pairs again before sharing with the rest of the class. Use their answers to explain that there are always correct or appropriate tools to use to fix a problem. Do the same for the third slide, explaining that you do not have to fix a problem on your own and that you can always ask for help.

MIND MAP

Start a mind map on the board. Explain what it is and what it is for. Have students go to page 111 in their Student Book and read the title question of this unit at the center of the mind map. Add the concepts *identifying problems, designing solutions,* and *solving problems* around the map.

Unit 1

Do you have a problem?

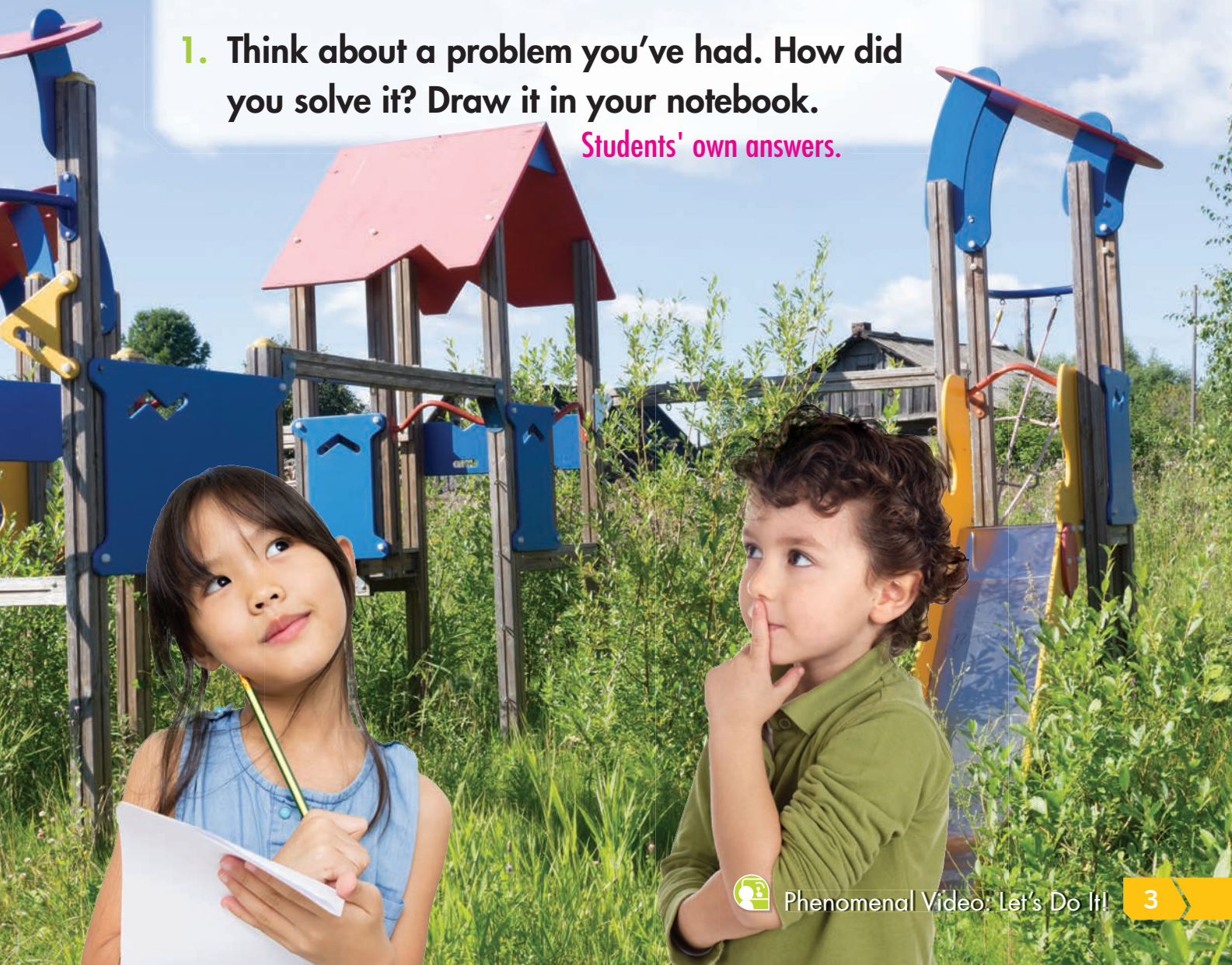
When Something Goes Wrong

When something goes wrong, we say we have a **problem**. Sometimes, things **break**, get old, or stop working properly. Or, we need to change something to make it work better. When we face problems, we look for **solutions**. Some problems are easy to **fix**, but others may require more time and more people to solve it.

Word Box
problem
break
solutions
fix

1. **Think about a problem you've had. How did you solve it? Draw it in your notebook.**

Students' own answers.



Phenomenal Video: Let's Do It!

What are problems and solutions?

Identify a Problem

To **identify** a problem is to observe and recognize it. Identifying a problem is the first step to take toward fixing it.

Word Box
identify



1. Draw something you had that was broken.

Students' own answers.

2. Circle the photos that show problems.

1



2



3



What are problems and solutions?

Learning outcome: Students will have learned what it means to identify a problem, and will have learned that identifying a problem is the first step toward fixing it.
Keyword: *identify*
Resources: *Problems and solutions* projectable activity; Unit 1 song: *Problems need solutions*

CONNECT

Problems and solutions

Project the *Problems and solutions* activity on the board. Have students describe the problems in the pictures. Then ask them to match the solutions to the problems. Encourage students to explain why they think each is a good solution.

INVESTIGATE

Get students into groups of four to discuss if they have ever had the problems in the pictures in the projectable activity. Then ask them to brainstorm other solutions for those problems. Since students are yet to have mastered the problem-solution process, let them know they can use their imagination to come up with other solutions. When they have finished discussing, ask volunteers to share some of their answers.

PROBLEMS NEED SOLUTIONS

Tell students that they are going to listen to a song about problems and solutions and the process one needs to follow to get from one to the other. Play the song once and have students listen. Ask: *What words did you recognize?* Play the song a second time and have students sing along.

SYNTHESIZE

Read the text about identifying a problem out loud. Ask students to circle words that they think are important (e.g. *observe* and *recognize*). Ask comprehension questions: *What does it mean to identify a problem? Why is it important to identify a problem?* Say: *Imagine you forgot your science book at home today. Would you say that is a problem? Why?* Prompt them with additional questions to have them realize that it would be a problem because they would not have something they need for the class.

1 Draw something you had that was broken.

Ask students to think of things they have or have had at home that were broken. Ask them to draw one of the items and share their drawings in groups of four. Encourage them to explain how the item in the drawing broke.

2 Circle the photos that show problems.

Have students describe the pictures in detail. Then let them complete the activity individually. Check answers as a class and ask volunteers to explain their answers.

For the next class... OPTIONAL

Have students do Activities 1 and 2 on page 6 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation

Ask students if they have ever had one of the problems described in the pictures in the *Problems and Solutions* projectable activity and have them share their solution with a classmate.

Stretch

Have students work in pairs. Ask them to share two problems they have now or have had in the past. Their classmate will think about and offer possible solutions.

Learning outcome: Students will have learned that solutions solve problems, and that sometimes there is more than one solution.
Keyword: *solve*
Materials: a book with a torn page (including the torn piece)
Resources: Lesson 1 worksheet

CONNECT

Show students a book with a torn page. Show them the torn piece as well. Tell them that library books are handled by many people and, even if everyone is very careful, a page can tear. A torn page is a problem. Ask: *Has this ever happened to one of your schoolbooks or books at home?* Let students share their experiences.

INVESTIGATE

Have students brainstorm solutions for the book problem you just presented. Encourage them to go beyond the obvious solutions and give as many that they can think of. Write them on the board. When you have a few, have students vote which one they think is the best solution. You may want to draw a bar graph or pie chart indicating three or five other popular solutions.

SYNTHESIZE

Read the text out loud. Ask comprehension questions: *What is a solution? Is there only one way to solve a problem?* Remind students of the problem they talked about in the previous session: forgetting to bring their science book to class. Ask: *Why is it important to fix that problem?* Have them brainstorm ideas. Ask them to think about all the possible solutions and then choose the best in groups of four. Once they have chosen, have each group share with the rest of the class the solution they chose and why they think it is the best solution possible.

3 Match the problems to the solutions.

Have students describe the pictures first. Then let them match the pictures individually. Check answers as a class and ask volunteers to explain how those solutions would solve the problems in the pictures.

4 With a classmate, think about ways to solve these problems.

Read the problems out loud and answer any vocabulary questions students might have. To develop the Creativity skill, have students work in pairs to think about different ways to solve these problems. You can check answers as a class by having pairs share their ideas, or you can have pairs share their ideas with other pairs. Walk around and monitor.

Forming Conclusions Distribute the Lesson 1 worksheet. Have students describe the problem. To develop the Forming Conclusions skill, ask them to consider all three possible solutions in pairs and discuss which one they think is best. Ask them to explain their answer.

For the next class... OPTIONAL

Have students do Activity 3 on page 6 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation

Have students draw a problem they have or have had, and the solution. Ask them to label the problem and the solution with a word, phrase, or short sentence.

Stretch

Have students brainstorm other possible solutions for the problems in Activity 3 (e.g. go inside, get a blanket/get another pair of socks, cut your hair really short).

Find a Solution

When you have a problem, you need a solution. A solution is a way to **solve** a problem.

Word Box
solve

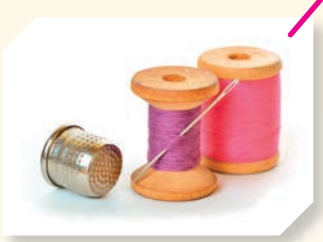
Problems can be uncomfortable, so fixing them is important. Sometimes, there is more than one way to solve a problem. Be open-minded! Think of all the possibilities! We should always look for the best solution.

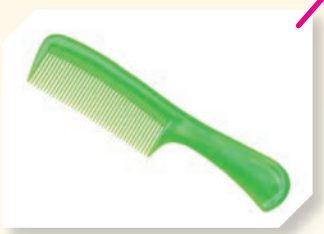
3. Match the problems to the solutions.

1 

2 

3 

a 

b 

c 

4. With a classmate, think about ways to solve these problems.

Possible answers:

feeling cold
put on a jumper, hat, scarf, or jacket; go into a warm place; sit by a fire

hole in pocket
sew up hole

messy hair
brush hair; put on hat

broken plate
glue plate; get a new plate

uneven teeth
get braces

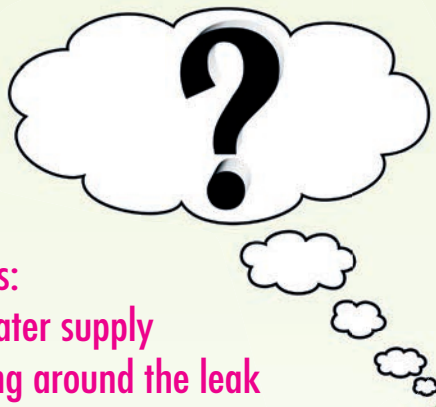
Make a Plan to Solve It!

Once you identify the problem, and have an idea about how to solve it, you need a **plan**. A plan is how you are going to put your idea into action. Sometimes, it's good to make a plan alone. Other times, it's good to work with others.

Word Box
plan

5. **In pairs, look at the picture of the pipe. In your notebook, list three ways you could fix the problem.**





Possible answers:
- turn off the water supply
- wrap something around the leak
- put a bucket under the pipe

6. **How do you solve your problems? Underline your answer.** Students' own answers.

1 I prefer to think about my plans alone.

2 I prefer to talk with others about my plans.



Learning outcome: Students will have learned that you need a plan to put an idea into action.
Keyword: *plan*
Materials: picture of a dog in a backyard
Resources: Unit 1 flashcards: *problem, solution, idea, plan*; Lesson 1 *Vocabulary activity*

CONNECT

Display the Unit 1 flashcards for *problem* and *solution*. Have students identify which flashcard shows the problem and which shows the solution. Ask if they have ever had that problem and what solution they applied. Let them share their experiences as a class or in small groups. Leave the flashcards up on the board or a wall.

INVESTIGATE

Display the Unit 1 flashcard for *idea* and elicit the word. Tell students you have a problem and need their help. Show the picture of the dog in the backyard and say that your dog loves being outside and that it does not like to be indoors. It sleeps in the backyard but gets wet when it rains at night. That is a problem and you do not know what to do. Say: *What can I do? What solutions can you think of for my problem? Can you help me brainstorm some ideas?* Stick the Unit 1 flashcard for *idea* on the board and write students' ideas underneath.

SYNTHESIZE

Read the text out loud. Ask comprehension questions: *What comes after identifying a problem? And after having an idea? What is a plan? Can you make a plan with others?* Make sure students understand the concept of planning. Get students into groups, have them choose one of the ideas from the board to solve the problem with your dog, and ask them to make a plan. Ask: *How can you put that idea into action?* Accept all answers.

5 In pairs, look at the picture of the pipe. In your notebook, list three ways you could fix the problem.

Have students describe what is happening in the picture. To develop the Collaboration skill, get students into pairs to discuss ways in which they could fix the problem in the picture. Then have them write three. Check answers as a class.

6 How do you solve your problems? Underline your answer.

Read the sentences out loud and have students underline their answer. Let them know there is no wrong answer, as it is a personal preference.

DEMONSTRATE

MIND MAP

Have students go to page 111 in their Student Book and add information to the *identifying problems* section. Elicit what they have learned about problems, solutions, and steps to solve a problem in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 1 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 7 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation

Have students reread the text and explain to a classmate what a plan is.

Stretch

Have students explain one problem they have had, and which plan they used to solve it.

Lesson 2

How do ideas become solutions?

Learning outcome: Students will have learned that in the process of getting to a solution, they need to make a design and choose the appropriate tools.
Keywords: *design, model, tool*
Materials: picture of a dog in a backyard
Resources: Unit 1 flashcards: *tools, design, idea, plan; Classroom tools* projectable activity; Lesson 2 worksheet

CONNECT

Classroom tools

Display the Unit 1 flashcard for *tools*. Elicit the meaning of the word and help if needed. Project the *Classroom tools* activity on the board. Have students identify every tool and what it could be used for. Then have them select tools that are only used in the classroom.

INVESTIGATE

PHENOMENAL ACTIVITY

Display the Unit 1 flashcard for *design* and elicit the meaning of the word. Remind students of your dog's problem. Show the picture if needed. Remind them also of all the ideas they gave. Ask students to individually design a doghouse for your backyard. Distribute the Lesson 2 worksheet. Ask students to draw the doghouse with as many details as they can and color it. Then have students gather in small groups and help each other decide which tools they might need to build the doghouses they designed. You can show the pictures of the tools in the *Classroom tools* projectable activity to help them. Assist students with new vocabulary if needed. You can hang all the designs around the classroom in a "Design Exhibition". Give students a few minutes to walk around and look at each student's design.

SYNTHESIZE

Read the text out loud. Ask comprehension questions: *What is a design? And a model? What is a tool?* Then elicit the tools in the picture around the text and ask students if they have ever used them and what for.

1 Match the actions to the pictures.

Ask students to describe the pictures in detail. Then read the words out loud and have students do the matching task individually. Check answers as a class.

2 Think about the tools you know. With a classmate, complete the following directions.

Ask students to brainstorm tools. They can say the ones learned or reviewed in the Connect stage. To develop the Communication skill, have one classmate read the sentences and the other give the name of the tool. Then have them switch roles.

Extra activity

Put up the Unit 1 flashcards for *idea, plan, design* and *tools* at a comfortable height for students. Get students to form two lines. Say one of the words and have one student from each line race to touch the corresponding flashcard.

For the next class... OPTIONAL

Have students do the activities on page 8 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation

Have students make a picture in their notebook with the tools they use to draw and color. Ask them to label the objects.

Stretch

Have students name two or three more objects for the directives in Activity 2.

Lesson 2

How do ideas become solutions?

Make a Design

A **design** is anything that makes your plan visible. It can be in writing, it can be a drawing, or it can be a **model**. A model is often smaller and simpler than the final product. Others can give you suggestions and opinions about your design.

Word Box
design
model
tool

Choose Tools

A **tool** is a device that helps us do an action. Tools help us cut, paste, tie, punch holes, connect, curl, and bend materials. You need to choose the right tools to make your design.

1. Match the actions to the pictures.

1 writing 2 drawing 3 model

a 

b 

c 

2. Think about the tools you know. With a classmate, complete the following directions. Possible answers:

1 Name a tool that helps you cut things. scissors

2 Name a tool that helps you put two objects together. stapler

3 Name a tool that helps you punch holes in things. hole puncher

Choose Materials

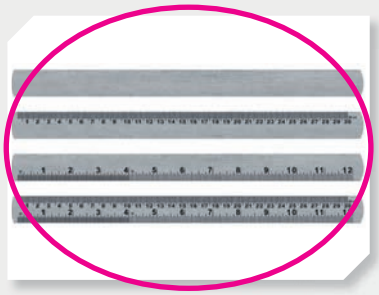
A **material** is what you use to create your solution. The right materials are important for your solution to work well.

Word Box
material

3. Imagine you need to invent a ramp for a toy car to roll down fast. Circle the materials you need.

1 

cardboard

3 

rulers



2 

pipe cleaners

4 

wood

4. In your notebook, design a ramp for the toy car. Answers may vary.

Learning outcome: Students will have learned what materials are and that they are important for a solution to work well.
Keyword: *material*
Materials: picture of a dog in a backyard
Resources: Unit 1 flashcard: *materials;* Unit 1 song: *Problems need solutions*

CONNECT

Display the Unit 1 flashcard for *materials*. Elicit the word or help students with it. Tell them that materials are what things are made of. Give them examples: clothes are made of fabric, cards are made of plastic, car tires and shoe soles are made of rubber, grocery bags and water bottles are made of plastic, etc. Talk about classroom objects and have students say which materials they think these objects are made of.

INVESTIGATE

Remind students of their doghouse design and tools. Show the picture again if needed. Invite them to now think about possible materials. Tell them they can choose several materials for different parts of the doghouse. They can work in small groups again.

PROBLEMS NEED SOLUTIONS

Before you play the song, ask students if they remember the topic or any part of the song. Play the song once. They can sing along, but ask them to pay attention to the steps the song talks about. Play the song again and have students just sing along. Go to page T165 to see the activity suggested.

SYNTHESIZE

Read the text about choosing materials out loud. Ask comprehension questions about what materials are and how important they are as part of the solution to a problem.

3 Imagine you need to invent a ramp for a toy car to roll down fast. Circle the materials you need.

Read the instructions out loud. Have students look at the pictures and read the labels. You may want students to discuss in pairs which materials are more suitable before they circle their answers. Check answers as a class.

4 In your notebook, design a ramp for the car toy.

Ask students to take into account the materials they circled in Activity 3 and design a ramp for the toy car. Tell them to be imaginative, but be sure to use the materials they selected. Monitor students as they work and prompt them with questions if necessary.

THAT'S PHENOMENAL!

Baldwin Street in Dunedin, New Zealand, holds the Guinness World Record for being the steepest street in the world. It has a gradient of 34.8%. Imagine how fast cars can go down it!

For the next class... OPTIONAL

Have students do Activity 4 on page 9 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation

Have students make a list of all the materials they have learned in this lesson (in their Student Book and in their discussions with classmates).

Stretch

Have students brainstorm strong materials, like wood or metal, and softer materials, like paper or cardboard. You may also want to create a list yourself and have students classify them.

Learning outcome: Students will have identified a problem in a picture and solutions for it. They will also have learned how to share solutions with others.
Keyword: *share*
Resources: Unit 1 flashcards: *problem, solution, idea, plan, design, tools, materials, share*; Lesson 2 *Vocabulary activity*

CONNECT

Display the Unit 1 flashcards for *problem, solution, idea, plan, design, tools, materials,* and *share,* and elicit the words. Play a game of "Which one is missing?" Review the words with students for a few minutes. Then display all the flashcards except one, and have students or pairs of students call out which one is missing.

INVESTIGATE

Display the Unit 1 flashcards again in a different order. You can also hang them around the classroom. Have students think about the process they followed for the doghouse problem and ask them to put the steps in order. Have them work in small groups and write their answers. To check, you can have students call out their answers and discuss. You can also have them hand in their written answers. Read the answers and discuss as a class.

SYNTHESIZE

5 In pairs, identify the problem in the picture.
Have students describe what they can see in the picture (just description). Then get students into pairs and ask them to identify the problem. Check answers as a class and discuss if they have ever encountered that problem in their city or town.

6 Circle the solutions you would use to solve the problem in Activity 5.
Have students describe the pictures and read their labels. Read the instructions out loud and tell students to complete the activity individually. Check answers as a class. Ask volunteers to explain why they chose to circle those solutions.

Have students look at the picture around the text and say what they think the children are doing. Read the text about sharing solutions out loud. Discuss why it is important to share solutions with others. Ask students to circle the words indicating ways in which they can share their solutions.

DEMONSTRATE

MIND MAP

Have students go to page 111 in their Student Book and add information to the *designing solutions* section. Elicit what steps they have learned about in this lesson to turn problems into solutions. Write their ideas on the board while they do the same in their books.

Go to the Lesson 2 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do Activities 5 and 6 on page 9 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation

Have students brainstorm simple home or school problems. Write them on the board. Then have them choose one, draw it, and draw a solution following the model in Activities 5 and 6.

Stretch

Get students into small groups. Ask: *What could you do if you had a problem at school? Who could you share it with?* Have groups discuss, then ask volunteers to share their ideas.

5. **In pairs, identify the problem in the picture.** littering



6. **Circle the solutions you would use to solve the problem in Activity 5.**

1 

garbage bag

2 

recycle bin

3 

broom and dustpan

4 

shovel



Share Solutions

Word Box
share

Knowing how to **share** solutions is important. How can you share your solution with others? You can write, talk, draw, show pictures, and present the model you made.

Lesson 3

How can we solve a problem?

Identify a Problem

Birds sometimes have difficulty finding food in winter. Can you identify the problem? Can you help these birds?

1. Complete the sentences.

1 Birds eat seeds.

2 Birds eat with their beaks.

Think of a Solution

Can you design and make a bird feeder? What will your bird feeder need? How big are the birds near you? Think about how to protect the bird feeder from different weather conditions and other animals.



bird feeder

Make a Plan

Look around your neighborhood for ideas. Do any of your neighbors have bird feeders? You can also look online for more ideas. What will you need to make it?

2. In your notebook, draw your bird feeder design. Students' own answers.

How can we solve a problem?

Learning outcome: Students will have learned the different stages of solving a problem.
Materials: picture of a homemade bird feeder made with a plastic bottle and wooden spoons
Resources: Unit 1 poster; Unit 1 flashcards; *Bird feeders* projectable activity

CONNECT

Display the Unit 1 poster and read the title, "Steps to Solve a Problem". Take down the poster and tell students that they already know several steps to solve a problem. Elicit the steps from them and put the corresponding Unit 1 flashcards up as students name the steps. Start by putting up the flashcard for *problem*. Encourage them to say the steps in order. Display the Unit 1 poster again and go through the steps, especially the new ones.

INVESTIGATE

Bird feeders

Project the *Bird feeders* activity on the board. Have students carefully analyze the pictures. Ask them to say positive and negative characteristics of each bird feeder. You can prompt them with questions if students do not know how to analyze the pictures. Ask: *Do you think it is easy for the bird to eat/drink from this bird feeder? Does the bird have a pole to stand on while it eats/drinks? Does the feeder protect the bird from the rain?*

SYNTHESIZE

Read the text about identifying a problem out loud. Ask the question "Can you identify the problem?"again and have students answer it.

1 Complete the sentences.

Have students read the beginning of the sentences and give possible answers. Write them on the board and come to a consensus. Let students copy the answers from the board.

Read the text about solutions and plans out loud. Ask the questions in the text again and have students answer as a class. Help them if needed. Discuss their answers in depth as they will need the information to complete Activity 2.

2 In your notebook, draw your bird feeder design.

Have students describe the bird feeder in the picture. Ask them to name parts, materials, and different elements they can see. Then give them enough time to draw their own bird feeders in their notebooks. When they have finished, show them the picture of a bird feeder made out of a plastic bottle and wooden spoons. Have students discuss if they think it is a good bird feeder and why.

In order for students to be able to do Activity 3 on page 11 of their Student Book, hang their designs around the classroom and let students walk around to look at them. Leave them up until the next session.

For the next class... OPTIONAL

Have students do the activities on page 10 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation

Have students label the basic elements (water bowl, seeds/food, bird stand[s] or pole[s], hook) on their bird feeder design.

Stretch

Elicit why birds sometimes have difficulty finding food in the winter. Prompt students with questions so that they can come to their own conclusions.

Learning outcome: Students will have learned the final steps in the process of finding a solution to a problem.
Keyword: *test*
Materials: scissors
Resources: Unit 1 poster; Unit 1 song: *Problems need solutions*; Workbook (optional); Lesson 3 worksheet (one per student); Lesson 3 *Vocabulary activity*

CONNECT

Display the Unit 1 poster. Read all the steps one by one. Have students mention an example for each step. Explain steps 5–7, as they are new to them.

INVESTIGATE

Ask: *Why do you think it is important to redesign after a test, if needed?* Have students get into their doghouse design groups and find a way to test their materials without having to completely build the house (they can buy sample-size materials and put them under the rain to see if they are suitable). Prompt them with questions so that they can come to a conclusion on their own.

PROBLEMS NEED SOLUTIONS

Play the song once and ask comprehension questions. Play the song again and have students sing along.

SYNTHESIZE

Read the texts out loud and ask comprehension questions.

3 Read the questions. Write your classmates' names in your notebook.
Read the instructions and the questions. Let students go around the classroom once more to look at the designs. Let them write the names individually. You can walk around checking instead of having students share, as this might make some students self-conscious of the shortcomings of their designs.

Extra activity OPTIONAL

Have students do Activity 4 on page 11 of their Workbook. Use the activity to see if any concept needs further explanation.

Distribute the Lesson 3 worksheet. Ask students to look at the pictures and read the words. Then have them cut the cards and glue them in their notebook. Have them follow the steps to fix a problem in order. They should label each picture.

DEMONSTRATE

MIND MAP

Have students go to page 111 in their Student Book and add information to the *solving problems* section. Elicit what they have learned about how problems are solved and write their ideas on the board while they do the same in their books. When students have completed their mind map, have them review its contents to identify and correct any mistakes.

Go to the Lesson 3 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do Activity 3 on page 11 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation
In their notebooks, have students write and number the stages they need to follow to solve a problem. They can use their Student Book and the Unit 1 poster.

Stretch
Have students analyze their bird feeder designs and discuss improvements they would make.

Choose Your Tools and Materials

Word Box
test

Based on your design, what tools and materials do you need? Look around your home and school. Can you recycle any of the materials from these places?

Test Your Design

Construct your bird feeder. **Test** it outside for a few days to see if any birds come to feed there. Can your bird feeder withstand all weather conditions?

Redesign, if Needed

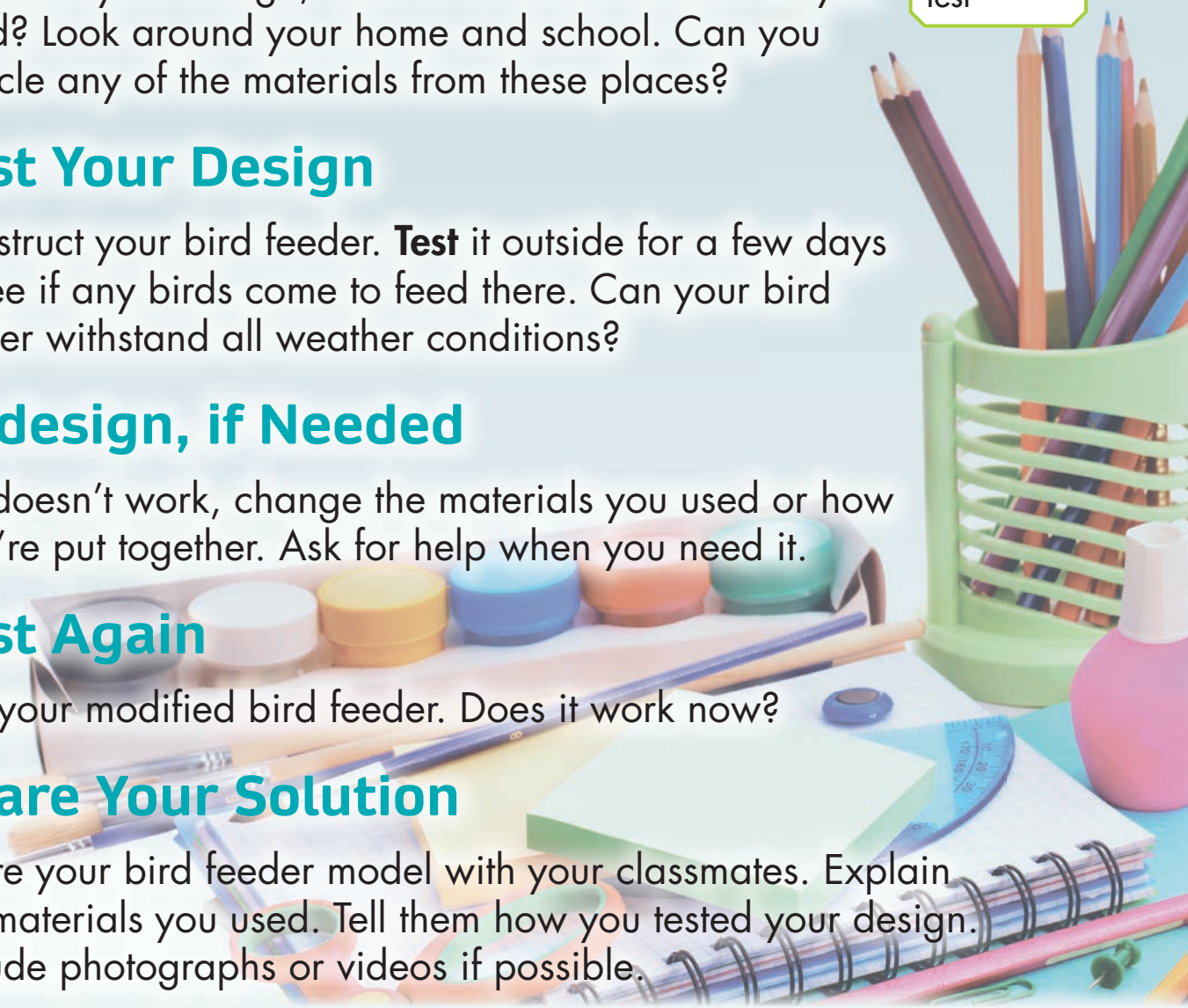
If it doesn't work, change the materials you used or how they're put together. Ask for help when you need it.

Test Again

Test your modified bird feeder. Does it work now?

Share Your Solution

Share your bird feeder model with your classmates. Explain the materials you used. Tell them how you tested your design. Include photographs or videos if possible.



3. **Read the questions. Write your classmates' names in your notebook.**
Students' own answers.

1 Who built a bird feeder that also keeps birds safe?

2 Who built a bird feeder that is resistant to weather conditions?

3 Who built a bird feeder that the most birds ate from?

4 Who do you think built the best bird feeder? Why?

How can we build the tallest tower?

STEAM

Objective:

To construct the tallest tower.

Materials:

- marshmallows
- toothpicks
- measuring tape or stick

Steps:

1. Design a plan in the box below.
2. Use toothpicks and marshmallows to create the tallest tower.
3. Measure your tower and write its height.
4. Compare your tower design and height with other teams.

Tower design:



Go Beyond...

What worked? Why?
What didn't work? Why?

How can we build the tallest tower?

Learning outcome: To construct the tallest tower.
Materials: marshmallows, toothpicks, measuring tape or stick
Resources: Makerspace worksheet

DEMONSTRATE

Use the Makerspace worksheet on the platform. Alternatively, photocopy the Unit 1 Makerspace worksheet on page T123.

GET IT READY

Elicit if students have ever built a tower and which materials they used (sand, building blocks, etc.). Then explain that they will have to make the tallest tower using only marshmallows and toothpicks. Tell them they will use the information they have learned in this unit to complete the project.

Read the information about the materials and the steps in the book and have some volunteers paraphrase each step to check comprehension.

Divide the class into small groups. Have each group gather the materials they will need.

GET IT GOING

Ask students to follow the steps carefully. Help if needed. Monitor students as they handle the toothpicks. Remind them that toothpicks are sharp and should be handled with care. Make sure that students do not drop toothpicks on the ground.

Walk around and ask the groups: *Do you think you could make it taller? How?*

Ask several volunteers to describe the process they followed using their own words. Emphasize that they explain their planning process. Have groups share their tower design with the class.

Once groups have finished, gather the class and have a guided discussion on the designs. Ask: *Did all of the groups follow the same design? What was similar? What was different?* Measure the towers and select a winner. Then ask: *What do you think helped [group name] to build the tallest tower?* Discuss.

GET IT DONE

Gather students in a circle to have a discussion to conclude the practice. Invite them to discuss their findings.

Allow some time for students to talk about their experience planning and constructing the tower. Invite students to discuss their experience. Ask: *Did you find it easy or difficult to follow the steps? How did you find the experience?* Ask them what they found interesting, challenging, and enjoyable.

Conclude by summing up the steps to solve problems.

GO BEYOND

In their groups, ask them to analyze what worked and didn't work and why. Help them if needed. Prompt them with additional questions if they find it hard to analyze the information. Have them share their answers with other groups. Allow for group discussion and suggestions.

Assessment

Objective: To review the steps to solve a problem.
Resources: Unit 1 flashcards; Unit 1 poster; Unit 1 Self-assessment; Unit 1 Test

EVALUATE

REVIEW

Display the Unit 1 flashcards. Shuffle and show them one by one. Have students call out the words. Then shuffle and show them one by one again. This time, cover the word and have students call out the words. Tell students to focus on the picture to know the action or stage/step.

1 Underline the correct words to complete the sentences.

Read the sentences out loud and have students underline the correct answers individually. Check answers as a class. Explain any concept that students might still be struggling with.

2 Complete the sentences with words from the box.

Have students read the words from the box out loud. Then ask them to complete the activity individually and check answers in pairs.

3 Put the steps in the correct order.

Have volunteers read the steps. Ask students to put the steps in order individually. Call on volunteers to share their answers. Students must justify their answers. Then display the Unit 1 poster and check answers as a class.

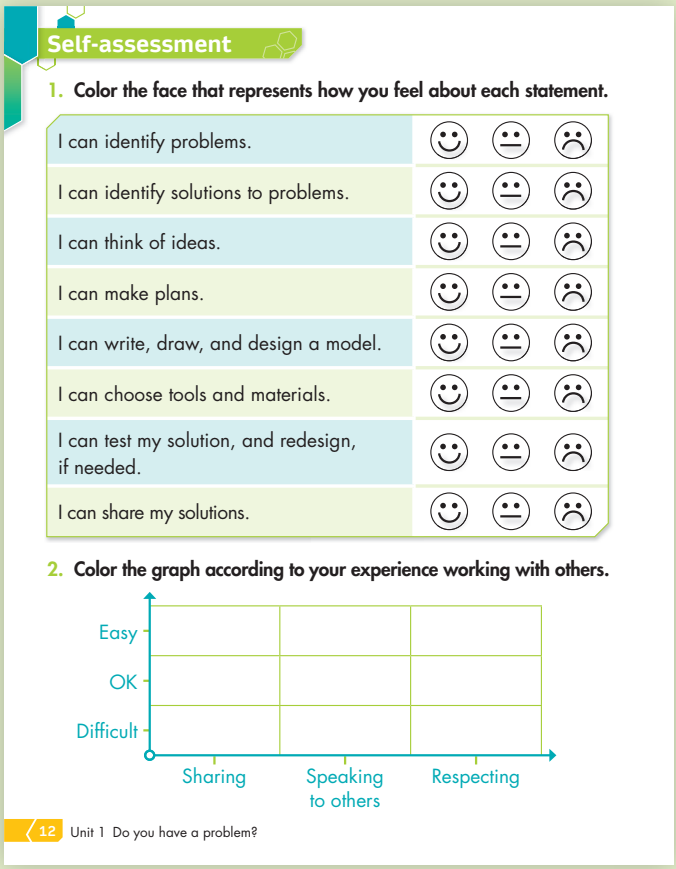
SELF-ASSESSMENT

Use the Unit 1 Self-assessment on the platform. Alternatively, have students turn to page 12 in the Workbook. Read the instructions and self-assessment table out loud and check comprehension. Have students work on their own. Monitor their work. When students finish completing the table, ask them to share what they liked the most about the unit and what they enjoyed learning. If any volunteers are comfortable with it, they can also share what confused them the most or where they feel they need more work.

The graph diagram focuses on the Communication skill. Explain what *sharing*, *speaking to others*, and *respecting* mean and elicit examples of good communication. Then ask them to reflect and decide if it was easy or difficult for them to communicate effectively. Have them color the graph according to their experience.

ASSESSMENT

Use the Unit 1 Test on the platform to evaluate students' performance and development. Alternatively, photocopy the Unit 1 Test from page T142.



Self-assessment

1. Color the face that represents how you feel about each statement.

I can identify problems.	
I can identify solutions to problems.	
I can think of ideas.	
I can make plans.	
I can write, draw, and design a model.	
I can choose tools and materials.	
I can test my solution, and redesign, if needed.	
I can share my solutions.	

2. Color the graph according to your experience working with others.

Easy
OK
Difficult
Sharing
Speaking to others
Respecting

12 Unit 1 Do you have a problem?

1. Underline the correct words to complete the sentences.

1 A way to fix something wrong is a **plan** / **solution** / **problem**.

2 Something that is not right is a **plan** / **solution** / **problem**.

3 The ideas or steps to make something right is a **plan** / **solution** / **problem**.

2. Complete the sentences with words from the box.

model	tool	material

1 A pair of scissors is a **tool**.

2 A piece of paper is a **material**.

3 A **model** is a physical creation that is smaller or simpler than the final one.

3. Put the steps in the correct order.

1 Identify the problem.

4 Share your solution.

2 Plan and design your solution.

3 Test your design.

What are living and non-living things?

LEARNING OBJECTIVES

- Identify living and non-living things.
- Investigate the characteristics of living things.
- Identify the basic needs of living things.
- Compare living and non-living things.
- Notice that non-living things don't grow or change.
- Notice that animals can be similar or different.
- Notice that plants can be similar or different.
- Observe and present information about a tree.

STEAM CONNECTION

- Students demonstrate curiosity about what living and non-living things are.
- Students notice the characteristics of living things and identify them.
- Students observe the characteristics of things to determine if they are living or non-living.
- Students discuss the characteristics of a tree and why it is a living thing.

Use the Unit 2 STEAM worksheet to work on the unit's topic connection with the subject of science.

DIGITAL RESOURCES

Phenomenal video: *Living and non-living things*

What am I?

Quest: *Mother and baby*

Projectable activities: *Animal homes* (Lesson 1), *Animal needs* (Lesson 2), *Sorting plants* (Lesson 3)

Printable: Lessons worksheets

Vocabulary activities

MAKERSPACE

Are trees alive?

This project can be done at the end of the unit in a single class. Students go outside and observe a tree closely to identify its characteristics. They notice that trees can be similar and different.

Students work in teams to do this project and discuss their findings as a class. Allow some discussion time at the end so that each team can report on their findings and they can all reflect on what trees need as living things.

Prepare kits of material per team in advance, but leave room for students to choose the materials they think they could use.

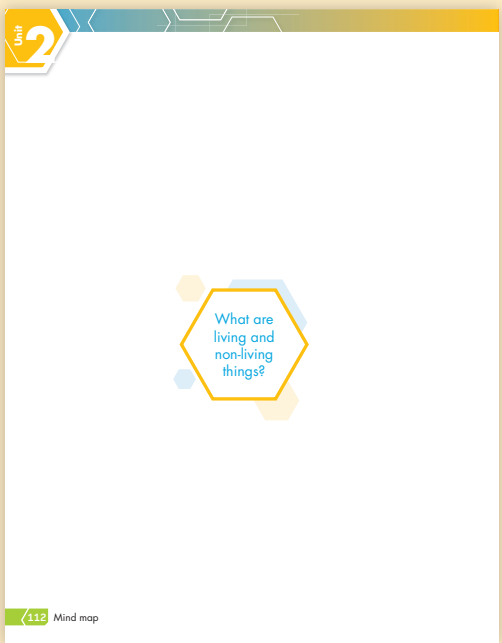
Print the Unit 2 Makerspace worksheet on the platform. Alternatively, photocopy the worksheet on page T124.

ASSESSMENT TOOLS

- Review: Student Book page 25

Self-assessment: Workbook page 20

Assessment: Unit 2 Test



FLASHCARDS

cactus, flower, leaf, petal, roots, stem, sun, trunk, water

Lessons 1 and 3.







POSTER

The Unit 2 poster shows a natural environment with different elements: air, sun, food, and water. It can be used to show the basic needs of living things.

Lessons 1 and 2.



What are living and non-living things?

Learning outcome: Students will have identified that there are living and non-living things.
Keywords: *living, non-living*
Materials: a realistic baby doll
Resources: Unit 2 Phenomenal video: *Living and non-living things*; Unit 2 video worksheet; Quest: *Mother and baby*

CONNECT

FLIPPED LEARNING

Before class

Students watch the video before class. Give them the Unit 2 video worksheet beforehand to complete it as they watch the video at home. Alternatively, you could watch the video in class.

In class

Ask students to take out their video worksheet and elicit the characteristics of living things. Write the title of the experiment on the board, *Colored flowers*, and then write *Materials* below the text. Have a volunteer read the hypothesis. Then elicit the materials used. Put students into small groups and have them report on their observations recorded in the table. Have a guided discussion about the results and the conclusion.

INVESTIGATE

Draw students' attention to the picture in their book and have volunteers describe it. Read the text about living and non-living things. Ask students to underline the characteristics of living things mentioned in the text.

1 Make a list of three living things and three non-living things in your notebook.

Ask students to work on their list individually. When they have finished, ask volunteers to choose one thing from their list and act it out for the rest of the class to guess.

2 In pairs, discuss whether you are a living or non-living thing. What needs do you have?

Explain what the word *needs* refers to. Put students into pairs and have them discuss the questions. Monitor and provide help with vocabulary if needed.

QUEST Mother and baby

Go to the *Quest* activity on the platform. Additionally, show students a realistic baby doll. Ask: *Has anyone ever played with a doll like this? What does it feel like? Is it warm? Does it move (by itself)? Will it ever change or grow?* Pass the doll around. While students hold the doll, ask: *Does anyone have a baby brother or sister at home? How is the baby like the doll?* Elicit similarities such as number of limbs, body parts, size, etc. Ask: *How is it different? What can the baby do that the doll cannot?* Ask students to decide whether the doll and baby are both living things. Discuss the reasons for their choices.

MIND MAP

Start a mind map on the board. Have students go to page 112 in their Student Book and read the title question of this unit at the center of the mind map. Add the concepts *living things* and *non-living things* on the map.

For the next class...

Ask students to bring magazine cutouts of five living things and five non-living things.

Unit 2

What are living and non-living things?

Living and Non-living Things

Living and **non-living** things are all around us. Everything we see or touch can be grouped into living things or non-living things. Living things can grow and move on their own. Non-living things cannot do these things. Living things need water, food, air, sunlight, and shelter. Non-living things do not have these needs.

Word Box
living
non-living

1. **Make a list of three living things and three non-living things in your notebook.** Suggested answers: animals, plants, people
2. **In pairs, discuss whether you are a living or non-living thing. What needs do you have?**

Possible answers: we are living things and we need water, food, air, sunlight, and shelter

Phenomenal Video: Living Things and Non-living Things

Lesson 1

What do living things need?

Living Things

We know that living things can **grow** and move on their own. Plants, animals, and people are all living things. Animals and people need **shelter**. A shelter can be a home, nest, tree, cave, water. Shelters keep living things safe and healthy.

Word Box

grow
shelter

1. Circle the things that can grow.











2. In your notebook, draw the shelter that keeps you safe.

What do living things need?

Learning outcome: Students will have identified the basic needs of living things.
Keywords: *grow*, *shelter*
Materials: 5 cutouts of living things and 5 cutouts of non-living things, sheets of paper, color pencils, glue
Resources: Unit 2 poster; Unit 2 song: *What am I?*

CONNECT

Display the Unit 2 poster and ask students to mention the living and non-living things in the picture.

WHAT AM I?

Tell students that they are going to sing a song about living and non-living things. Play the song once or twice for students to get familiar with and start singing it. Ask: *Which words did you recognize?* Write them on the board. Ask: *What does the song talk about?* Play the song again and have students sing along.

INVESTIGATE

Give students a sheet of paper folded in half. On the first half of the sheet instruct them to write *living things* as a heading. On the other half, have them write *non-living things* as a heading. Ask: *What makes something alive? How can you tell if this is alive?* Then ask them to brainstorm what kind of cutouts could go in each part.

SYNTHESIZE

Read the text about living things. Ask students to read the words in the word box. Elicit their meaning. Help them as needed.

1 Circle the things that can grow.
Have students identify the thing shown in each picture. Then point to each picture as you ask: *Can a (baby bird) grow?* Elicit answers from volunteers and tell students to circle the picture. Have students work on the rest of the task individually. Check answers as a class. Finally, ask: *Can you grow? How do you know that you are growing?* Accept all logical answers.

2 In your notebook, draw the shelter that keeps you safe.
Synthesize what the word *shelter* refers to. You can also direct students to the glossary page. Ask: *Why do living things need shelter? Do you need a shelter? What is your shelter?* After these questions, have students draw their homes with them inside it.

Classifying To further develop the Classifying skill, start the activity by having students identify the things in their cutouts that can grow. Ask: *Can they grow? Do they need a shelter?* If the answers are affirmative, ask them to classify those things in the *living things* column and glue them. Finally, have them glue the non-living things in place.

For the next class…

Ask students to draw three living things in the shelter they drew in their notebook for Activity 2.

DIFFERENTIATED INSTRUCTION

Remediation

Give as many examples as possible to help students identify types of shelters used by living things.

Stretch

Have students draw how a plant grows. They can draw three stages: seed, sprout, and flower. They don't have to learn or write the names of the stages.

Learning outcome: Students will have identified the basic needs of living things.
Keywords: *needs*, *breathe*
Resources: *Animal homes* projectable activity; Unit 2 flashcards: *water*, *sun*

INVESTIGATE

PHENOMENAL ACTIVITY

Animal homes

Project the *Animal homes* activity on the board. Draw students' attention to the types of shelters and elicit the name of the need they represent (shelter). Elicit the different types of shelters and the animals in the activity. Have volunteers come to the front and drag and drop the animals to their shelters.

SYNTHESIZE

3 Trace the needs of living things.

Read the poem out loud and ask students to identify the living things you mention. Explain that all living things breathe, eat, drink, grow, and need a place to live. Some of them can move on their own, but not all. Read again as they follow along in their books. Mention each need one by one (food, water, sunlight, air, shelter). Ask students to give examples of how living things obtain these needs (people eat vegetables, birds eat seeds and worms, animals get water from rain and rivers, we drink water regularly, etc.). Accept all logical answers. Provide help with vocabulary if needed. Then have students trace the needs of living things.

4 In pairs, name the living things at your home.

Write the word *shelter* on the board and have students say it. Ask them to say what types of shelters humans live in (houses, tents, etc.). Have them take out the drawings of their homes and share them in pairs. Ask students to point to the living things in their drawings and say what they are. Monitor and provide help if needed. Encourage students to share the names of their family members and pets in their drawings. Ask questions like: *What is his or her name? What is he or she doing?*

Extra activity

Have students compare if there are similar living things between their drawings. Ask them to make a list of the things that are similar in their notebooks. To end the class, display the *water* and *sun* flashcards and elicit the words. Ask them to review their list of living things and check if they all need water and sun.

For the next class... OPTIONAL

Have students do the activities on page 14 in their Workbook for homework. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation

On the board, create a three-column table with the headings: *people*, *animals*, *plants*. Help students list five examples per column. Give some examples before you elicit answers from them.

Stretch

Have students draw a person, an animal, and a plant, and draw one scene for each in which you can see their needs. Ask them to label the scenes with the needs. For example, elephants in the sun, one drinking from a river and another one eating from trees.

We Are Living Things

You and I are living things.
Plants and trees are too.
Dogs and cats are living things.
Fish and birds are too.
Living things have special **needs**.
We need air to **breathe**.
We need water to drink.
We need food to eat.
We need a place to live.
We are living things.

Word Box
needs
breathe



3. Trace the needs of living things.

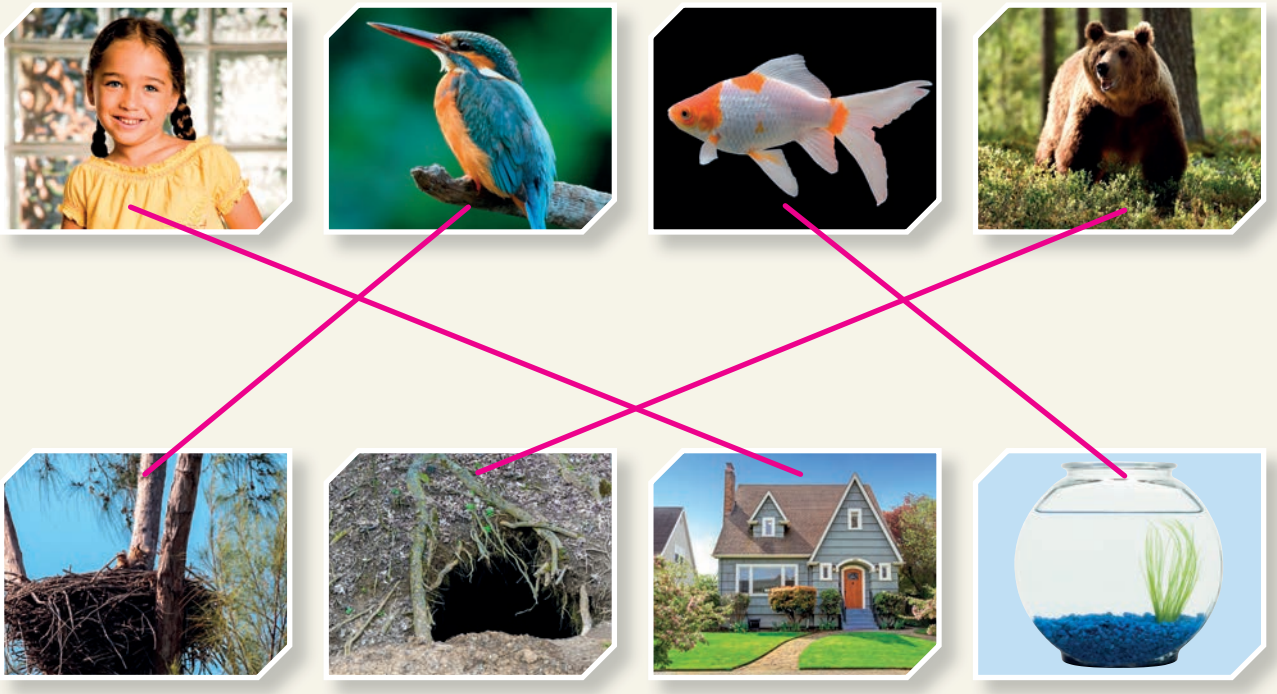
food, water, sunlight, air, shelter

4. In pairs, name the living things in your home.

Possible answers: plants, insects, pets, family members



5. Match the living things to their shelters.



6. What can living and non-living things do? Color the correct boxes.



eat	☐	☐	☐	☐
drink water	☐	☐	☐	☐
grow	☐	☐	☐	☐
move on its own	☐	☐	☐	☐
need shelter	☐	☐	☐	☐

Learning outcome: Students will have compared living and non-living things.
Resources: Lesson 1 worksheet; Lesson 1 *Vocabulary activity*

INVESTIGATE

Tell students that you will name a place and they will have to act out the living things in that place. Say: *garden*. Students should act out butterflies, bees, ants, dogs, flowers, squirrels, plants, etc. Then ask them to give examples of non-living things in a garden (rocks, a hose, water can, etc.). Repeat with other places (school, park, etc.).

SYNTHESIZE

5 Match the living things to their shelters.
Name the living things in the pictures and have students name their shelter. Have them raise their hands to participate. Say *child*, *bird*, *fish*, and *bear* (students will say house, nest, water, and cave). Ask students to match the animals to their shelters in the activity. Check answers as a class.

Extra activity

Draw a nest, a cave, and a barn on the board. Say the names of the shelters and have students name as many animals as they can for each type of shelter.

6 What can living and non-living things do? Color the correct boxes.
To elicit the actions that living things can do, ask: *What things can you do?* Accept all logical answers. Provide help with vocabulary if needed. Write some of their ideas on the board. Then ask: *Can a pencil walk? Can a pencil grow?* Remind students that all living things breathe, eat, grow, and move, and non-living things do not. Living things have basic needs such as food, water, air, and shelter. Have students do the activity individually. Monitor and provide help if needed. Check answers as a class.

THAT'S PHENOMENAL!

Young sunflowers move their blooms to always face the sun over the course of a day. A young flower faces east at dawn and greets the sun, then slowly turns west as the sun moves across the sky. During the night, it slowly turns back east to begin the cycle again. It all happens in a 24-hour cycle. Once sunflowers reach maturity, they stop tracking the sun and only face east.

DEMONSTRATE

Elicit the basic needs humans have. Then put students into pairs and distribute one Lesson 1 worksheet per pair. Explain that they need to write one basic need in each mini organizer and write what happens when they are met and when they are not. Monitor and provide help with vocabulary. Have pairs compare their ideas with the class.

MIND MAP

Have students go to page 112 in their Student Book and add information to the *living things* section. Elicit what they have learned about living things in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 1 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class...

OPTIONAL

Have students do the activities on page 15 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation

To activate vocabulary, ask students to create a list of as many animals and plants as they can remember. Help them as needed.

Stretch

Have students recreate the explanation in the *That's Phenomenal!* activity as a drawing.

What are non-living things?

Learning outcome: Students will have identified the characteristics of non-living things.
Materials: a battery-powered toy car or a picture of it, batteries (if needed)
Resources: Unit 2 poster; *Animal needs* projectable activity; Unit 2 song: *What am I?*

CONNECT

Describe a river and a waterfall in the middle of a jungle by naming the living and non-living things that can be found there and have students guess what place it is. Display the Unit 2 poster and ask questions about the living and non-living things shown there. You may also want to focus on the elements of water, sun, food, and air to talk about basic needs. Aditionally, ask students to guess what other animals might live in the river and around it in the land and on the trees (e.g. birds).

Animal needs

Project the *Animal Needs* activity on the board. Read and go through the slides while eliciting the basic needs shown. Ask: *What would happen if animals did not have these things?* Accept all logical answers.

WHAT AM I?

Play the song. Ask comprehension questions, such as: *What do animals need? Where do they live? What non-living things does the song mention?* Play the song again and have students sing along. Go to page T165 to see the activity suggested.

SYNTHESIZE

Read the text about non-living things out loud and ask questions to check comprehension, such as: *Do non-living things eat? Do non-living things grow? Can non-living things move on their own?* Then have students circle the examples of non-living things listed in the text. Monitor and provide help as needed.

1 Look around the room. In pairs, point to three non-living things.

Ask students to get into pairs. Ask them to look around and identify three non-living things in the room without naming the objects. Explain that they have to point at the object and their classmate will have to guess the name of the object. Have them take turns to complete the task.

2 Can the non-living things you pointed at move? How can you make them move?

Show students the battery-powered toy car you brought to class and ask: *What is this?* (a toy car) Ask: *Can this toy car move on its own?* (No) *How can you make it move from one place to another?* Allow volunteers to show different ways in which they can move the car. You can show them that the car is battery powered (turn it on and make it move).

Comparing For developing the Comparing skill, start the activity by having students recall the needs of living things: air, food, water, and shelter. Ask: *Do living things move?* Then have them reread the text and mention characteristics of non-living things: they do not eat, drink water, grow, breathe, move on their own, or need shelter. Create a table on the board and record their answers. Ask them to copy the table in their notebook for future reference.

For the next class...

Ask students to draw five non-living things in the shelter they drew in their notebook in Lesson 1.

DIFFERENTIATED INSTRUCTION

Remediation

Give as many examples of non-living things as possible from different environments: home, park, street, supermarket, beach, etc.

Stretch

Have students create a list of non-living things they saw during the past weekend. Ask them to share and compare in pairs.

Lesson 2

What are non-living things?

Non-living Things

Non-living things are all around us. Non-living things do not eat or drink water. They do not grow or breathe. Non-living things cannot move on their own. Examples of non-living things are pencils, chairs, desks, toys, and rocks.

1. **Look around the room. In pairs, point to three non-living things.**
   Possible answers: paper, school materials, furniture
2. **Can the non-living things you pointed at move?**
   How can you make them move?
   Possible answers: the non-living things cannot move on their own.
   We can make them move by applying force to them.



3. **Circle True or False.**

1 Non-living things can drink milk. **True** **False**

2 Non-living things can grow. **True** **False**

3 A soccer ball is a non-living thing. **True** **False**

4. **Trace the words below. Match them to the types of things.**

1 bed 2 ant 3 backpack 4 hamster

living non-living

5. **In pairs, point to three non-living things in the picture. Take turns.**



Learning outcome: Students will have identified living and non-living things.
Resources: Unit 2 poster

INVESTIGATE

Give students two minutes to make a list of non-living things in the classroom. When they have finished, have students share the items on their lists. Write all the ideas on the board. They can then complete their lists by copying the missing items.

SYNTHESIZE

3 Circle True or False.

Read the statements out loud. Students should decide if they are true or false and circle the answers accordingly. Have students correct the statements that are false and elicit examples of living things that drink milk and can grow. Provide help with vocabulary as needed.

4 Trace the words below. Match them to the types of things.

Have volunteers read the words and ask students to trace them. Then point to the words *living* and *non-living* and have students match the words on the first line to the correct category. Check answers as a class.

5 In pairs, point to three non-living things in the picture. Take turns.

To develop the Communication skill of taking turns, get students into pairs. Ask them to describe the picture and to take turns pointing to the non-living things. Remind them to respect each classmate's turn. Monitor and provide help if needed. Check answers as a class.

Extra activity

Have students recall a trip they have taken. It could be one they took to the beach, the mountains, a big city, a small town, etc. Ask them to first describe the place and what they saw to a classmate. Encourage them to include both living and non-living things in their descriptions. Then ask them to draw it. They should circle the living things and put a square around the non-living things. Ask them to exchange drawings and correct each other's markings. Monitor and provide help if needed.

For the next class... OPTIONAL

Have students do the activities on page 16 in their Workbook. Refer to the Workbook Answer Key on page T110.
Ask students to bring three photos of themselves at different ages: when they were babies, when they were 2–3 years old, and when they were 5–6 years old.

DIFFERENTIATED INSTRUCTION

Remediation

Have students name the non-living things in the picture to review vocabulary.

Stretch

Have students reproduce the poster image in their notebook and draw 10 living and 10 non-living things in the scene. Ask them to share their drawings with a classmate.

Learning outcome: Students will have noticed that non-living things don't grow or change.
Keywords: *bigger*, *change*
Materials: students' photos
Resources: Lesson 2 worksheet; Lesson 2 *Vocabulary activity*

CONNECT

PHENOMENAL ACTIVITY

Distribute the Lesson 2 worksheet and have students cut the cards out. Ask: *Are plants living or non-living things? Do plants grow?* Ask them to work individually to put them in order to show how the plant grows. Have them compare with a classmate. Monitor and provide help if needed. Tell them to keep the sheet, as they will need it in Unit 3.

INVESTIGATE

Have students take out the photo that shows them when they were babies. Then ask them to find the photo that shows when they were 2–3 years old and put it next to the previous one. Next, instruct them to do the same with the last photo. Ask: *Do you look the same in all three photos? What is different?* Elicit ideas such as growth, change, bigger, taller, walk, talk, appearance, etc. Explain that living things grow and change with time, just like they did.

SYNTHESIZE

6 Circle the things that can grow and change.

Read the text out loud and ask some comprehension questions. Then direct students to the activity and have them name the three things shown. Students should circle the ones that can grow and change. Check answers as a class.

7 In pairs, discuss what you can do to change how these things look.

To develop the Creativity soft skill, explain that non-living things can also change, but not on their own. We make them change. Give each student a piece of paper and ask them to change it. When they finish, ask them to share how they changed the paper (crumbling, cutting, coloring, folding, etc.). Accept all logical answers. Provide help with vocabulary as needed.

Draw students' attention to the pictures in their book and ask them to say if they are all living or non-living things. Get students into pairs and ask them to share ideas on how they can change those things.

DEMONSTRATE

MIND MAP

Have students go to page 112 in their Student Book and add information to the *non-living things* section. Elicit what they have learned about non-living things in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 2 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 17 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation

Have students draw three pictures of living things showing adults and babies (humans, animals, and plants). For plants, they should draw the seed, following the ideas in the text.

Stretch

Ask students to describe each change in the plant growth stages from the printable cards.



They Don't Grow

People grow from babies into adults. Plants grow from seeds. When living things grow, they get **bigger** and **change** how they look.

Non-living things cannot grow or get bigger. They can only change how they look if something else changes their appearance.

Word Box
bigger
change

6. Circle the things that can grow and change.





7. In pairs, discuss what you can do to change how these things look. Possible answers: eat or slice the sandwich, mold the play dough, move the chess pieces, fold the paper






Lesson 3

How are living things alike?

Animals Are Alike

Word Box
alike
same
size
parts

Most living things are **alike**. They may have the **same** color, **size**, or movement. They may also have similar **parts**. For example, dogs and bears have fur. Mole rats have skin. Fish have scales, and birds have feathers to protect their bodies.



1. Circle the living things that have tails.



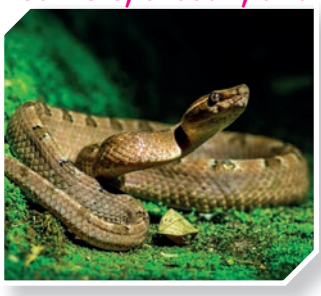




2. In pairs, discuss which of these living things have similar features.
Possible answer: The eagle and the parrot both have wings, feathers, a beak, and claws.







3. Draw two animals in your notebook. Have a classmate describe how they are alike and different. Answers may vary.

How are living things alike?

Learning outcome: Students will have noticed that animals can be similar or different.
Keywords: *alike*, *same*, *size*, *parts*
Materials: pictures of animals that have similar characteristics (e.g. fur, feathers, scales, size, tails), pictures of living things that have different characteristics
Resources: Unit 2 song: *What am I?*

CONNECT

WHAT AM I?

Play the song and let students sing along. Ask: *How are animals different? How are flowers alike and different from animals?* Have students draw one of the animals mentioned in the song and show it to a classmate for him or her to guess.

SYNTHESIZE

Read the text out loud and ask questions to check comprehension, such as: *How can animals be different? How can they be similar? Is a cat similar to a bird? Is it similar to a dog? Do cats and dogs have something in common?*
Use the pictures of animals you prepared for the class to show the characteristics mentioned in the text (e.g. fur, feathers, scales, size, tails), and elicit more examples of animals with those characteristics.

THAT'S PHENOMENAL!

Tails have many uses. Generally, the tail helps animals keep their balance, but animals also use it for other things. Monkeys use their tails to grab things. Horses move their tails to keep flies and insects away. In very cold weather, some animals wrap their long, furry tails around their body to keep warm. Dogs use their tails to communicate; they wag them to show affection and hold them straight when they are angry.

1 Circle the living things that have tails.
Ask students to look at the pictures. Elicit the animals' names and ask if students have seen these animals in real life. Students might answer correctly that the dog and lion both have tails. Correct any misconception that dolphins do not have tails. You may want to show a picture of a dolphin and point out the tail.

2 In pairs, discuss which of these living things have similar features.
Ask students to look at the pictures. Elicit the animals' names and ask simple questions like: *Can the snake fly? Does the eagle have a beak?* Monitor as pairs discuss and provide help if needed.

3 Draw two animals in your notebook. Have a classmate describe how they are alike and different.
Ask students to draw two animals in their notebook and show them to a classmate for him or her to guess how they are alike and different. Monitor and provide help if needed.

For the next class... OPTIONAL

Have students do the activities on page 18 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation
Review animal body parts to help students be able to mention differences and similarities.

Stretch
Have students mention the things that are alike and different in animals from memory. They can work in pairs.

Learning outcome: Students will have noticed that plants can be similar or different.
Keywords: *roots*, *stems*, *leaves*, *flowers*, *petals*, *fruits*
Materials: a picture of a leaf from a *Coccoloba gigantifolia* next to a grown man
Resources: Unit 2 flashcards: *flower*, *leaf*, *petal*, *roots*, *stem*, *trunk*, *cactus*; Lesson 3 worksheet; *Sorting plants* projectable activity; Lesson 3 *Vocabulary activity*

CONNECT

PHENOMENAL ACTIVITY

Distribute the Lesson 3 worksheet. Put students into pairs. Have students cut out the cards and classify them on their desks. Then project the *Sorting plants* activity and have volunteers come to the front and drag and drop the pictures into the correct categories.
Do the interactive activity as a class. Let students give their answers out loud. When there is disagreement, ask students to explain their answers.

INVESTIGATE

In preparation for the text, display the *leaf*, *petal*, *roots*, *stem*, *flower*, and *trunk* flashcards and say the words. Have students repeat after you. To consolidate vocabulary, ask students about being outdoors at the park or in nature. Ask: *Do you see trees? Do they have leaves? What color are they? Can you see their roots? Do you see flowers at the park? Can you see their stems? What color are their petals?*

SYNTHESIZE

Read the text about how plants are alike out loud and ask questions to check comprehension.

4 Label the parts of the plant.

Ask students to look at the picture and elicit what it is (a plant). Read the words in the box out loud and have students take a look at the words on the flashcards. Ask students to label the picture individually. Then ask them to compare answers in pairs.

THAT'S PHENOMENAL!

In the tropical forests of Brazil, there is a kind of tree that has leaves taller than an adult human being. It's called *Coccoloba gigantifolia*, and it has leaves that can reach 2.5 meters (8 feet) in length.

DEMONSTRATE

MIND MAP

Have students go to page 112 in their Student Book and add information to the *living things* section. Elicit what they have learned about the similarities and differences between living things in this lesson, and write their ideas on the board while they do the same in their books. When students have completed their mind map, have them review its contents to identify and correct any mistakes.

Go to the Lesson 3 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 19 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation
Review the parts of a plant using the flashcards. Play a game. Show a flashcard and say a plant part. Students stand up if it is correct and remain seated if it is not.

Stretch
Have students name all the different plants, flowers, and trees they know. You can help them by telling them names they might not know (for example, of trees or flowers native to your region).

Plants Are Alike

Plants can also have similar shapes, sizes, and colors. Plants have similar parts such as **roots**, **stems**, **leaves**, and **flowers**. Flowers have **petals**. Thick stems, like those on trees, are called trunks. Some trees also have **fruits**.

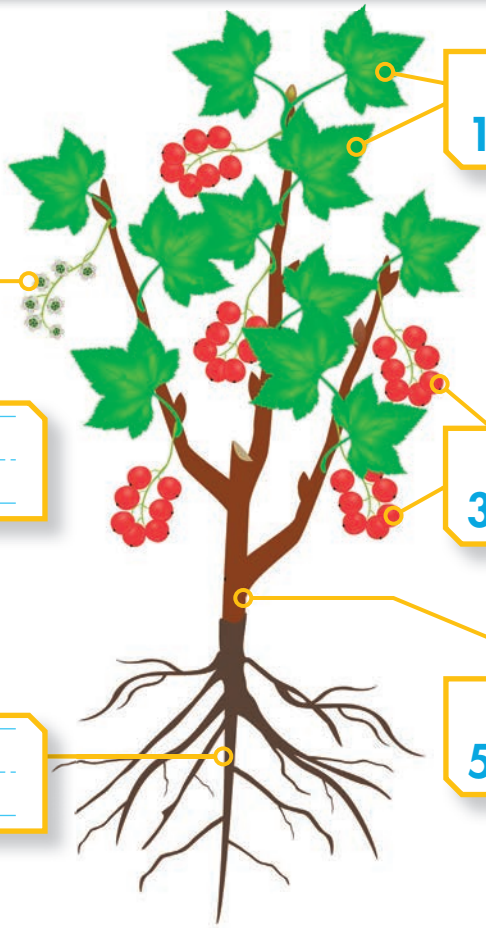
Word Box

roots
stems
leaves
flowers
petals
fruits



4. Label the parts of the plant.

flowers leaves stem roots fruits



1 leaves

2 flowers

3 fruits

4 roots

5 stem

Makerspace Project

Are trees alive?

Objective:

To observe trees and determine if they are living or non-living things.

Materials:

magnifying glass



Steps:

1. Go to the school yard and choose a tree.
2. Observe the tree and answer the following questions in your notebook.
   - Does it have leaves?
   - Does it have flowers?
   - Does it have fruits?
   - Can you see its roots?
   - Can it move?
   - Is it a shelter for other living things?
3. Draw the tree in your notebook. Include the things the tree needs.
4. Based on your observation, is the tree alive? Write your response next to your drawing in your notebook.



Go Beyond...

Look at the ground and the air around the tree. How important is that tree?

Are trees alive?

Learning outcome: To observe trees and determine if they are living or non-living things.
Materials: pictures of three different types of trees (with fruits, with flowers, and with neither), magnifying glass (1 per team), paper (or notebook), pencil
Resources: Makerspace worksheet

DEMONSTRATE

Use the Makerspace worksheet on the platform. Alternatively, photocopy the Unit 2 Makerspace worksheet on page T124.

GET IT READY

Display the pictures of the trees and elicit the similarities and differences in their appearance. Ask students to say if the trees are living things and why. Explain to students that they will be observing trees in the school yard and making notes on the things they observe.
Read the information about the materials and the steps in the book and have some volunteers paraphrase each step.
Divide the class into small teams. Have each team gather the materials they will need. Give them the opportunity to choose the materials that they think might be helpful.

GET IT GOING

Take the class outside and have each team choose a tree if there are several trees at school. If there aren't many, they can take turns to observe the tree(s) available.
Allow students enough time to do the activity and answer the questions in their books. Monitor their work, provide help if needed, and ask questions about their findings.

GET IT DONE

Gather students in a circle to have a discussion to conclude the observation practice. Invite them to discuss their findings. Conclude by summing up the basic needs that trees have (sun, soil, water), and how students can take good care of trees. This is a good opportunity to lead their discussion towards raising ecological awareness. You could also connect this topic to Unit 3.
Allow some time to talk about their experience doing the project. Ask them what they found interesting, challenging, and enjoyable. To finish the *Makerspace Project*, ask students to draw the tree in their notebook. Ask them to label the tree's parts and to include the things the tree needs to survive.

GO BEYOND

Have students look at the ground and the air around the tree. Ask them to describe what they notice. Elicit how important they think the tree is for this habitat.

Learning outcome: To review what living and non-living things are, their characteristics, and their basic needs.
Resources: Unit 2 Self-assessment, Unit 2 Test

EVALUATE

1 What can living things do? Trace.

Elicit the characteristics of living and non-living things and write them on the board. Elicit what kind of shelter, food, and water they have. Then draw students' attention to the activity in their book. Have a volunteer read the words and then ask students to trace over the words. Finally, ask them to give examples of living things from different categories. Say a category and elicit examples, e.g. animals at school, at home, at the park, etc.

2 Circle the non-living things.

Tell students that you will say some words and they have to stand up if what you say is a living thing. If not, they have to remain seated. Say: *desk, bird, flower, girl.* Then have students circle the non-living things in the activity. Check answers as a class.

3 Check (✓) the characteristics of these living things. Which are similar?

Read the living things listed and the characteristics. Start a class discussion. Ask: *Can cats grow? Does a cat have tail? Are cats green?* Ask these questions to assess students' understanding of the characteristics of living things. Then have them complete the task. Check answers as a class.

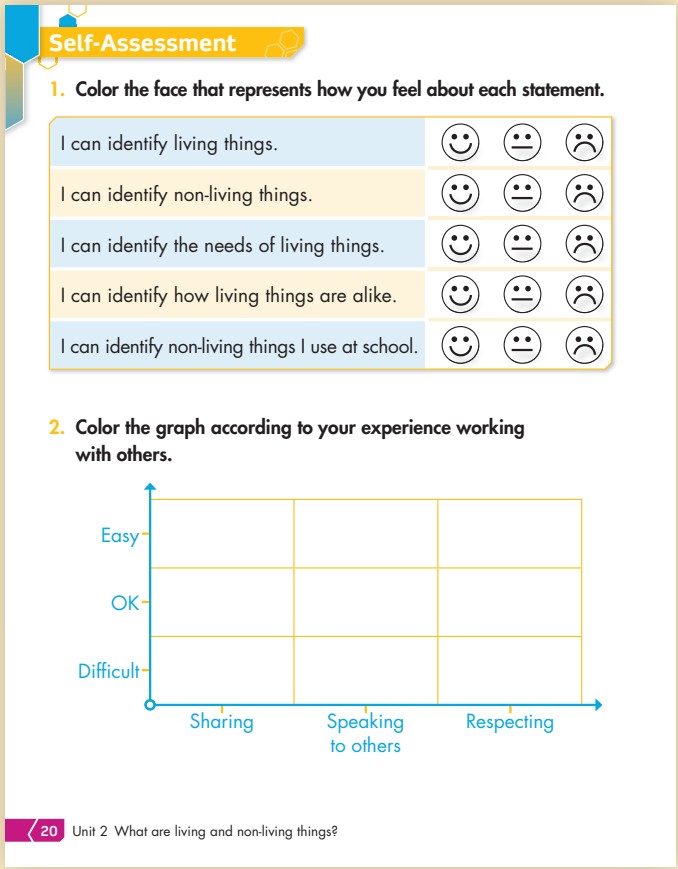
SELF-ASSESSMENT

Use the Unit 2 Self-assessment on the platform. Alternatively, have students turn to page 20 in the Workbook. Read the instructions and the self-assessment table out loud and check comprehension. Have students work on their own. Monitor their work. When students have completed their assessment, ask them to share which can-do they found easiest and which they found the hardest.

To further develop the Communication skill, explain what *sharing, speaking to others,* and *respecting* means and elicit examples of good communication. Then ask them to reflect and decide if it was easy or difficult for them to communicate effectively. Have them color the graph according to their experience.

ASSESSMENT

Use the Unit 2 Test on the platform to evaluate students' performance and development. Alternatively, photocopy the Unit 2 Test from page T143.



Self-Assessment

1. Color the face that represents how you feel about each statement.

I can identify living things.	☺	😐	☹
I can identify non-living things.	☺	😐	☹
I can identify the needs of living things.	☺	😐	☹
I can identify how living things are alike.	☺	😐	☹
I can identify non-living things I use at school.	☺	😐	☹

2. Color the graph according to your experience working with others.

20 Unit 2 What are living and non-living things?

1. What can living things do? Trace.

Living things can grow, change, and move.

2. Circle the non-living things.






3. Check (✓) the characteristics of these living things. Which are similar? The tree and the plant are similar as are the cat and the tiger.

		can grow	has tail	is green
1	cat	✓	✓	
2	tree	✓		✓
3	tiger	✓	✓	
4	plant	✓		✓

What are plants?

LEARNING OBJECTIVES

- Identify different types of plants and trees.
- Notice different climates.
- Recognize deciduous and evergreen trees.
- Learn the parts of a plant.
- Notice where fruits and vegetables come from.
- Recognize flowers and their purpose.
- Explore the growth stages of a plant.
- Learn about germination.
- Observe and describe what plants need in order to grow.

STEAM CONNECTION

- Students demonstrate curiosity about different plant classifications.
- Students observe the parts of a plant.
- Students observe the stages in a plant's growth.
- Students discuss what plants need in order to grow.

Use the Unit 3 STEAM worksheet to work on the unit's topic connection with the subject of science.

DIGITAL RESOURCES

Phenomenal video: *How do plants lose water?*

Plants everywhere
Quest: *Identifying plants where you live*
Projectable activities: *Describing plants* (Lesson 1), *Identifying plant parts* (Lesson 2), *Seeds you can eat* (Lesson 3)
Videos: *Summer and winter* (Lesson 1), *Plant parts* (Lessons 2 and 3), *Seed growth* (Lesson 3)
Printable: Lessons worksheets
Vocabulary activities

MAKERSPACE

What do plants need to grow?

Students plant seeds and place them under different conditions (light or darkness) to observe what plants need in order to grow.
This project should be done at the beginning of the unit so the results are seen by the end of the unit.
Prepare kits of material per team in advance, but leave room for students to choose the materials they think they could use.

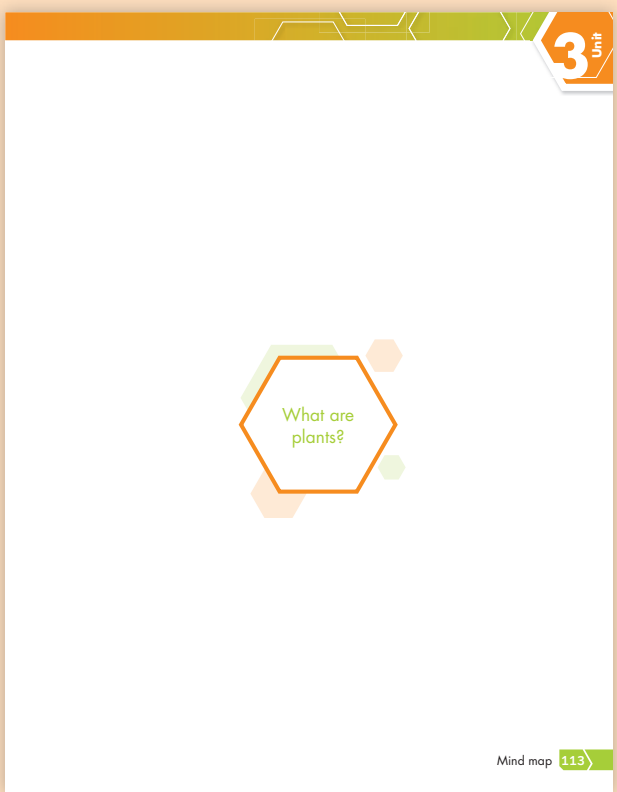
Print the Unit 3 Makerspace worksheet on the platform. Alternatively, photocopy the worksheet on page T125.

ASSESSMENT TOOLS

- Review: Student Book page 37

Self-assessment: Workbook page 28

Assessment: Unit 3 Test



FLASHCARDS

bark, bud, deciduous, evergreen, herbs, seeds, seedling, shoot, soil

Lessons 1, 2, and 3.







POSTER

The Unit 3 poster shows a tree and its parts: flowers, branches, bark, and roots. It also shows herbs. It can be used to show how plants are classified and what the different parts of a plant are.

Lesson 1.



What are plants?

Learning outcome: Students will have identified that there are different types of plants and that they live everywhere.
Keywords: *cacti, bushes, grass, climates*
Resources: Unit 3 Phenomenal video: *Plants and leaves*; Unit 3 video worksheet; Quest: *Identifying plants where you live*

CONNECT

FLIPPED LEARNING

Before class
Students watch the video before class. Give them the Unit 3 video worksheet beforehand to complete it as they watch the video at home. Alternatively, you could watch the video in class.

In class
Ask students to take out their video worksheet and elicit the different plant parts in their drawings. Write the title of the experiment on the board, *Water loss*, and then write *Materials* below the text. Have a volunteer read the hypothesis. Then elicit the descriptions for all three days. Put students into small groups and have them share their illustrations. Have a guided discussion about the observations and the conclusion.

QUEST Identifying plants where you live

Go to the *Quest* activity on the platform. Project the video on the second slide. Ask students: *Are there plants around the area in which you live? What kinds of plants are there (trees, grass, flowers, etc.)?* Have them describe the plants. Ask them to name the plant parts if they know them.

SYNTHESIZE

Draw students' attention to the picture in their book, and have volunteers describe it. Read the text on the page. Ask students to underline the different plants and their habitats.

1 Circle the sentences that are true.
Have students complete the activity individually and compare answers in pairs. Then ask volunteers to share their answers and explain why they are true.

2 Look at the picture. In pairs, discuss how the plants are similar and different. Which ones do you have at home?
Have students work in pairs to talk about how the plants in the picture are similar and different. Monitor and provide vocabulary if needed. Then ask them to say which plants they have at home, and if they take care of them and how.

MIND MAP

Start a mind map on the board. Have students go to page 113 in their Student Book and read the title question of this unit at the center of the mind map. Add the concepts *classifying plants, plant parts,* and *plant growth* around the map.

For the next class…

Ask students to bring in a picture of a plant they have at home or one they can see from a window. If possible, they should also research the name of the plant. They can ask an adult for help.

What are plants?

Plants Are Everywhere

Flowers, trees, **cacti**, **bushes**, and even **grass** are all plants. Plants grow in different **climates** and habitats. You can find them in forests, deserts, oceans, and even in your home! Most plants have similar parts, but they reproduce in different ways. Plants are important to humans and animals for food.

Word Box

cacti
bushes
grass
climates

1. Circle the sentences that are true.

1 There are many types of plants.

2 Plants can only grow where there is rain and sunlight.

3 Plants have similar parts.

2. Look at the picture. In pairs, discuss how the plants are similar and different. Which ones do you have at home?

Students' own answers.

Lesson 1

How are plants classified?

Classification of Plants

Plants are classified by where they grow: on land (terrestrial) or in water (**aquatic**). Plants can be classified as **flowering** and **non-flowering**. We can also classify plants by how they look. An **herb** is usually a small and short plant. A bush is bigger than an herb. It's almost as big as you! A **tree** is the largest type of plant. Examples are pine, oak, walnut, and apple trees.

Word Box

aquatic
flowering
non-flowering
herb
tree

1. Circle the correct type of plant.

1		bush	herb	tree
2		bush	herb	tree
3		bush	herb	tree

2. Think about your home and the places you visit. In pairs, discuss the trees and plants you've seen there.

Students' own answers.



Seaweed is an aquatic plant.

How are plants classified?

Learning outcome: Students will have identified different ways in which plants can be classified.
Keywords: *aquatic, flowering, non-flowering, herb, bush, tree*
Materials: picture of a plant
Resources: Unit 3 poster; *Describing plants* projectable activity

CONNECT

Display the Unit 3 poster and ask students to say the types of plants they can see (flowers, trees, herbs). Then read out the parts of a tree and have students identify them in the main tree. Ask students to say how the main tree is alike and different from the other plants in the picture.

INVESTIGATE

Ask students to take out the picture of a plant they brought from home and say where the plant is (at home, on the street, at the park, etc.). Then tell them to describe the plant and give its name if they know it. Have them say how their plant is alike and different from those on the poster.

SYNTHESIZE

Read the text about how plants are classified. Tell students to read the words in the word box. Elicit their meaning. Provide help as needed. Then direct their attention to the picture at the bottom of the page. Read the caption and ask: *Did you know seaweed is a plant? Did you know there are plants that live underwater?*

1 Circle the correct type of plant.
Have a student read the instruction line. Point to each picture and elicit the type of plant. Ask: *How do you know this is an herb, a bush, or a tree?* Elicit characteristics of each from students. Then tell students to circle the right word.

2 Think about your home and the places you visit. In pairs, discuss the trees and plants you've seen there.
Have students work in pairs to first name all the places they have been to that they can remember. Ask them to share the kinds of plants they have seen in those places. After the discussion, ask: *Has anyone seen aquatic plants?* Ask those who answer *yes* to say where and to describe the plants.

Describing plants
Project the *Describing plants* activity on the board. Elicit what plants need to grow (sunlight, air, and water). Read the text and give examples of the types of plants mentioned. Then point at each picture and read the caption below each. Have students work in pairs to make their list.

For the next class... OPTIONAL

Have students do the activities on page 22 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation
Have students draw a tree and label the tree parts based on what they see on the poster.

Stretch
Ask students to brainstorm different habitats and environments where plants can grow (water, desert, arctic, mountain, valley, city, etc.).

Learning outcome: Students will have learned that there are deciduous and evergreen trees.
Key words: *season, summer, fall, winter*
Resources: *Summer and winter* projectable activity; Unit 3 flashcards: *deciduous, evergreen*; Unit 3 song: *Plants everywhere*

CONNECT

PHENOMENAL ACTIVITY



Summer and winter

Write the words *deciduous* and *evergreen* on the board. Project the video *Summer and winter* once. Ask: *What are the characteristics of a deciduous tree? What are the characteristics of an evergreen tree?* Play the video again if necessary. Show the flashcards for *deciduous* and *evergreen*. Have students repeat the words after you. Leave the flashcards up and ask students to describe each type of tree and its characteristics from what they learned in the video.

INVESTIGATE



PLANTS EVERYWHERE

Explain to students that they are going to listen to a song about plants. Play the song once or twice so that students get familiar with it. Ask: *What words did you recognize? What does the song talk about? What kinds of habitats do plants grow in? What happens to deciduous trees? And with evergreen trees?* Provide help as needed. Go to page T166 to see the activity suggested.

SYNTHESIZE

Ask students to look at all the pictures on the page and mention the differences between plants and trees. Read the two sections of the text, including the section about evergreen trees on page 30. Explain that an easy way to remember which type of tree loses its leaves and which one does not is that *ever* means *always*. So *evergreen* means *always green* because evergreen trees do not lose their leaves. Ask comprehension questions: *What climates do plants grow in? Which plants grow in warm, wet climates? Which climate do cacti grow in?*

For the next class... OPTIONAL

Have students do Activities 4 and 5 on page 23 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation

Explain that the word *climate* describes the weather in certain areas. Have students describe the different kinds of weather in their city. If it changes much with the seasons, ask about the differences between summer and winter.

Stretch

Write opposite pairs of climate categories on the board: *cold-hot*, *mild-extreme*, *wet-dry*. Have students brainstorm places for each climate, like beaches, mountains, the Arctic, deserts, etc.

Plants in Different Climates

Plants have adapted to grow in different climates and conditions. Palm trees and coconut trees grow in tropical climates where it is warm and wet, like the beach. Cacti, joshua trees, and desert marigolds grow in hot, dry places.

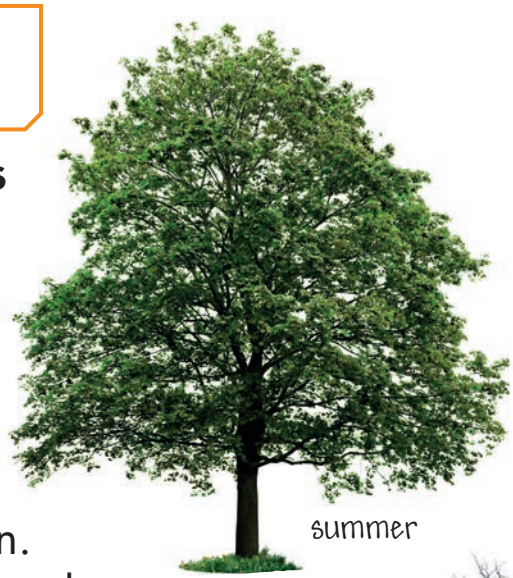


Word Box

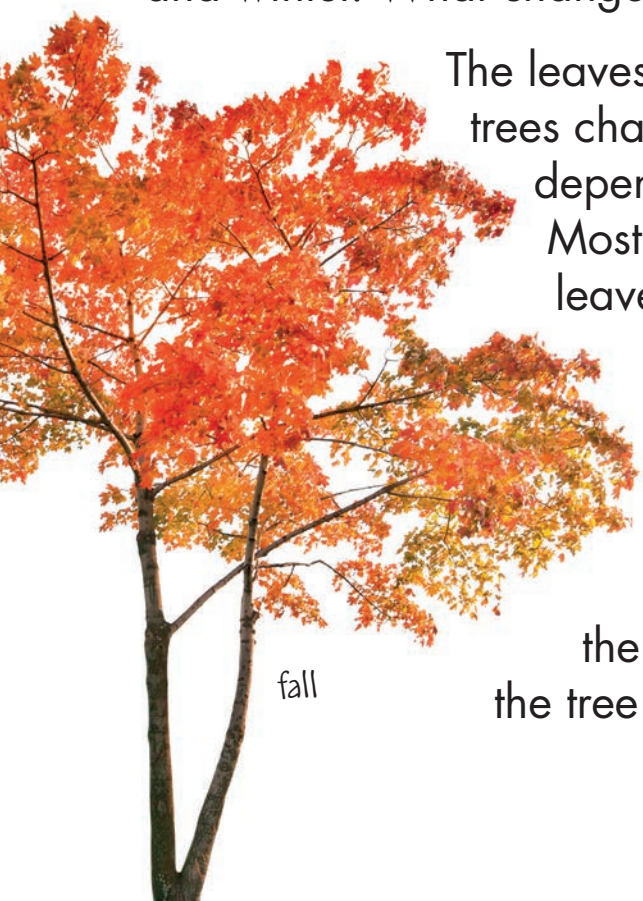
deciduous
evergreen

Types of Trees

There are two main types of trees: **deciduous** and **evergreen**. Look at the three pictures. This is the same maple tree in summer, fall, and winter. What changed?



summer



fall

The leaves of deciduous trees change color depending on the season. Most deciduous trees lose their leaves in the fall. In winter, deciduous trees are bare.

When the leaves change color, or even if all the leaves fall off, the tree is still alive! In spring, when the weather is warm again, the tree springs back to life.



winter

Evergreen trees don't lose their leaves in different seasons. They keep their leaves all year round. This is a laurel tree. It is an evergreen tree.



3. Look at pictures of the same tree. Circle what type of tree it is.

deciduous

evergreen



winter



spring



summer



fall

Learning outcome: Students will have identified what kind of tree changes through the seasons.
Keyword: *spring*
Materials: pictures or cutouts of different types of plants for students to describe (one per pair)
Resources: Unit 3 poster; Workbook (optional); Lesson 1 worksheet; Lesson 1 *Vocabulary activity*

CONNECT

Display the Unit 3 poster. Point to the tree parts as you say their names. Keep the poster up on the board, and have students form two lines at the back of the class. Call out a tree part and have one student from each line race to point to it. Give points. Play until all students have had a go.

INVESTIGATE

3 Look at pictures of the same tree. Circle what type of tree it is.

Have students describe the leaves in each of the pictures. Ask: *How are the leaves on this tree in (spring, summer, fall, and winter)?* Then say the words *deciduous* and *evergreen* and have students raise their hands to indicate their answer. Ask them to circle the correct word. Have students practice saying the words in pairs.

Extra Activity OPTIONAL

Have students turn to Activity 6 on page 23 in their Workbook. Tell them to work individually and then share their answers in pairs. Check answers as a class. Refer to the Workbook Answer Key on page T110. Explain any aspect of the types of trees that students might need to reinforce.

THAT'S PHENOMENAL!

Giant sequoias are a type of tree that only grow in California, a state on the western coast of the United States. They need such a specific type of climate that they only grow in one forest in this state. Giant sequoias are the largest trees in the world. The largest sequoia tree is called the *General Sherman* tree and it is as tall as a 6-story building. Sequoias grow from a seed that is only about 1 cm long!

DEMONSTRATE

Put students into pairs, Distribute one Lesson 1 worksheet per pair. Have them work together to describe the plant in the picture they were given. Guide them in the activity and provide help if needed.

MIND MAP

Have students go to page 113 in their Student Book and add information to the *classifying plants* section. Elicit what they have learned about different habitats and types of trees, and write their ideas on the board while they do the same in their books.

Go to the Lesson 1 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class...

Have students look for pictures of the evergreen giant sequoias in California for homework.

DIFFERENTIATED INSTRUCTION

Remediation

Have students divide a sheet of paper into four, and label each part as *spring, summer, fall*, and *winter*. Then have them draw and color how a deciduous tree looks in each of the seasons.

Stretch

Have students draw a deciduous tree and an evergreen tree. They should draw how these trees look throughout the four seasons and label them with a specific tree name (laurel, maple tree, etc.).

What are the parts of a plant?

Learning outcome: Students will have learned the parts of a plant and their characteristics.
Keywords: *roots, stem, trunk, leaves, flowers, fruits, root hairs, nutrients, bark, veins*
Materials: a small plant with a flower, a shoot, and a bud
Resources: Unit 3 flashcards; *Plant parts* video

CONNECT

PHENOMENAL ACTIVITY

Plant parts
Explain that even if we cannot see plants move, a lot of things happen inside them. Ask: *How do you eat and drink? How do you think plants eat and drink?* Project the *Plant parts* video. Ask simple comprehension questions, such as: *What do plants need? How do they eat and drink water?*

Extra activity

Display all of the Unit 3 flashcards. Elicit the words students know and say the rest. Leave the flashcards on display. Show students the real plant. Remind them it is a living being. As you walk around, have students recall plant parts. Ask questions about the plant: *Is it a tree? Does it have bark? Is it an herb? Is it a seedling? Can you see any shoots? Any buds? Where is the soil?* Leave the plant in the classroom so that students can see how it changes over time. Have them notice the changes and use the flashcards accordingly.

SYNTHESIZE

Read the text about parts of a plant out loud and ask questions to check comprehension, such as: *What do roots, stems, and leaves do?* Have students take a look at the words listed in the glossary. Ask them to check the ones that describe plant parts (bark, seed, seedling, shoot, trunk). Then have them circle all the plant parts listed in the text.

1 Draw a plant in your notebook and label its parts.
Tell students to draw a plant in their notebooks and label it. Make sure they review all the words they have learned in their Student Book and from the flashcards. Once they are done, have them name all plant parts they have learned and have them raise their hands if they included that part in their drawing. Show the flashcards again as you say the words.

Comparing To develop the Comparing skill, have students compare their drawings in groups of four. Have them focus on how their plants are alike and how they are different. Provide help if needed.

For the next class... OPTIONAL

Have students do the activities on page 24 in their Workbook. Refer to the Workbook Answer Key on page T110.

DIFFERENTIATED INSTRUCTION

Remediation
Ask students to show their labeled drawing to a classmate and say the plant parts out loud.

Stretch
Ask students to draw and label a tree, a flower, and an herb. Have them share their drawing with a classmate.

Lesson 2

What are the parts of a plant?

Parts of a Plant

Most plants have roots, a stem or **trunk**, leaves, flowers (or buds), and fruits.

Word Box
trunk
root hairs
nutrients
bark
veins

Roots

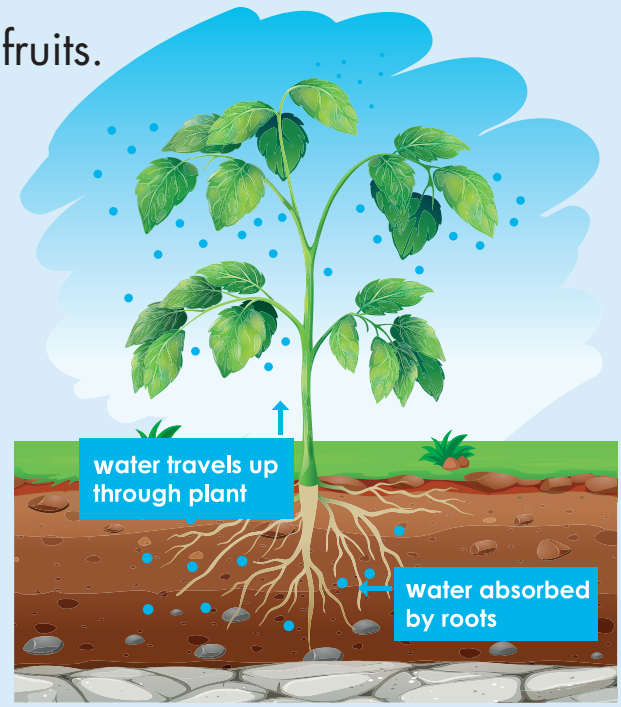
Roots help plants hold onto the ground and grow upright. Roots have tiny **root hairs** to absorb (take in) water and **nutrients** from the soil. Roots can grow underground, above ground, or above water.

Stems

Stems support the leaves, flowers, and fruits. They also transport water and nutrients up and down the plant. Trees have a thicker stem known as a trunk. Tree trunks are covered in **bark** to protect the tree.

Leaves

Leaves carry out photosynthesis. They take in the sun's energy and carbon dioxide gas from the air to make food for the plant. Leaves have **veins** to carry water, minerals, and food.



Plants need water to grow and survive.

1. **Draw a plant in your notebook and label its parts.**
   Answers may vary.

Plants Keep Us Healthy

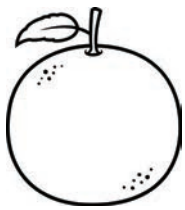
We get fruit, vegetables, and grains from plants. We eat the fruits from fruit trees. Peas and beans grow on plants, too. Some plant roots, like yams and sweet potatoes, can also be eaten.



2. Trace the words. Then color the fruits.

1 apple 2 orange 3 coconut



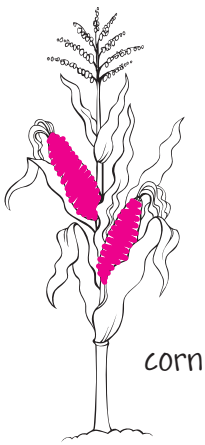




3. Color what is growing on the plants.



tomatoes



corn

4. Circle the roots you like to eat. Students' own answers.



Learning outcome: Students will have identified that some plant parts can be eaten.
Materials: crayons
Resources: *Identifying plant parts* projectable activity

CONNECT

Identifying plant parts

Project the *Identifying plant parts* activity on the board. Tell students that the flower is a daisy. Point to the three parts marked with a question mark and have volunteers name each part. As they do, click on the question mark to reveal the name. Then do the same with the second slide showing the apple tree. Encourage students to point at and name other parts of the flower and tree that they know.

INVESTIGATE

Communicating To develop the Communicating skill of showing results, start the activity by telling students to write their favorite and least favorite fruit and vegetable. Ask them to walk around and find someone with the same favorite fruit or vegetable. They can form groups if more than two students have the same fruit or vegetable. Monitor and provide vocabulary if needed. At the end, create a bar graph or a pie chart to record the class' results. Have students go back and work in pairs now. Ask them to choose a fruit and a vegetable and communicate the results of the graph to their classmate. For example: *Out of a total of 30 students, 5 chose strawberry as their favorite fruit.*

SYNTHESIZE

Read the text and ask students if they think they are healthy or not, and to explain why. Ask: *Do you eat fruits and vegetables every day? What fruits and vegetables do you eat?*

2 Trace the words. Then color the fruits.

Say the names of the fruits and ask students to point to them. Have students trace the words and color the pictures.

3 Color the vegetables growing on the plants.

Have students look at the pictures and describe them in pairs. Then tell them to individually color the vegetables growing on the plants. Walk around and check their answers.

4 Circle the roots you like to eat.

Ask students to name the pictures. Help them with vocabulary if needed. Then tell them to circle the roots they like to eat. Additionally, have students share in pairs which roots they have never tried. If their classmate has tried them, ask them to say if they like it or not.

For the next class... OPTIONAL

Have students do the activities on page 25 in their Workbook. Refer to the Workbook Answer Key on page T110.
Ask students to look for flowers online and bring a picture of a flower they like. Ask them to write its name too.

DIFFERENTIATED INSTRUCTION

Remediation
Brainstorm the names of fruits and vegetables with students and write them down on the board in a two-column table. Additionally, students may choose one fruit and one vegetable to draw.

Stretch
Using information from page 32 in the Student Book, have students create a table with the headings *root vegetables* and *vegetables that grow on plants*. Ask them to add three more names to the second category.

Learning outcome: Students will have learned about the primary purpose of a flower.
Keywords: *buds, petals, reproduction*
Materials: a picture of a flower (one per student)
Resources: Lesson 2 worksheet; Unit 3 song: *Plants everywhere*; Lesson 2 *Vocabulary activity*

CONNECT

Have students share the pictures and names of their flowers with the rest of the class. Distribute the Lesson 2 worksheet and ask them to complete it. Monitor and help if needed.

PLANTS EVERYWHERE

Play the Unit 3 song once or twice and have students sing along. Ask: *Which words did you recognize? What does the song talk about? Did you hear the word "reproduction"?* Write the word on the board.

SYNTHESIZE

Read the text as a class. Check for understanding by asking comprehension questions.

5 Trace the name of each flower.
Have students trace the name of each flower. Ask: *Are any of these flowers the flower in your picture?* Say the name of the flower and tell students to raise their hands if it is their flower.

6 Look at the photo. How many different flowers are there? In pairs, compare their color, size, and shape.
Ask students to compare all the flowers in the picture. Have them focus on color, size, and shape. Tell them to add their own flower too if it is not in the picture.

DEMONSTRATE

MIND MAP

Have students go to page 113 in their Student Book and add information to the *plant parts* section. Elicit what they have learned about parts of a plant in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 2 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

DIFFERENTIATED INSTRUCTION

Remediation
Have students draw a flower and label its parts.

Stretch
Ask students to draw a very simple life cycle for plants with the information they now know from the book and the song. Encourage them to use the words *seed*, *baby plant*, *adult plant*, and *flower*. Provide help if needed.

Fantastic Flowers!

Flowers grow from **buds**. Flowers have petals that come in different sizes, shapes, and colors. The primary purpose of a flower is **reproduction**, to make new plants.

Word Box
buds
reproduction

5. Trace the name of each flower.



1 sunflower



2 lily



3 rose



4 daisy

6. Look at the photo. How many different flowers are there? In pairs, compare their color, size, and shape. Students' own answers.



Lesson 3

How do plants grow?

Super Seeds



Most plants grow from seeds. Seeds come in many colors, shapes, and sizes. A seed can be small like a chia seed or large like a coconut. Seeds can be soft like papaya seeds or hard like avocado seeds.

A strawberry is the only fruit that has seeds on the outside. A typical sunflower has more than 1,000 seeds in it. Wow! Can you spot the seeds?







1. Circle the seeds you have eaten. Students' own answers.

1



2



3



Seeds on the Move

Seeds are transported by **wind** and **rain**, by **animals** that touch or eat them, or when humans throw them away. When these seeds fall on the ground, a new plant grows there.

Word Box

wind
rain
animals





How do plants grow?

Learning outcome: Students will have learned about plant seeds.
Keywords: *wind, rain, animals*
Resources: *Plant parts* video; *Seeds you can eat* projectable activity; Workbook (optional)

CONNECT

PHENOMENAL ACTIVITY

Plant parts

Ask students to look at the pictures on the page and describe them. Then ask: *Do you know how you can get new avocado or strawberry plants?* Accept all possible answers. Then play the *Plant parts* video (only 1:42 to 1:49). Ask again: *How do new plants grow from old plants?*

SYNTHESIZE

Read the first part of the text out loud and ask questions to check comprehension: *Where do most plants come from? Do all seeds look alike? Is there just one seed in each plant?* Direct students to the pictures next to the text and ask them to identify and describe the seeds (color, shape, size, and number).

1 Circle the seeds you have eaten.

Project the *Seeds you can eat* activity on the board. Point at the pictures and ask: *Do you eat these seeds? Do you like them?* Have students look at the pictures and identify and describe the seeds. Then tell them to circle the seeds they have eaten. Ask them to discuss if they liked them or not, and which of the three would be their favorite.

Extra activity OPTIONAL

Have students turn to Activity 2 on page 26 in their Workbook. Ask students to work individually and then compare answers with a classmate. Ask them which fruits they have eaten and which they like best.

Before reading the second part of the text, ask students: *How do you think seeds get to the ground?* Accept all possible answers. Explain that there are several ways in which seeds can get to the ground and start growing into a new plant. Read the text out loud and ask comprehension questions: *What are four ways in which seeds can end up in the ground? What ways do the pictures next to the text show?*

THAT'S PHENOMENAL!

Coco de Mer (which means "coconut of the sea") is the largest seed in the world. It weighs about as much as a 9- or 10-year-old kid! It looks like a double coconut or a giant bean. It is the seed of a very tall palm tree that only grows in the Seychelles Islands, and it is an endangered species. The name was given because long before men discovered the tree, they could see the huge seeds floating in the sea.

For the next class...

Tell students to bring the Lesson 2 worksheet they completed in Unit 2.

DIFFERENTIATED INSTRUCTION

Remediation

Have students make a list of fruits with seeds using the pictures on the page.

Stretch

Have students make a list of other fruits they know of that have seeds. Have them choose one and draw it, following the example of the pictures on the page.

Learning outcome: Students will have learned about germination and that some plants grow from bulbs and buds, not seeds.
Keywords: *shoot, seedling, bulbs, eyes, tuber*
Materials: soaked bean seeds (one per student)
Resources: Unit 3 flashcards: *bud, seeds, seedling, shoot, soil*; Unit 2 Lesson 2 worksheet; Unit 3 song: *Plants everywhere*; Lesson 3 worksheet; *Seed growth* video; Lesson 3 *Vocabulary activity*

CONNECT

Display the Unit 3 flashcards *bud, seeds, seedling, shoot,* and *soil* and review them. Ask students to work in pairs to describe how a plant grows using the flashcard words. Alternatively, you can use the Unit 2 Lesson 2 worksheet cards to have them review the stages of plant growth.

PLANTS EVERYWHERE

Play the Unit 3 song again and have children sing along. Ask students to explain the words *reproduction* and *germination*.

Extra activity

The night before the class, soak the bean seeds in water. Distribute one seed bean and one Lesson 3 worksheet to each student. Have students say what type of seed it is and ask them to guess what is inside the seed. Ask them to make a drawing of their prediction on the left side of the worksheet. Then have them carefully split the seed open and see what is inside. Ask: *Did you guess correctly?* Have students draw the interior of the seed.

SYNTHESIZE

Project and play the *Seed growth* video and have students just watch it. After watching the video, read the text out loud. To check comprehension, ask students to list the steps in germination. Then ask: *Are those steps shown in the video?*

2 In pairs, discuss why roots grow before flowers on plants.

To develop the Critical Thinking skill of finding a reason, start by having students recall the purpose of roots. Then read the question and let them discuss. Monitor and provide help if needed.

Read the text out loud and ask comprehension questions: *Do all plants grow from seeds? Which plants do not grow from seeds? What does a tuber grow from?*

MIND MAP

Have students go to page 113 in their Student Book and add information to the *plant growth* section. Elicit what they have learned about germination and seeds in this lesson and write their ideas on the board while they do the same in their books. When students have completed their mind map, have them review its contents to identify and correct any mistakes.

Go to the Lesson 3 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on pages 26 and 27 in their Workbook. Refer to the Workbook Answer Key on page T111.

DIFFERENTIATED INSTRUCTION

Remediation

Display the Unit 3 flashcards for *bud, seeds, seedling,* and *soil* and have students put them in order following the germination process.

Stretch

Display the Unit 3 flashcards for *bud, seeds, seedling,* and *soil* and have students explain the germination process in pairs.

Germination

Germination is when a seed begins to grow. First, a root grows into the soil. Next, a small stem (**shoot**) grows upward. Then, a few leaves appear. It is now a **seedling**. This seedling will grow into an adult plant. It then produces buds that will flower. Some flowers turn into fruits. Inside flowers and fruits are seeds for future plants.

Word Box
shoot
seedling
bulbs

2. **In pairs, discuss why roots grow before flowers on plants.**

Answers may vary.

Bright Bulbs!

Some plants grow from **bulbs** instead of seeds. Plants that grow from bulbs include daffodils and tulips.





Tuber Time!

Word Box
eyes
tuber

Look, can you see the **eyes** on the potatoes? A **tuber** doesn't grow from a seed either. It grows from a bud.

What do plants need to grow?

STEAM

Objective:

To observe what bean plants need to grow.

Materials:


seeds


watering can


2 pots


cardboard box


soil

Group A: Light

Steps:

1. Put the soil in the pot.
2. Add the seeds.
3. Put a thin layer of soil on top.
4. Put the pot near a window.
5. Water the pot regularly.

Group B: Darkness

Steps:

1. Put the soil in the pot.
2. Add the seeds.
3. Put a thin layer of soil on top.
4. Put the pot in the box.
5. Water the pot regularly.

Observe how the plants grow. Draw what happens after 10 days.

Group A

Group B

Go Beyond...

What will happen if a plant receives too much sunlight or too much water?

What do plants need to grow?

Objective: To observe what bean plants need in order to grow.
Materials: seeds, soil, a watering can, two pots, a cardboard box
Resources: Makerspace worksheet

DEMONSTRATE

Use the Makerspace worksheet on the platform. Alternatively, photocopy the Unit 3 Makerspace worksheet on page T125.

GET IT READY

Display the materials and have students brainstorm what they can do with them. Elicit what plants need in order to live. Explain to students that they will be observing two bean plants and how they grow for 10 days.

Read the information about the materials and the steps in the book and have some volunteers paraphrase each step.

Divide the class into two groups. Have each group gather the materials they will need. Give them the opportunity to choose the materials that they think might be helpful.

GET IT GOING

Have students carefully follow the steps and plant the beans. Let them know they can observe the plants every day and make notes about what they individually observe, but that they will only discuss their conclusions after 10 days. Ask them to predict what is going to happen to each plant.

On day 10, invite groups to observe carefully and discuss what is alike and what is different in both plants. Ask them why they think group B's plant looks like it does. Allow some time for them to talk about their predictions and if they were right.

Allow students enough time to do the activity and answer the questions in their books. Monitor their work, provide help if needed, and ask questions about their findings.

Once teams have finished, gather the class and have a guided discussion on their findings. Invite some volunteers to share their notes and compare their plants.

GET IT DONE

Gather students in a circle to have a discussion to conclude the observation practice. Invite them to discuss their findings after 10 days. Conclude by summing up the basic needs that plants have and the effects of not getting those basic needs. Remind students to take good care of plants at home and give them what they need. This is a good opportunity to lead their discussion towards raising ecological awareness. Connect this topic to Unit 2.

Allow some time to talk about their experience doing the project. Ask them what they found interesting, challenging, and enjoyable.

GO BEYOND

Ask the question in the Go Beyond box. Tell students to draw their conclusions and discuss them in small groups.

Objective: To review and assess plant habitats, plant parts, and how a plant grows.
Resources: Unit 3 song: *Plants everywhere*: Unit 3 Self-assessment; Unit 3 Test

EVALUATE

PLANTS EVERYWHERE

Have students recall the Unit 3 song chorus. You can play the chorus, or you can write it down on the board. Ask: *What makes a habitat cold, hot, dry, or wet?* Ask them to describe their own habitat.

1 Match the plants to their habitat.

Elicit very simple characteristics of an aquatic (in the water) and a tropical (gets a lot of rain) habitat. Help students with the word *tropical* if needed. Then tell students to work in pairs. Have them describe each picture and then complete the activity. Check answers as a class. Elicit examples of more habitats.

2 Circle the parts of plants.

Elicit plant parts (trees and flowers included). Tell students that you will say some words and they will stand up if what you say is a plant part. If not, they will remain seated. Read the words in the activity. After a few rounds, have students circle the parts of plants in the activity. Check answers as a class.

3 Draw roots growing from the seeds.

Have students draw roots growing from the seeds. Ask them to share their drawings with a classmate. Ask: *What are roots for?* Use this question to assess students' understanding of how plants get their nutrients and water from the soil.

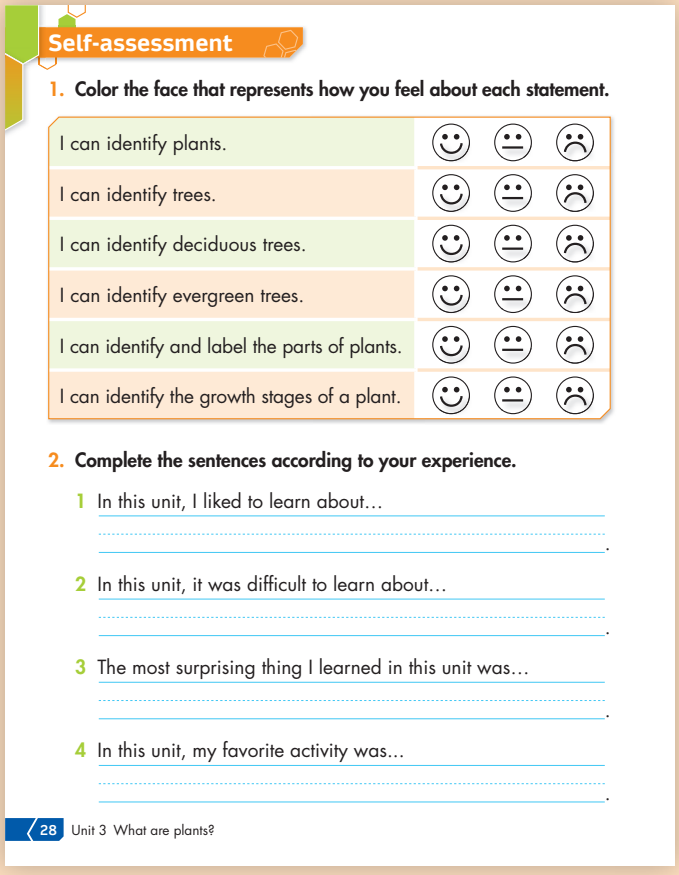
SELF-ASSESSMENT

Use the Unit 3 Self-assessment on the platform. Alternatively, have students turn to page 28 in the Workbook. Read the instructions and the self-assessment table out loud and check comprehension. Have students work on their own. Monitor their work. When students have completed their assessment, ask them to share which can-do they found easiest and which they found the hardest.

To further develop self-assessment, have students reflect on and write about their experience thinking about what they liked to learn, what was difficult to learn, and the most surprising thing they learned. Read the sentences for them and give them time to complete each. This activity will help them reflect on their learning. Monitor and provide help if needed.

ASSESSMENT

Use the Unit 3 Test on the platform to evaluate students' performance and development. Alternatively, photocopy the Unit 3 Test from page T144.



Self-assessment

1. Color the face that represents how you feel about each statement.

I can identify plants.	☺ 😐 ☹
I can identify trees.	☺ 😐 ☹
I can identify deciduous trees.	☺ 😐 ☹
I can identify evergreen trees.	☺ 😐 ☹
I can identify and label the parts of plants.	☺ 😐 ☹
I can identify the growth stages of a plant.	☺ 😐 ☹

2. Complete the sentences according to your experience.

1 In this unit, I liked to learn about…

2 In this unit, it was difficult to learn about…

3 The most surprising thing I learned in this unit was…

4 In this unit, my favorite activity was…

28 Unit 3 What are plants?

1. Match the plants to their habitat.

1 

2 

3 

4 

tropical

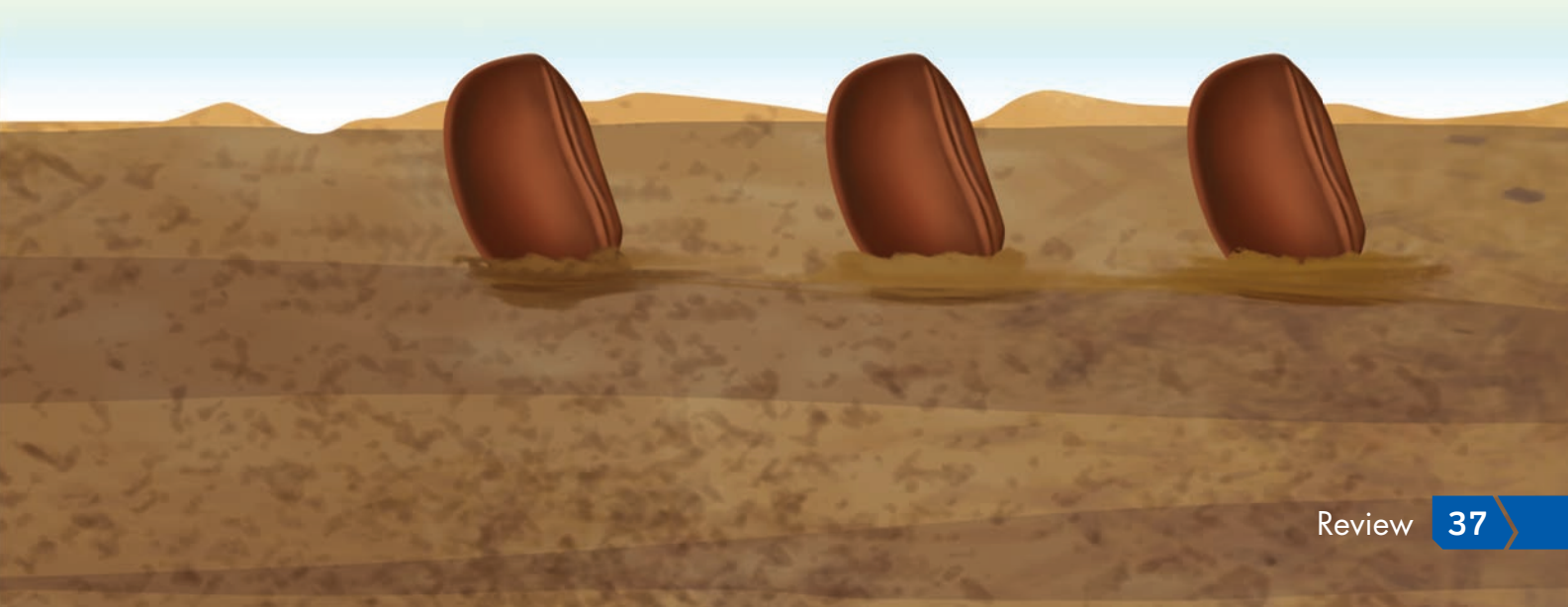
aquatic

2. Circle the parts of plants.

stem	leaves	sun	trunk
soil	roots	flowers	fruit

3. Draw roots growing from the seeds.

Answers may vary.



What do you know about animals?

LEARNING OBJECTIVES

- Learn that animals live everywhere.
- Explore animal attributes, body parts, and body coverings.
- Notice how animals are the same and different.
- Compare animal groups.
- Learn about animals' diets.
- Notice that animals can be vertebrate or invertebrate, cold- or warm-blooded.
- Learn about an animal's life cycle.
- Construct an animal life cycle model.

STEAM CONNECTION

- Students demonstrate curiosity about how animals are the same and different.
- Students notice animal body parts and coverings.
- Students observe animal attributes to determine which group they belong to.
- Students investigate and discuss animal life cycles and how animals are born.

Use the Unit 4 STEAM worksheet to work on the unit's topic connection with the subject of art.

DIGITAL RESOURCES

Phenomenal video: *How are animals alike and different?*

Do you have a pet?
Quest: *A good pet?*
Projectable activities: *Comparing different animals* (Lesson 1), *Animal types* (Lesson 2), *Animal life cycles* (Lesson 3)
Printable: Lessons worksheets
Vocabulary activities

MAKERSPACE

How do we make an animal life cycle model?

This project can be done at the end of the unit in a single class. Students investigate, identify, and name the life cycle stages of an animal of their choice. They notice that animals can be born live or can hatch out of eggs.
Students work in groups to do this project and compare their models. Allow some discussion time at the end so that they can all reflect on life cycles. Prepare kits of material per team in advance, but leave room for students to choose the materials they think they could use.

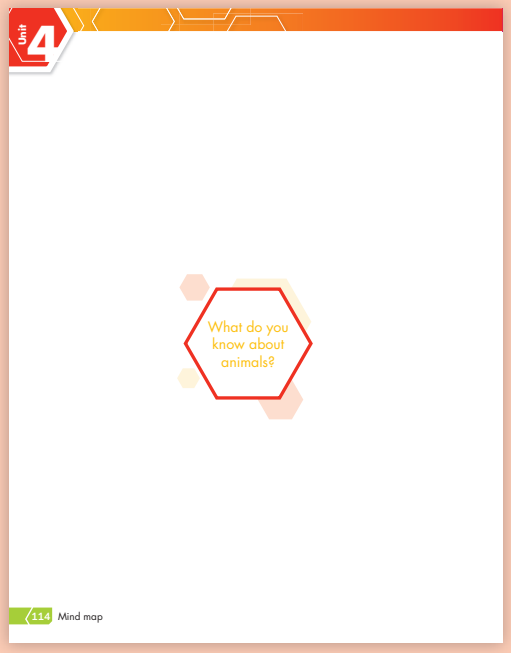
Print the Unit 4 Makerspace worksheet on the platform. Alternatively, photocopy the worksheet on page T126.

ASSESSMENT TOOLS

- Review: Student Book page 49

Self-assessment: Workbook page 36

Assessment: Unit 4 Test



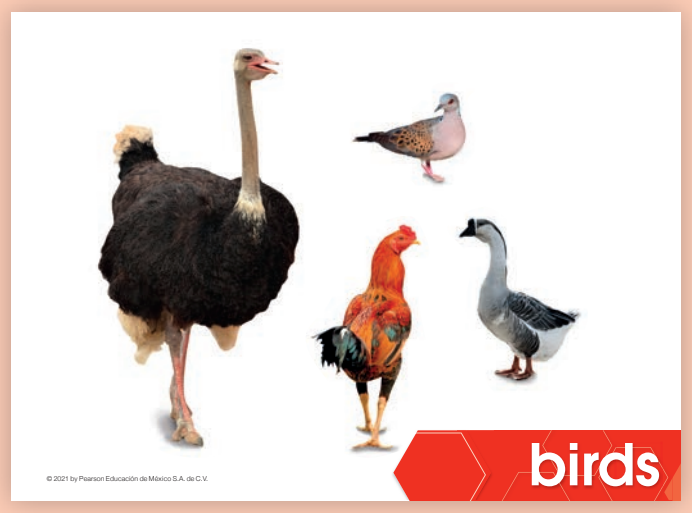
FLASHCARDS

amphibians, birds, carnivores, fish, herbivores, insects, mammals, omnivores, reptiles

Lesson 2, Makerspace project, and Assessment.







POSTER

The Unit 4 poster shows a polar environment with arctic animals: a puffin, a penguin, walruses, a polar fox, and a polar bear. It also shows animal body parts: wing, beak, skin, fur, and paws. It can be used to show animal attributes.

Lesson 1.



What do you know about animals?

Learning outcome: Students will have identified that animals are all around us.
Resources: Unit 4 Phenomenal video: *How are animals alike and different?;* Unit 4 video worksheet; Quest: *A good pet?*

CONNECT

FLIPPED LEARNING

Before class
Students watch the video before class. Give them the Unit 4 video worksheet beforehand to complete it as they watch the video at home. Alternatively, you could watch the video in class.

In class
Ask students to take out their video worksheet and elicit how animals compare to each other. Write the title of the experiment on the board, *How are animals alike and different?* Put students into small groups and have them report on their observations recorded in the table. Have a guided discussion about the results and the conclusion.

Draw students' attention to the picture in their book and have volunteers describe it. Have them name the animals in the picture. Read the text out loud and ask comprehension questions. Write the word *habitat* on the board. Explain that a habitat is the place where something lives. Have students circle the places where animals mentioned in the text live.

1 What type of animals can you see in the picture?
Ask students to look carefully at all the animals in the picture. Have them complete the activity individually. When they have finished, tell them to compare answers with a classmate.

2 Do you, or someone you know, have a pet? How do you, or they, take care of it? Discuss with a classmate.
Tell students that cats, dogs, and fish are the most common pets people own. Have them raise their hand if they have (or have had) a cat, a dog, or a fish. Read the questions and tell students to discuss in pairs. Monitor and help with vocabulary. You can also direct students to the glossary.
Ask students if they have discovered any unusual pets during their discussions. Make a list and ask the owners of the unusual pets to talk about their pets.

QUEST A good pet?

Go to the *Quest* activity on the platform. Project *A good pet?* and complete it as a class. For every animal that students classify in the "Not a good pet" column, ask them to give reasons. For every animal they classify in the "Not sure" column, ask them to discuss why they are not sure. Have a class discussion.

MIND MAP

Start a mind map on the board. Have students go to page 114 in their Student Book and read the title question of this unit at the center of the mind map. Add the concepts *body parts, body coverings, animal groups*, and *life cycles* on each section of the map.

For the next class…

Ask students to bring a magazine cutout of an animal of their choice.

Unit 4

What do you know about animals?

Animals are all around us. Some animals live in people's homes. We call them pets. Some animals live on farms. Other animals live in the wild. All animals have life cycles; the young grow into adults and produce more offspring.

We can group animals by how they are similar and different.

1. **What type of animals can you see in the picture?**
   wild animals
2. **Do you, or someone you know, have a pet? How do you, or they, take care of it? Discuss with a classmate.**
   Students' own answers.



Phenomenal Video: Animals: How Do They Compare?

Lesson 1

What makes animals the same and different?

Word Box

attributes
paws
hooves
wings
beaks
whiskers
fins

Animal Differences

Many animals have similar characteristics or **attributes**. These attributes describe the animal. Animal body parts are named differently from humans'. We have hands and feet. Cats and dogs have **paws**. Tigers and bears do, too. Horses and zebras have **hooves**.





Some animals have body parts that others do not. Many animals have four legs but others have just two. Birds have **wings** and **beaks**. Cats and mice have **whiskers**. Fish have **fins**.



1. Circle the animals that have paws.

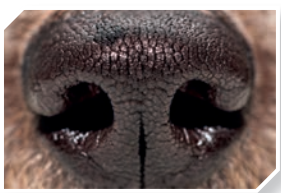
1 

2 

3 

4 

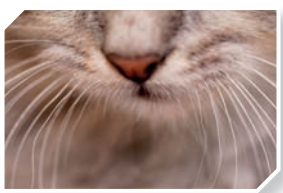
2. Can you guess the animal by looking at its snout?

1 

dog

2 

dolphin

3 

cat

What makes animals the same and different?

Learning outcome: Students will have identified that animals have similar and different attributes.
Keywords: *attributes, paws, hooves, wings, beaks, whiskers, fins*
Materials: a magazine cutout of an animal
Resources: Unit 4 poster; Unit 4 song: *Do you have a pet?*

CONNECT

Display the Unit 4 poster and have students describe the habitat. Then ask students to name the animals they see. Leave the poster on the board.

DO YOU HAVE A PET?

Tell students they are going to sing a song about pets and animals. Play the song once or twice for students to get familiar with and start singing it. Ask: *Which words did you recognize?* Write them on the board. Ask: *What does the song talk about?* Play the song again and have students sing along.

INVESTIGATE

Tell students to share their animal cutouts with a classmate. Ask them to first name the animals and then identify some similarities. Ask: *Do they have the same number of legs? Do they have fur? Do they live in the same place?* Then ask them to brainstorm other animals similar to the ones in their cutouts. Tell students to keep the cutouts in class for the next session.

SYNTHESIZE

Read the text about similar animal attributes out loud. Ask comprehension questions, such as: *What are similar characteristics in animals called? Are animal body parts called the same names as in humans? What are some animal body parts?* Ask students to read the words in the word box. Elicit their meaning. Ask if they have heard any of the words in the song (*paws*). Direct students' attention to the Unit 4 poster again. Ask students to name the similar attributes they can see between two or more animals in the poster. Help them if needed.

1 Circle the animals that have paws.

Have students identify the animals shown in each picture. Then point to each picture as you ask: *Does the [cow / cat / bear / horse] have paws?* Elicit answers and tell students to circle the pictures. Finally, ask: *Do you have paws? What do you have?*

2 Can you guess the animal by looking at its snout?

Elicit the meaning of the word *snout*. Have students go back to the text to check what it refers to. Read the question. Students may work in pairs or as a class.

For the next class... OPTIONAL

Have students do the activities on page 30 in their Workbook. Refer to the Workbook Answer Key on page T111.
Remind students to keep their animal cutouts for the next class.

DIFFERENTIATED INSTRUCTION

Remediation

Have students draw and label a person's nose, an elephant's trunk, and a dog's snout.

Stretch

Have students draw a T-table and write as many animals as they know that have paws (cat, tiger, dog, fox, rabbit, bear, racoon, mouse, rat, etc.) and hooves (horse, cattle, rhinoceros, deer, pig, sheep, camel, giraffe, antelope, etc.).

Learning outcome: Students will have identified that animals use different body parts to taste and smell their food.
Keywords: *trunks, snouts, tongues*
Materials: a magazine cutout of an animal
Resources: Unit 4 poster; Lesson 1 worksheet

INVESTIGATE

Observing To develop the Observing skill, start the session by having students take out their magazine animal cutouts. Review or teach vocabulary words for these animal body parts: *trunks, snouts,* and *tongues*. Call out the words one by one and have students raise their cutouts if their animal has that body part.

SYNTHESIZE

Read the text about other body parts out loud. Ask comprehension questions. Ask students to read the words in the word box. Elicit their meaning. Direct students' attention to the Unit 4 poster. Ask students to describe the animals by mentioning their body parts. Ask: *Does the puffin have a beak? And the walruses? Does the bear have four legs? And the penguins?* Continue asking comparative questions. Help students if needed. Finally, ask students to circle the body parts mentioned in the text.

3 Look at the pictures and complete the information.
Have students look at the pictures. Ask them to guess which animal it is by giving them three possible options. Then have them choose one of the options as their final answer and write it on a piece of paper. Collect the papers and read the answers out loud. Keep a tally on the board. Check answers as a class and see if the right answer was among the five most popular answers from student guesses. Repeat with the second picture. Let students write the attribute shown in each picture individually.

DEMONSTRATE

Distribute the Lesson 1 worksheet. Have students roll the die to complete the animal attributes. Then have students compare and contrast their animal's attributes in pairs.

Extra activity

Have students use their animal cutouts to play "Guess Who." Students walk around and choose a classmate they have not worked with in this unit. Make sure students do not show their cutout or say what their animal is. One student says the attributes for his or her animal (e.g. *I have no legs*), and the other student tries to guess (e.g. *Are you a worm?*).

THAT'S PHENOMENAL!

Puffins spend most of their lives out at sea. They are great swimmers. When they are not swimming, they spend their time resting on the sea waves. They are also called "sea parrots" or sometimes "clowns of the sea!" A puffin's beak is also called a *bill*. A puffin's bill changes color during the year. In winter, it is a grayish color, but in summer, it is bright orange.

For the next class...

Remind students to keep their animal cutout for the next class.

DIFFERENTIATED INSTRUCTION

Remediation
Have students draw one of the animals in the unit poster and label the body parts they know.

Stretch
Have students choose two animals from the unit poster and compare their attributes in a Venn diagram. You can draw a Venn diagram on the board for reference and use a cat and a dog as an example.

Oh, So Yummy!

Our mouth and tongue help us to taste things. Most animals use their tongue to grab onto food. Frogs have a very sticky tongue that helps them catch insects! Some animals use different body parts to taste their food. Butterflies use their feet to do so!

Word Box

trunks
snouts
tongues

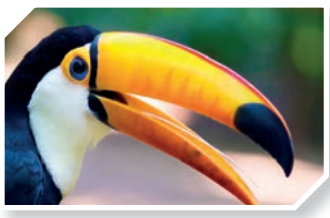
Sniff, Sniff!

We use our noses to smell, but elephants use their **trunks**. Dogs use their **snouts**. Did you know that black bears can smell food up to 32 kilometers away? Some animals don't use their nose to smell. Snakes use their **tongues** to do so!



3. Look at the pictures and complete the information.

1



Animal: toucan

Attribute in the picture: beak

2



Animal: fish

Attribute in the picture: fin

Body Coverings

Humans have **skin** to protect their body. Apart from skin, body coverings also protect an animal. Some animal body coverings include **hair**, **feathers**, **fur**, and **scales**.



Word Box
skin
hair
feathers
fur
scales

4. Look at the picture above. Write the type of body coverings the animals have.

1 cat fur

2 fish scales

3 bird feathers

4 rabbit hair

5. Check (✓) the features of each animal.

	feathers	scales	hair or fur	skin
1 frog	☐	☐	☐	☑
2 dog	☐	☐	☑	☐
3 goldfish	☐	☑	☐	☐
4 parrot	☑	☐	☐	☐

6. Write a description of your favorite animal in your notebook. In pairs, guess each other's animal. Students' own answers.

Learning outcome: Students will have identified the body coverings of different animals.
Keywords: *skin, hair, feathers, fur, scales*
Materials: a magazine cutout of an animal
Resources: *Comparing different animals* projectable activity; Lesson 1 *Vocabulary activity*

INVESTIGATE

PHENOMENAL ACTIVITY

Comparing different animals

Project the *Comparing different animals* activity on the board. First, have students name each animal. Help if needed. Then have students get into pairs. Ask them to choose two animals and compare them, saying how they are the same and different. Alternatively, you can also say attributes and have students call out the animals that have it. Monitor and help if needed.

SYNTHESIZE

Read the text about body coverings. Ask students to read the words in the word box. Elicit their meaning. Then have them circle the different body coverings mentioned in the text. Ask students to take out their animal cutouts. Call out the different body coverings students have just learned and have them raise their pictures if their animal has it.

4 Look at the picture above. Write the type of body coverings the animals have.

To review vocabulary, elicit the names of the animals in the picture. Ask students what type of body coverings the animals have. Then ask them to write their answers in the book.

5 Check (✓) the features of each animal.

Tell students to read the animals and features listed in the table. Ask them to complete the table individually. Then have them compare answers in pairs, before checking answers as a class.

6 Write a description of your favorite animal in your notebook. In pairs, guess each other's animal.

Ask students to think about their favorite animal. Without naming it, tell them to write a description of that animal in their notebooks. Encourage them to use the vocabulary words they have learned throughout the unit and to include body parts and body coverings. Insist that they do not mention or write the name of the animal. To develop the Communication skill, ask pairs to switch notebooks and try to guess each other's animals. Remind them to be respectful at all times.

DEMONSTRATE

MIND MAP

Have students go to page 114 in their Student Book and add information to the *body parts* and *body coverings* sections. Elicit what they have learned about body parts and body coverings in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 1 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 31 in their Workbook. Refer to the Workbook Answer Key on page T111.
Remind students to keep their animal cutouts for the next class.

DIFFERENTIATED INSTRUCTION

Remediation

Have students make a list of all the animal body parts they know. Allow them to check their books.

Stretch

Mention an animal body part or body covering and have students mention as many animals as they can that have the body part or covering. Alternatively, students can write a list.

How are animals grouped?

Learning outcome: Students will have identified animal groups.
Keywords: *mammals, fish, birds, reptiles, amphibians, insects*
Materials: big white cardboard, glue, a magazine cutout of an animal
Resources: Unit 4 flashcards: *mammals, fish, birds, reptiles, amphibians, insects*; Unit 4 song: *Do you have a pet?; Animal types* projectable activity

CONNECT

Show the Unit 4 flashcards for *mammals, fish, birds, reptiles, amphibians,* and *insects*. Read the words as you show the flashcards and have students repeat after you. Then show the flashcards one by one and tell students to name the animals they see. Place the flashcards on the board or wall and ask: *Are lions mammals? Are elephants reptiles? Are frogs fish? Are ladybugs insects?* Continue asking questions until students answer confidently.

DO YOU HAVE A PET?

Play the song once and tell students to pay attention to the lyrics. Ask comprehension questions: *What animals are mentioned in the song? What attributes of a cat are mentioned in the song? What about fish?* Then play the song again and have them sing along. Go to page T166 to see the activity suggested.

SYNTHESIZE

Read the text about animal groups. Show the: *mammals, fish, birds, reptiles, amphibians,* and *insects* flashcards, and have students call out the group names. Finally, have them circle the names of animal groups in the text.

1 Read and trace the types of animal groups.
Have students look at the pictures and name the animals. Help them if needed. Read each paragraph and ask questions to check comprehension, such as: *What are some other examples of mammals? How are mammal babies born? What do fish use to breathe? Are birds born live from their mothers? What is one characteristic of a reptile's skin? Can amphibians breathe in air, in water, or both? How many legs do insects have?*

Animal types

Project the *Animal types* activity on the board. Have students review the text they have just read to complete the activity as a class. If students disagree, tell them to give reasons for their answers.

Classifying To develop the Classifying skill, have students classify their animal cutouts as a class. Place a big white cardboard on the floor. Divide the cardboard into the six animal groups they have been learning about and label each section. Then ask each student to show his or her cutout, say the name of the animal, and say which animal group it belongs to. Allow other students to correct their classmates. If the answer is correct, give the student some glue and have him or her glue the cutout in the corresponding section. When students have finished, display the cardboard in class.

For the next class... OPTIONAL

Have students do the activities on page 32 in their Workbook. Refer to the Workbook Answer Key on page T111.
Ask students to research and write what their favorite animal eats.

DIFFERENTIATED INSTRUCTION

Remediation
Call out each animal group. Have students reread the text in Activity 1 and give you one to three characteristics.

Stretch
Have students assign each animal mentioned in the Unit 4 song to its corresponding animal group.

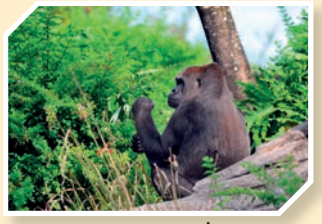
How are animals grouped?

Animal Groups

We can organize animals into groups such as **mammals**, **fish**, **birds**, **reptiles**, **amphibians**, and **insects**.

Word Box

mammals
fish
birds
reptiles
amphibians
insects


mammal


fish


insect


amphibian


reptile


bird

1. Read and trace the types of animal groups.

Mammals have hair or fur on their bodies. Most mammal babies are born live from their mothers.

Fish live in water. They have fins and scales on their bodies. They breathe using their gills.

Birds have a beak, two wings, and feathers. They lay eggs. Most birds can fly.

Reptiles have scaly skin. They can live on land or in water, but they all breathe air. Most reptiles lay eggs.

Amphibians can breathe in water and in air. They have moist skin and lay eggs.

Insects have an external skeleton. They have segmented bodies and three pairs of legs.

Hungry Animals!

Word Box
diet
carnivore
herbivore
omnivore

There are three ways to describe an animal's **diet**.

A **carnivore** only eats the meat of other animals. Examples of carnivores are lions, sharks, and wolves.

A **herbivore** only eats plants. Examples of herbivores are sheep, cows, and giraffes.

An **omnivore** eats both plants and animals. Examples of omnivores are bears, chickens, and parrotfish.

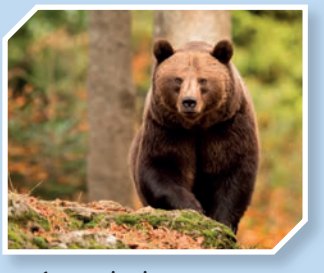
Some insects are herbivores, others are omnivores, and a few others are carnivores! What type of diet do these insects have?







Panda bears are herbivores.



Grizzly bears are omnivores.



Polar bears are carnivores.

2. Circle the sentences that are true.

1 Omnivores eat plants and other animals.

2 Herbivores don't eat plants.

3 Some bears are omnivorous, herbivorous, or carnivorous.

3. Think about your diet. Are you a herbivore, carnivore, or omnivore? Discuss with a classmate. Students' own answers.

Learning outcome: Students will have identified the three different animal diets.
Keywords: *diet, carnivore, herbivore, omnivore*
Resources: Unit 4 flashcards: *mammals, fish, birds, reptiles, amphibians, insects, carnivores, herbivores, omnivores*; Lesson 2 worksheet

INVESTIGATE

To review vocabulary, display the Unit 4 flashcards for *mammals, fish, birds, reptiles, amphibians,* and *insects*. Put them up on the board or wall two at a time. Tell students to form two lines at the back of the classroom. Say the name of one animal and have one student from each line race to touch the corresponding animal group flashcard. Play until all students have had at least one turn.

SYNTHESIZE

Read the text. Show the Unit 4 flashcards for *carnivores, herbivores,* and *omnivores*. Say the words and have students repeat after you. Elicit their meaning. You can also direct students to the glossary page. Finally, have them circle the words for different animal diets in the text.

2 Circle the sentences that are true.
Have volunteers read the sentences. Ask students to complete the activity individually. Then tell them to compare answers in pairs and discuss the sentences they do not agree on. Check answers as a class.

3 Think about your diet. Are you a herbivore, carnivore, or omnivore? Discuss with a classmate.
To develop the Communication skill, organize students into pairs. Read the question and have students discuss and give reasons for their answers. They can ask each other questions about their diets. Remind them to respect each classmate's turn. Monitor and provide help if needed. Have volunteers share their answers with the rest of the class.

Extra activity

Have students reread the text and then close their books. Show the Unit 4 flashcards for *carnivores, herbivores,* and *omnivores* and elicit their meaning. Name the animals mentioned in the text (*lion, shark, wolf, sheep, cow, giraffe, bear, chicken, parrotfish*) and have students say what diet category they belong to.

DEMONSTRATE

Distribute the Lesson 2 worksheet. Tell students they should complete it with information about their favorite animal. Have them look back on their lessons if needed to review animal parts and coverings. Ask them to include the information they researched at home about what their favorite animal eats. Finally, have them complete the last line by writing a word from the word bank. If time allows, you can have volunteers present their animal files.

For the next class... OPTIONAL

Have students do Activity 3 on page 33 in their Workbook. Refer to the Workbook Answer Key on page T111.

DIFFERENTIATED INSTRUCTION

Remediation

Have students create drawings to associate with the words *carnivore* (a steak or piece of raw meat), *herbivore* (plants and herbs) and *omnivore* (both). Have them label their pictures.

Stretch

Have students discuss in small groups what their pets or their family's pets eat and what kind of diet it would be.

Learning outcome: Students will have learned the meaning of vertebrate, invertebrate, cold-blooded and warm-blooded.
Keywords: *vertebrate, invertebrate, cold-blooded, warm-blooded*
Materials: picture of a dog, picture of a coiled snake
Resources: Lesson 2 *Vocabulary activity*

INVESTIGATE

Have students mention the names of bones they know. Help them if needed. Then say that not all animals have bones and that this is another way we can classify animals. Write the words *vertebrate* and *invertebrate* on the board. Have students reach back and feel their backbone while you explain that animals that have a backbone are called vertebrates. Then ask them to define the word *invertebrate* based on your explanation.

SYNTHESIZE

Read out loud both sections of the text. Have students read out loud the words in the word box. Explain the concepts. Finally, have them circle the six different animal groups mentioned in the text.

4 Look at the animal below. Trace the type of animal it is.

Have students look at the picture and say what animal it is. Tell them to look carefully at it and decide if it is cold- or warm-blooded. Check answers as a class. Let students trace the correct word.

5 In pairs, discuss whether you are a cold-blooded or a warm-blooded animal. Explain your answer.

Forming Conclusions To develop the Forming Conclusions skill, read the question and have students discuss in pairs the reasons for their answers to show how they came to their conclusions. Remind them to respect each classmate's turn. Monitor and provide help if needed. Have volunteers share their answers with the rest of the class.

Extra activity

Direct students' attention to the pictures on page 44 in their Student Book. In the same discussion pairs, ask them to classify the animals as vertebrate or invertebrate.

DEMONSTRATE

MIND MAP

Have students go to page 114 in their Student Book and add information to the *animal groups* section. Elicit what they have learned about how animals are grouped in this lesson and write their ideas on the board while they do the same in their books. Get students to provide one example for each animal group.

Go to the Lesson 2 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do Activity 4 on page 33 in their Workbook. Refer to the Workbook Answer Key on page T111.
Ask students to choose their favorite animal and research what the animal looks like as a baby and as an adult. Tell them to look at pictures and bring one picture of their favorite animal as a baby and as an adult to class.

DIFFERENTIATED INSTRUCTION

Remediation

Get students into groups of three and have them define or explain to each other the concepts of *vertebrate*, *invertebrate*, *cold-blooded*, and *warm-blooded*.

Stretch

Have students create two small mind maps with the information in the text. One will be titled *backbone*; the other, *temperature regulation*. Create a model on the board if necessary. They should complete it with the categories and examples from the text.

Do you have a backbone?

An animal with a backbone is called a **vertebrate**. Mammals, birds, fish, reptiles, and amphibians are vertebrates.

An animal without a backbone is called an **invertebrate**. Examples of invertebrates are snails, clams, and insects.

Word Box

vertebrate
invertebrate
cold-blooded
warm-blooded



A dog is a vertebrate.

Hot or cold?

Animals are also grouped according to their ability to regulate body temperature. **Cold-blooded** animals cannot regulate their body temperature. Their body temperature changes depending on the temperature around them. Reptiles and amphibians are cold-blooded animals.

Warm-blooded animals are able to keep their body temperature constant. Examples are mammals and birds.



A jellyfish is an invertebrate.

4. Look at the animal below. Trace the type of animal it is.

cold-blooded warm-blooded



5. In pairs, discuss whether you are a cold-blooded or a warm-blooded animal. Explain your answer.

Warm-blooded, as we are mammals and can keep our body temperature constant.

Lesson 3

What are animal life cycles?

Life Cycles



All living organisms, including plants and animals, have a **life cycle**. All living things will eventually die, but a life cycle means that their offspring will go on to reproduce and continue the species.

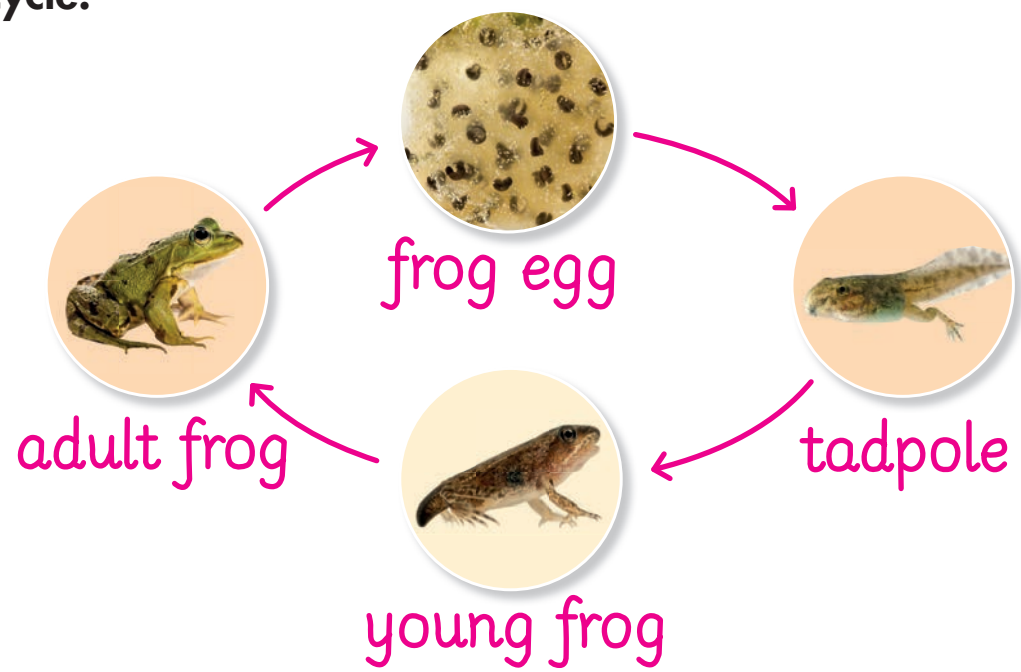
A life cycle is drawn as a circle with arrows to show the direction the events happen. A life cycle starts when life begins.

Every living thing shares the basic stages of **birth**, **growth**, and **reproduction** in a life cycle. Some life cycles have many stages. Other life cycles have fewer stages.

Word Box

life cycle
birth
growth
reproduction

1. Trace the words. Then draw arrows to show the stages of the life cycle.



What are animal life cycles?

Learning outcome: Students will have learned about animal life cycles and their basic stages.
Keywords: *life cycle, birth, growth, reproduction*
Materials: a picture of their favorite animal as a baby and as an adult, a picture of an adult and baby Tasmanian devil

CONNECT

Tell students to recall the baby and adult form of their favorite animal. Have them play Pictionary. Volunteers come to the board and draw the baby animal first. The rest of the class tries to guess the animal. If no one can guess correctly, then the volunteer can draw the adult animal. Help with the drawing or by giving hints, if needed.

INVESTIGATE

Show the picture of the adult and baby Tasmanian devil. Ask students to take out their pictures and elicit differences.

SYNTHESIZE

Read the text about life cycles out loud and ask comprehension questions, such as: *Do plants have life cycles? Do animals have life cycles? Do human beings have life cycles? What is an offspring? What are the basic stages of a life cycle?* Ask students to read the words in the word box and elicit their meaning.

1 Trace the words. Then draw arrows to show the stages of the life cycle.
Have students look at the frog's life cycle and the words under each picture. Ask: *What are those pictures? What do they show?* Ask volunteers to describe each picture using their own words. Tell students to trace the words first and then draw the arrows between the pictures. Have pairs compare their cycles and discuss any differences in their answers. Finally, check answers as a class. Discuss any other questions students might have as a class.

Extra activity

Have students get in pairs. Ask them to use their own words to explain to each other what a life cycle is. Monitor to check comprehension of the concept of a life cycle.

THAT'S PHENOMENAL!

The Tasmanian devil is a marsupial. Marsupials carry their babies in belly pouches, like kangaroos. Baby Tasmanian devils are called imps or joeys. Mothers are pregnant for about 21 days and they can give birth to 20 to 40 babies at once. At birth, the babies are about the size of a grain of rice. Because there are so many babies at once, only the few that can feed from the mother will survive. The mother carries the babies in her pouch for about four months. Tasmanian devils can reproduce from two years old onward. They only live for up to five or six years in the wild.

For the next class... OPTIONAL

Have students do the activities on page 34 in their Workbook. Refer to the Workbook Answer Key on page T111.

DIFFERENTIATED INSTRUCTION

Remediation
Explain the concepts *offspring* and *reproduction* using as many pictorial examples as you can.

Stretch
Have students work in pairs and explain the concepts *offspring* and *reproduction* to each other using their own words. Monitor and help if needed.

Learning outcome: Students will have noticed that animals can look similar or different from their parents.
Keywords: *hatch*
Resources: *Animal life cycles* projectable activity; Unit 4 song: *Do you have a pet?*; Lesson 3 worksheet; Lesson 3 *Vocabulary activity*

CONNECT

PHENOMENAL ACTIVITY

Animal life cycles

Project the *Animal life cycles* activity. Show all the pictures and have students identify the life cycle stages the pictures represent. Read the texts below each stage. After going through the stages, encourage students to recall the stages in order. Give examples of other animals that have similar life cycles. Then point out that not all the animals have the same life cycles. Examples include birds, fish, and reptiles. You can refer to the example of the frog's life cycle on page 47.

INVESTIGATE

DO YOU HAVE A PET?

Play the song. Ask: *What is the life cycle of a chicken like? What is the life cycle of a butterfly like?* Have students draw a chick hatching from an egg. Play the song again and have students sing along.

SYNTHESIZE

Read the poem out loud. Ask: *What happens after babies hatch from eggs? What happens to the young animals? What happens to the adults? How does the cycle of life continue?*

2 How are these young animals similar to their parents? How are they different? Discuss with a classmate.

Have students look at the pictures, identify the animals, and describe them in pairs. Then tell them to discuss how the young animals are similar and different to their parents. Guide the discussion so students describe the animals' body parts, size, color, and abilities.

3 Circle Yes or No.

Read the statements. Have students raise their hands to give their answer. Use their answers to check if any concept should be explained further. Tell students to circle their answers.

DEMONSTRATE

Put students into pairs. Distribute the Lesson 3 worksheet. Have students cut out the cards and put the life cycles stages in order.

MIND MAP

Have students go to page 114 in their Student Book and add information to the *life cycle* section. Elicit what they have learned about the life cycles in this lesson and write their ideas on the board while they do the same in their books. When students have completed their mind map, have them review its contents to identify and correct any mistakes.

Go to the Lesson 3 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 35 in their Workbook. Refer to the Workbook Answer Key on page T111.

DIFFERENTIATED INSTRUCTION

Remediation
Have students recall the pictures of their favorite animal as a baby and an adult. Have them say how the animal is alike and different as a baby and as an adult.

Stretch
Have students draw the life cycle of the animals mentioned in the second part of the song: chicken and butterfly.

Different Life Cycles

Some animals look similar to their parents when they're born. Others do not look similar to their parents when they're born, but they grow to look like their parents as adults.

Hooray for eggs! Hooray for babies!
Babies **hatch** from eggs.
Babies grow into young animals.
Young animals grow into adults.
They get big and strong.
Adult animals have babies.
The cycle of life goes on!

Word Box
hatch

Chicks are smaller, and they have lighter, softer feathers.

2. How are these young animals similar to their parents? How are they different? Discuss with a classmate. Possible answers:

1





2





The caterpillar is different in shape, size, and color than the butterfly.

3. Circle Yes or No.

1	All life cycles have the same number of stages.	Yes	**No**
2	All baby animals look like their parents.	Yes	**No**
3	Life cycles start with a new life.	**Yes**	No

How do we make an animal life cycle model?

STEAM

Objective:

To model and present an animal's life cycle.

Materials:

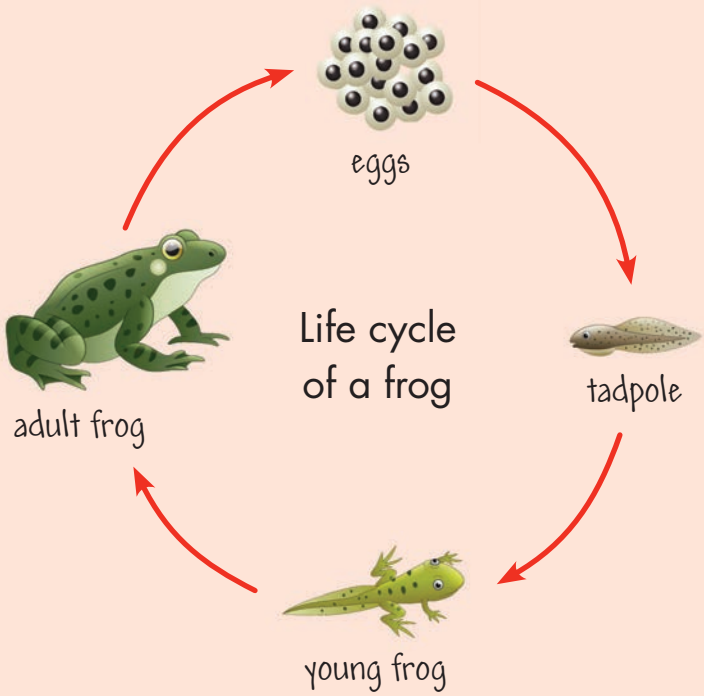

markers


cardboard paper


modeling clay

Steps:

1. In small groups, choose an animal group.
2. Investigate the life cycle stages of animals in the group.
3. Choose one animal from the group. Make a model of the animal's life cycle using modeling clay. Place it on the cardboard and label the stages.
4. Present your model to your classmates.
5. Look at your classmates' models. In your notebook, draw the animals that hatch out of eggs and the ones that are born alive.



Go Beyond...

Compare two different life cycle models. How are they similar and different?

How do we make an animal life cycle model?

Learning outcome: To model and present an animal's life cycle.
Materials: markers, cardboard paper, modeling clay
Resources: Makerspace worksheet; Unit 4 flashcards: *mammals, fish, birds, reptiles, amphibians, insects*

DEMONSTRATE

Use the Makerspace worksheet on the platform. Alternatively, photocopy the Unit 4 Makerspace worksheet on page T126.

GET IT READY

Display the Unit 4 flashcards for *mammals, fish, birds, reptiles, amphibians,* and *insects*. Review the animal groups with students. Brainstorm more examples of animals for each group. Explain to students that they will have to investigate the life cycle stages of animals in the group they are going to choose.

Read the information about the materials and the steps in the book, and have volunteers paraphrase each step.

Divide the class into small groups and ask them to choose an animal group. Make sure all animal groups are chosen.

GET IT GOING

Ask students to recall the animal life cycles they already know. Give students the tools—printed or electronic—to investigate different life cycles. Encourage them to look for life cycles that are different from the ones in their Student Book and Workbook.

Allow students enough time to do steps 2 and 3. Make sure they include the name of all the stages in their model. Monitor their work, provide help if needed, and ask questions about their findings.

GET IT DONE

Invite students to discuss their findings by sharing one thing they learned during their investigation. Conclude by reminding them that although life cycle stages can be different, they all follow the basic stages: birth, growth, reproduction, and death. Then ask groups to present their model to their classmates. Make sure the groups mention the name of the animal and the different stages.

Allow some time for students to talk about their experience while doing the project. Ask them what they found interesting, challenging, and enjoyable.

GO BEYOND

Get groups together and give them enough time to compare their life cycle models. Monitor and help if needed. Prompt them with additional questions about the similarities and differences they can see.

Learning outcome: To review animal attributes, animal groups, and animal life cycles.
Resources: Unit 4 flashcards: *mammals, fish, birds, reptiles, amphibians*; Unit 4 Self-assessment; Unit 4 Test

EVALUATE

REVIEW

Display the Unit 4 flashcards for *mammals, fish, birds, reptiles,* and *amphibians,* and have students describe the body coverings in each animal.

1 Draw the correct body covering on each animal.

Elicit the different body coverings students have learned about or know, and write them on the board. Then elicit the names of the animals in the activity and the type of body coverings they have. Have students draw the body coverings on the animals. Finally, ask students to name more examples of animals for each of the three types of body coverings.

2 Write an example for each group.

Tell students you are going to say an animal and show an animal group (use flashcards). If the animal belongs to the group shown, students stand up. If not, they remain seated. Say one or two animals per group and have students play the game. Then read the animal groups in the activity and elicit different animal names. Have students choose one and write it down.

3 Circle the animals that hatch from eggs.

Elicit the names of the animals in the pictures. Have students discuss in pairs how the babies of these animals are born. Then ask them to circle the animals that hatch from eggs. Check answers as a class.

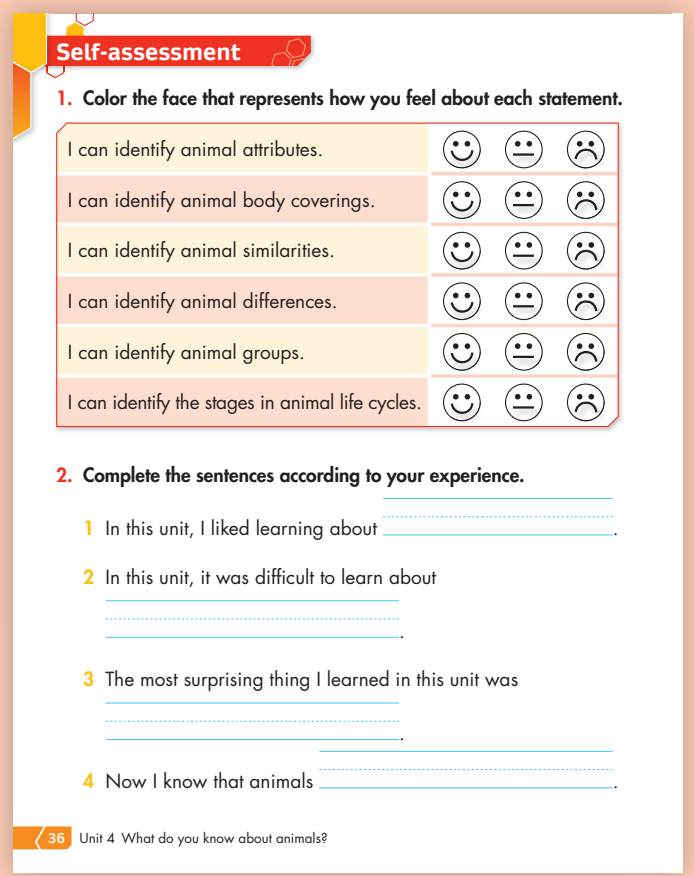
SELF-ASSESSMENT

Use the Unit 4 Self-assessment on the platform. Alternatively, have students turn to page 36 in their Workbook. Read the instructions and the self-assessment table out loud and check comprehension. Have students work on their own. Monitor their work. When students have completed their assessment, ask them to share which can-do they found easiest and which they found the hardest.

To further develop self-assessment, have students reflect on and write about what they liked to learn, what was difficult to learn, and the most surprising thing they learned. Read the sentences for them and give them time to complete each. This activity will help them reflect on their learning. Monitor and provide help if needed.

ASSESSMENT

Use the Unit 4 Test on the platform to evaluate students' performance and development. Alternatively, photocopy the Unit 4 Test from page T145.



Self-assessment

1. Color the face that represents how you feel about each statement.

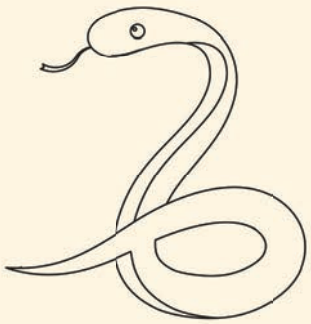
I can identify animal attributes.	☺	😐	☹
I can identify animal body coverings.	☺	😐	☹
I can identify animal similarities.	☺	😐	☹
I can identify animal differences.	☺	😐	☹
I can identify animal groups.	☺	😐	☹
I can identify the stages in animal life cycles.	☺	😐	☹

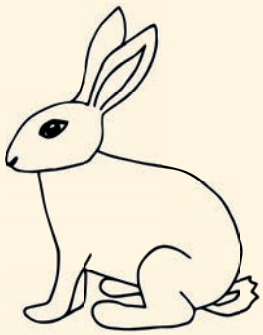
2. Complete the sentences according to your experience.

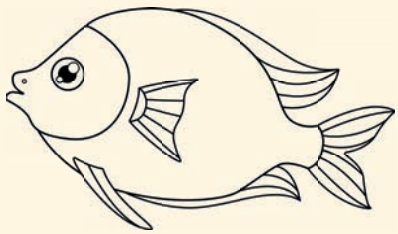
1 In this unit, I liked learning about _____.
2 In this unit, it was difficult to learn about _____.
3 The most surprising thing I learned in this unit was _____.
4 Now I know that animals _____.

36 Unit 4 What do you know about animals?

1. Draw the correct body covering on each animal.

1 

2 

3 

2. Write an example for each group. Answers may vary.

1 mammal **blue whale**

2 fish **blowfish**

3 insect **grasshopper**

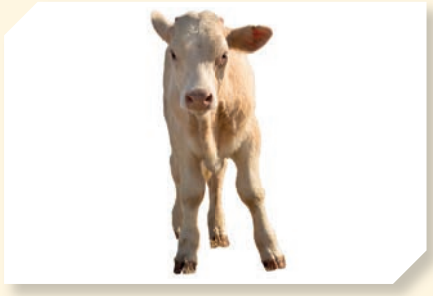
4 reptile **chameleon**

5 amphibian **salamander**

6 bird **crow**

3. Circle the animals that hatch from eggs.

1 

3 

2 

4 

How do we sense what's around us?

LEARNING OBJECTIVES

- Learn about and explore internal and external body parts and their functions.
- Recognize that some people have different abilities.
- Learn about and explore some healthy habits.
- Identify health professionals and the illnesses they treat.
- Learn about personal safety.
- Identify the five senses and the body parts associated with them.
- Construct a sensory box.

STEAM CONNECTION

- Students demonstrate curiosity about the human body.
- Students notice important body parts and different abilities.
- Students observe their senses and the body parts associated with them.
- Students experience the sense of touch.

Use the Unit 5 STEAM worksheet to work on the unit's topic connection with the subject of science.

DIGITAL RESOURCES

Phenomenal video: *How can I keep my body healthy?*

Five senses
Quest: *The Senses*
Projectable activities: *Brilliant body parts* (Lesson 1), *Looking after our bodies* (Lesson 2), *Our five senses* (Lesson 3)
Printable: Lessons worksheets
Vocabulary activities

MAKERSPACE

How can we make a sensory box?

This project can be done at the end of the unit in a single class. Students gather objects of different shapes, sizes, and textures to include in a sensory box. They notice differences between the objects using their sense of touch.
Students work in groups to do this project and evaluate three classmates on their ability to use only their sense of touch to identify an object.
Prepare kits of material per team in advance, but leave room for students to choose the materials they think they could use.

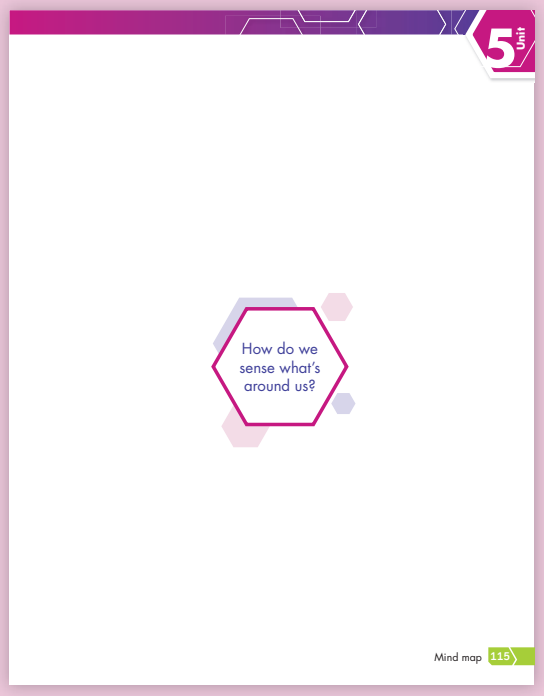
Print the Unit 5 Makerspace worksheet on the platform. Alternatively, photocopy the worksheet on page T127.

ASSESSMENT TOOLS

- Review: Student Book page 61

Self-assessment: Workbook page 44

Assessment: Unit 5 Test



FLASHCARDS

bandage, germs, glasses, hearing, hearing aid, sight, smell, taste, touch

Lessons 1, 2, and 3.







POSTER

The Unit 5 poster shows a girl eating, surrounded by different objects that stimulate the five senses. There are close-ups of the body parts associated with the five senses. The poster can be used to show and review the five senses.

Lessons 1, 3, and Makerspace project.



How do we sense what's around us?

Learning outcome: Students will have identified that the human body has many different parts.
Keywords: *internal, external*
Resources: Unit 5 Phenomenal video: *How can I keep my body healthy?*; Unit 5 video worksheet; Quest: *The senses*

CONNECT

FLIPPED LEARNING

Before class

Students watch the video before class. Give them the Unit 5 video worksheet beforehand to complete as they watch the video at home. Alternatively, you can watch the video in class.

In class

Ask students to take out their video worksheet and elicit parts of the body. Write the title of the experiment, *How can I keep my body healthy?*, on the board. Put students into small groups and have them report on their observations. Have a guided discussion about their conclusions.

Draw students' attention to the picture in their book and have volunteers describe what they see. Ask them to mention as many external body parts as they can see. Ask: *What internal body parts do you know of?* Help them with clues if needed. Read the text out loud and ask comprehension questions: *Are all human bodies the same shape and size? Do all body parts do the same thing? Can you see your internal body parts?* Have students circle the body parts mentioned in the text.

1 In your notebook, draw the part of the body for each sense. Then, in pairs, discuss their function.

Read the words for the different senses in the boxes and have students point to the body part associated with each sense. To develop the Creativity skill, tell students to draw the body part. To develop the Communication skill, put students into pairs and ask them to discuss the function of each body part. Monitor and help if needed. Ask volunteers to share their answers with the rest of the class.

QUEST The senses

Go to the *Quest* activity on the platform. Project the picture of the boy. Have some volunteers come to the front and identify and point at different body parts (*head, face, eyes, ears, nose, mouth, lips, teeth, tongue, hair,* etc.). Elicit the function of each part. Then say one part of the face and elicit healthy habits related to each; for example, *face–wash your face, teeth–brush your teeth, hair-brush your hair*, etc. Finally, have volunteers identify and label the five senses in the picture. Accept all logical answers.

MIND MAP

Start a mind map on the board. Have students go to page 115 in their Student Book and read the title question of this unit at the center of the mind map. Add the concepts *body parts*, *healthy habits*, and *senses* around the map.

Unit 5

How do we sense what's around us?

The human body has many parts. They are different in size and shape. Each part of the body has a special job to do. They help us do different things like study and play.

Word Box
internal
external

Internal body parts are inside our bodies and we cannot see them. Examples of internal body parts include the brain and the heart. **External** body parts are on the outside of our bodies, like our ears and nose. We can see them.

1. In your notebook, draw the part of the body for each sense. Then, in pairs, discuss their function.

sight — eyes
hearing — ears
taste — mouth
touch — hands
smell — nose



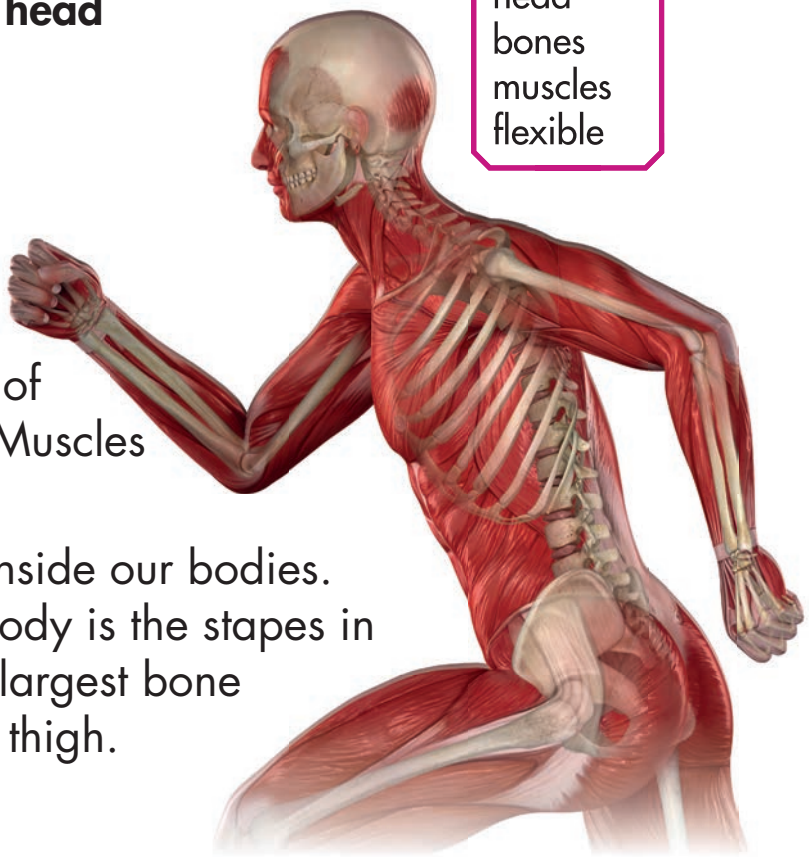
What are my body parts?

Our **brain** perceives the world around us. It is the control center for all of our other body parts. The **skull** in our **head** protects our brain.

Word Box
brain
skull
head
bones
muscles
flexible

Bones and Muscles

There are 206 **bones** and over 600 **muscles** in our body. Bones are the hard parts of the skeleton of vertebrate animals, like humans. Muscles are the soft, **flexible** parts.



X-rays allow us to see the bones inside our bodies. The smallest bone in the human body is the stapes in the ear. It is only 3 mm long. The largest bone in an adult is the femur inside the thigh. It can grow to 48 cm.

1. Underline the correct words to complete the sentences.

1 The smallest bone is the **skull** / **stapes**.

2 **Bones** / **Muscles** are flexible, and we have 600 of them.

3 The **brain** / **skull** is protected by the **brain** / **skull**.

4 **Bones** / **Muscles** are really hard, and we have 206 of them.



What are my body parts?

Learning outcome: Students will have identified some internal body parts like bones and muscles.
Keywords: *brain, skull, head, bones, muscles, flexible*
Materials: picture of a human skeleton and picture of muscles in the human body

CONNECT

Give students one minute to write as many body parts as they can remember in their notebook. To check, have students say the names of body parts out loud. Write them on the board so that they can check spelling and correct their lists. Invite students to touch their arms, hands, fingers, legs, and knees and explain how it feels. The objective is for them to realize that there are hard parts and soft parts. Guide the discussion as needed for them to come to this conclusion. Prompt them with questions such as: *Have you ever fallen off a bike? What happened to your skin, legs, hands, or other body parts?* Have students reflect on how we might get bruises, cuts, and scrapes, and how we sometimes bleed.

INVESTIGATE

Show or project the picture of a human skeleton. Elicit the words *skeleton* and *bones*. Point to different parts of the skeleton and ask students to name the corresponding external body part (hand, fingers, leg, knee, etc.). Help them if needed. Then show or project the picture of muscles in the human body. Ask: *Do you know what these are?* Help them with the answer if needed.

SYNTHESIZE

Read the text out loud. Ask students to read the words in the word box. Elicit what they are. Ask comprehension questions, such as: *Which organ acts as the control center for the rest of the body parts? Are bones hard or soft? What about muscles? How many bones are there in the human body? How many muscles does a person have? Where is the smallest bone in the human body? And the largest? How can we see the bones inside our bodies?*

1 Underline the correct words to complete the sentences.

Read the statements in the form of a question. Example: *Which is the smallest bone in the human body?* Have students give the answer. Allow them to reread the text if they do not remember all the information. Then have them underline the correct answers.

DIFFERENTIATED INSTRUCTION

Remediation

Have students name their body parts. Help them with internal body parts if needed.

Stretch

Review the meaning of the term *vertebrate* and how it relates to the skeleton.

Learning outcome: Students will have identified several external body parts and their functions as well as learned about people with different abilities.
Keywords: *arms, legs, hands, feet, prosthetic*
Resources: *Brilliant body parts* projectable activity; Unit 5 song: *Five senses*; Unit 5 flashcards: *hearing aid, glasses;* Unit 5 poster

INVESTIGATE

PHENOMENAL ACTIVITY

Brilliant body parts

Project the *Brilliant body parts* activity on the board. Read the text and the questions. Have students discuss in groups of three. Then ask them to share their answers with the rest of the class. Prompt with additional questions, such as: *Why and how can we move our bodies and different body parts?*

FIVE SENSES

Tell students they are going to listen to a song about the five senses. Elicit what the five senses are. Play the song once and have students listen. Ask: *What words did you recognize? Which body parts did you hear in the song? Do you remember how the chorus goes?* Play the song a second time and have students sing along. Go to page T167 to see the activity suggested.

SYNTHESIZE

Read the text out loud. Ask students to read the words in the word box. Elicit their meaning. Direct students' attention to the pictures on the page as you ask questions. Finally, ask students to circle the body parts and the actions we can do with those parts in the text. Ask them to underline what people with different abilities use to move. Display the flashcards for *hearing aid* and *glasses* and say the words. Ask students with glasses: *What happens if you take off your glasses?* Encourage the rest of the class to be respectful. Display the Unit 5 poster and have students point to the glasses and the hearing aid.

2 In pairs, take turns blindfolding each other and walking around the classroom. How well can you walk?

Start the activity by explaining that students will now put themselves in other people's shoes. Explain that they will have to walk blindfolded around the classroom. Ask students to predict how easy or difficult they will find the activity. When students are done, check to see if they were correct or not in their predictions. Finally, ask volunteers to share their conclusions with the rest of the class.

3 Match the body part to the activity.

Read the body parts and the activities listed. Have students complete the activity individually. Check answers as a class.

For the next class... OPTIONAL

Have students do the activities on page 38 in their Workbook. Refer to the Workbook Answer Key on page T111.

DIFFERENTIATED INSTRUCTION

Remediation

Assign each student one body part and ask them to brainstorm activities we can do with that body part. You may also want to help students understand the concept of *prosthetics*. Explain that some people are born without a limb or lose a limb because of illness or accident, and that prosthetics help them by replacing the missing limb or body part.

Stretch

Assign each student three body parts and ask them to write a list of five activities we can do per body part.

Important Body Parts

Word Box
arms
legs
hands
feet
prosthetic

Our external body parts move with the help of bones and muscles inside of them.

With our **arms**, we can hug, swim, and throw a ball. With our **legs**, we can jump, run, and ride a bike. With our **hands**, we can wave hello, hold a pencil, and draw. With our **feet**, we can walk, dance, and kick a soccer ball.



Different Abilities



Some people may have extra, missing, or different body parts. They may have been born that way, or they may have lost a limb because of an accident or illness. People with different abilities use **prosthetic** body parts, canes, walkers, or wheelchairs to move.

2. In pairs, take turns blindfolding each other and walking around the classroom. How well can you walk? Students' own answers.

3. Match the body part to the activity.

1	arm	a	jump and dance
2	leg	b	run and kick sand
3	hand	c	paint and hold a glass
4	foot	d	play volleyball and throw a frisbee

Our Mouth

Our **mouth** is an essential part of our body. Inside our mouth, our **teeth** and **tongue** help us chew and taste food. With our mouth, we can talk, smile, and sing.

Two sets of teeth grow in our lifetime: baby (milk) teeth and permanent teeth. Baby teeth fall out when we are children and our permanent teeth grow in their place.

Some people wear braces to straighten their teeth.

Word Box

mouth
teeth
tongue

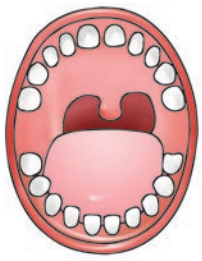
4. Have you ever lost a tooth? What happened? Discuss with a classmate. Students' own answers.

5. Underline the correct sentence.

1 Teeth are not important.

2 Teeth help us chew food.

3 Babies have permanent teeth.



An infant has 20 milk teeth.



An adult has 32 permanent teeth.

Learning outcome: Students will have learned how essential the human mouth is.
Keywords: *mouth, teeth, tongue*
Resources: Lesson 1 worksheet; Workbook (optional); Lesson 1 *Vocabulary activity*

INVESTIGATE

Ask students to say what their favorite food is. Ask: *How does it taste? Is it sweet like candy or cake? Is it savory like chicken?* Have them discuss their favorite foods in small groups. Then ask them to say what babies eat. Ask: *Why do you think they only drink milk or eat soft purees?* If needed, help students come to the realization that babies do not have teeth.

SYNTHESIZE

Read the text together. Ask students to read the words in the word box. Elicit their meaning. Ask comprehension questions: *What is inside our mouth? How many sets of teeth do we grow in our lifetime?* Distribute one Lesson 1 worksheet per pair and give students time to complete it. Make sure that students include internal and external parts. When they finish, ask pairs to join another pair (to form a group of four) to compare their labels.

4 Have you ever lost a tooth? What happened? Discuss with a classmate.
Start by telling students that it is normal for children to lose their teeth. Ask if any student has lost a tooth and have them tell about their experience. You can have them discuss in groups of four or five students (depending on how many students have actually lost a tooth) or you can share as a class.

5 Underline the correct sentence.
Read the sentences out loud and have students say which one is correct. Ask them to explain why the other two sentences are wrong and to give the right information. Then tell them to underline the sentence that is correct.

Extra activity OPTIONAL

Have students turn to Activity 6 on page 39 in their Workbook. Read the body parts out loud and have students brainstorm different activities. Do not write them on the board. Then tell students to complete the activity by writing two activities per body part. Monitor and check spelling. Finally, ask students to choose one of the activities they wrote and make a drawing to illustrate it in their notebook.

DEMONSTRATE

MIND MAP

Have students go to page 115 in their Student Book and add information to the *body parts* section. Elicit what they have learned about internal and external body parts in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 1 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the remaining activities on page 39 of their Workbook. Refer to the Workbook Answer Key on page T111.

DIFFERENTIATED INSTRUCTION

Remediation
Have students make a list of all the body parts they have learned in Lesson 1. Then ask them to mark each body part as internal or external.

Stretch
Have students create a T-chart and complete it with additional internal and external body parts.

What are healthy habits?

Learning outcome: Students will have identified different types of doctors and what they treat.
Keywords: *accident, illness, dentist, nurse, doctor, ophthalmologist*
Resources: *Looking after our bodies* projectable activity, Lesson 2 worksheet

CONNECT

PHENOMENAL ACTIVITY

Looking after our bodies
Project the *Looking after our bodies* activity on the board. Have students describe the pictures and guess the type of doctor each one represents. Read the texts. As you read, explain the difference between an optician and an ophthalmologist. Tell students that we can also take care of our bodies, not just doctors. Have them brainstorm ways in which they can take care of their bodies.

SYNTHESIZE

Direct students' attention to the picture on the page and ask them to describe what is happening. Read the text about health and doctors. Ask students to read the words in the word box. Elicit their meaning. They can also check the glossary page. Ask comprehension questions: *Why do you visit a doctor? Which doctor looks after your teeth?* Repeat with the other doctors mentioned in the text. Finally, have students circle the words for types of doctors. Additionally, you can ask students to name other types of doctors. Ask: *What type of doctor only treats babies?*

1 In pairs, discuss which health professionals you have visited.
To develop the Communication skill, put students into pairs and have them share which health professionals they have visited. Then brainstorm the different doctors they know, together with which body part they treat and look after. Write the information on the board.

2 Circle True or False.
Read the sentences out loud. Have students say if they are true or false and explain their answer. Then have them circle True or False in their books.

Forming Conclusions To develop the Forming Conclusions skill, start the activity by reminding students of the importance of taking care of our bodies and going to the doctor when necessary. Then ask: *What would happen if you didn't [name the actions they mentioned in the Connect activity]?* Have them discuss in groups of four and write three consequences. Then have groups share the consequences they wrote with the rest of the class.

For the next class... OPTIONAL

Have students do Activity 1 on page 40 in their Workbook. Refer to the Workbook Answer Key on page T111.

DIFFERENTIATED INSTRUCTION

Remediation
Have students play Charades using the vocabulary for types of doctors.

Stretch
Have students get in pairs. Ask them to take turns saying the types of doctors and spelling the words.

Lesson 2

What are healthy habits?



Health professionals keep us healthy. We see them for regular health checks or if we have an **accident** or **illness**.

- A **dentist** checks and cleans our teeth.
- A **nurse** takes our temperature and gives us shots.
- A **doctor** checks our bodies and prescribes us medicine when we have an illness.
- An **ophthalmologist** checks our eyes.

Word Box

accident
illness
dentist
nurse
doctor
ophthalmologist

1. In pairs, discuss which health professionals you have visited.

Students' own answers.

2. Circle True or False.

1	A dentist checks your eyes.	True	**False**
2	A nurse takes your temperature.	**True**	False
3	A doctor checks your teeth.	True	**False**
4	An ophthalmologist checks your eyes.	**True**	False

I'm Not Well

We all get sick. When we **cough** and **sneeze**, we spread **germs**. Germs are very tiny organisms that can make us sick.

Here's how to stay healthy:

- Eat well and drink water.
- Wash your hands regularly for at least 20 seconds.
- Use soap to get rid of germs.

Word Box

cough
sneeze
germs
heal
bandage



Healing Powers

Our skin is amazing. If you have a small cut, it can **heal** itself. Wash the cut under running water and put a **bandage** over it. However, if it's a very big cut and you're bleeding badly, you need to see a doctor.

If you break a bone, a doctor will take an X-ray. You might need to wear a cast while the bone heals.





3. In pairs, discuss what you do when you have these health problems. Students' own answers.

a cold | stomachache | small cut | cough

Learning outcome: Students will have learned what to do when they get sick and what to do if they have a cut on their skin.
Keywords: *cough, sneeze, germs, heal, bandage*
Resources: Unit 5 flashcards: *bandage, germs*

CONNECT

Ask students if they have ever had a cold or the flu. Elicit common symptoms (fever, chills, cough, sore throat, runny or stuffy nose, sneezing, body aches, tiredness, etc.) and write them on the board. Provide help if needed. When the list is done, tell students to copy it into their notebooks. Then ask: *What can you do to keep healthy?* Elicit and validate correct answers.

INVESTIGATE

Display the Unit 5 flashcards for *bandage* and *germs* and say the words. Elicit what germs are. Tell students they can check the glossary page for a definition. Give students one minute to say what they can use a bandage for. Ask them to be specific and help them if needed (to cover a wound, after surgery, to reduce swelling, to protect an open wound or a big scratch, to provide support for a sprained ankle). To check comprehension of the vocabulary, ask: *Can you put a bandage on an internal body part? Can germs affect external body parts?*

SYNTHESIZE

Read the texts about illness and healing. Ask comprehension questions: *Do only kids get sick? What can we do to stay healthy? In what way is our skin amazing? What should we do if we have a small cut? How about if we have a big cut? What should we do if we break a bone?* Finally, have students circle important words in the text.

3 In pairs, discuss what you do when you have these health problems.

Read the question out loud. Have volunteers read the words in the boxes. Then ask students to get into pairs to discuss what they do when they have each of the health problems listed in the boxes. Monitor and help if needed. Prompt with additional questions depending on what students are discussing.

THAT'S PHENOMENAL!

Germs are small and that is why we do not see or notice when they get into our bodies. In fact, they are so tiny that we need a microscope to see them. A microscope is very useful for doctors and scientists to learn about particles that we cannot see with the naked eye.

Extra activity

Explain the concept of a first aid kit and ask students if they have one at home. Have them think about what items a first aid kit should have. Write them on the board.

For the next class... OPTIONAL

Have students do Activities 2 and 3 on page 40 in their Workbook. Refer to the Workbook Answer Key on page T111. Ask students to bring one item they would include in a first aid kit. Have them bring bandages, individually packed gauze dressings, sticky tape, gloves, or alcohol-free cleaning wipes.

DIFFERENTIATED INSTRUCTION

Remediation
Have students play Charades to review flu symptoms.

Stretch
Have students research the names of illnesses spread by germs. You can do this as a class or have students work in groups of four.

Learning outcome: Students will have learned how to play safely and what kind of protection to use in case an accident happens.
Keywords: *helmets, knee pads, life jacket, sunscreen*
Materials: items to include in a first aid kit
Resources: Lesson 2 worksheet; Lesson 2 *Vocabulary activity*

CONNECT

Organize students into groups of four. Have them take out their first aid kit item and place them on your desk. For each item, ask: *What would you use a [name item] for?* Put together a very simple classroom first aid kit or add what students brought to an existing one. Have students draw the classroom first aid kit with all its items and label them.

INVESTIGATE

In new groups of four, have students discuss what physical activities or sports they like to do. After the discussion, elicit answers and write them on the board. Have students look at the complete list on the board and talk about accidents that could happen while playing those sports or doing those activities (falling over and scraping your knee, hitting a friend with a ball, getting a bruise, etc.).

SYNTHESIZE

Read the texts. Have students read the words in the word box and check if they know what the items are. Finally, tell students to circle the different safety items mentioned in the texts.

4 Circle the pictures that show children playing safely. Then discuss your reasons with the rest of the class.
Have students look at the pictures and describe them. Ask: *Do you think the child in picture [1, 2, 3] is playing safely?* Have students go back to the list of physical activities they mentioned at the beginning of the class and describe how they could stay safe while doing these activities.

5 Do you wear sunscreen? Do you wear sunglasses? When? Discuss with a classmate.
Elicit the meaning of the word *sunscreen*. Direct students to the glossary page if they are unsure. Read the questions and have students discuss in pairs. Monitor and help if needed.

Put students into pairs. Distribute one Lesson 2 worksheet per pair. Have them match the type of activity with the type of protection needed to play safely. Monitor and provide help, if needed. Check answers as a class.

DEMONSTRATE

MIND MAP

Have students go to page 115 in their Student Book and add information to the *healthy habits* section. Elicit what they have learned about staying healthy in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 2 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 41 in their Workbook. Refer to the Workbook Answer Key on page T111.

DIFFERENTIATED INSTRUCTION

Remediation
Have students draw the words in the word box and label them.

Stretch
Have students brainstorm additional safety items (goggles, gloves, special work boots, etc.)

Play Safely

Accidents can happen when you're playing. **Helmets** and **knee pads** can protect you if you fall. When you're on a boat, wear a **life jacket**. If you fall in the water, it will help you stay afloat.

Word Box

helmets
knee pads
life jacket
sunscreen



4. Circle the pictures that show children playing safely. Then discuss your reasons with the rest of the class.

1 

2 

3 

Sun Safety

Our skin and eyes need protection from the sun. Sunglasses protect our eyes when it's sunny. **Sunscreen** is a lotion that prevents sunburn.

5. Do you wear sunscreen? Do you wear sunglasses? When? Discuss with a classmate. Students' own answers.

Lesson 3

What are the five senses?

Our Five Senses

Word Box
smell
touch
taste
hearing
sight

Humans have five senses: **smell**, **touch**, **taste**, **hearing**, and **sight**. Senses help us know and understand what is going on in the world we live in.

Using our noses, we can smell pleasant and unpleasant smells.

We taste with our mouth and tongue. We can sense bitter, sweet, salty, savory, and sour tastes. Our nose helps us perceive the sense of taste better.

We experience our sense of touch through our skin. We can feel if an object is soft, smooth, prickly, or sharp. Our skin can also detect hot and cold objects.



1. **What smells do you like? What smells do you dislike? Make a list in your notebook.** Students' own answers.

2. **In pairs, discuss whether food tastes good when you are sick.** Students' own answers.

3. **In pairs, walk around your classroom. Find and name an object that matches the descriptions below.** Answers may vary.

soft | smooth | prickly | sharp

What are the five senses?

Learning outcome: Students will have learned what the five senses are and how they help us.
Keywords: *smell, touch, taste, hearing, sight*
Materials: 5 big sheets of white cardboard; 2 or 3 objects per category: soft, smooth, prickly, and sharp
Resources: Unit 5 song: *Five senses*; Unit 5 flashcards: *smell, touch, taste, hearing, sight;* Lesson 3 worksheet

CONNECT

FIVE SENSES

Before you play the song, ask students if they remember the chorus. Have volunteers sing the chorus in unison. Then ask: *Which are the five senses?* Play the song once for students to check if they remembered correctly. They can sing along, but ask them to pay attention to the words.

INVESTIGATE

Display the flashcards for *smell, touch, taste, hearing*, and *sight* and review the words. Divide the class into five groups and assign each group one of the five senses. Give out one big sheet of cardboard per group. Play the Unit 5 song again and ask students to draw what the song says for the assigned sense. Monitor and help if needed.

SYNTHESIZE

Read the text about our five senses. Read the words in the word box and have students point to the body part they use for each sense. Ask comprehension questions.

1 What smells do you like? What smells do you dislike? Make a list in your notebook.
Read the questions out loud. You can have students discuss in pairs or do it as a class. To help students, tell them to think about all the places they have been to and the different smells that are there: the street, the park, a restaurant, near a dumpster, etc. Have them make a list of smells they have come across in each of these locations. Monitor and help if needed.

2 In pairs, discuss whether food tastes good when you are sick.
To develop the Communication skill, start the activity by pairing students up. Read the instruction out loud and give them a few minutes to discuss and come to a conclusion or a hypothesis about why you can't taste food very well when you are sick.

3 In pairs, walk around your classroom. Find and name an object that matches the descriptions below.
Read the instructions out loud. Encourage students to look around at the different objects in the classroom first. Then have students approach the objects and check if they are soft, smooth, prickly, or sharp. Before the activity, make sure there are at least two or three objects per category in the classroom.

For the next class... OPTIONAL

Have students do the activities on page 42 in their Workbook. Refer to the Workbook Answer Key on page T111. Also, distribute one Lesson 3 worksheet per student and assign it as homework.

DIFFERENTIATED INSTRUCTION

Remediation

To review the senses, have students recall a time when they smelled something pleasant and something unpleasant, and have them tell the story to a classmate. Do the same for taste and touch.

Stretch

Have students make several lists to further explore the topic: pleasant smells; unpleasant smells; bitter, sweet, salty, savory, and sour tastes; additional soft, smooth, prickly, and sharp objects.

Learning outcome: Students will have understood the importance of the sense of hearing and sight.
Keywords: *sound, vision, sight*
Resources: *Our five senses* projectable activity; Lesson 3 worksheet; Unit 5 poster, Unit 5 flashcards: *glasses, hearing aid*; Lesson 3 *Vocabulary activity*

CONNECT

PHENOMENAL ACTIVITY

Our five senses

Project the *Our five senses* activity on the board. Have students look carefully at all the pictures. Ask them to describe one picture first and then discuss which sense it represents and why. Repeat with every picture. Read the questions one at a time and have students discuss in pairs. Finally, read the fun facts on the page and ask students what they think about them.

INVESTIGATE

Have students share their Lesson 3 worksheet and read the poem to a classmate. Then display the Unit 5 poster. Direct students' attention to all the objects in the picture. Ask them to say which senses the girl is (or might be) using and how.

SYNTHESIZE

Read the text about hearing. Ask students to read the word in the word box. Then elicit the meaning of the word. Ask comprehension questions.

4 Listen to the sounds around you. What do you hear? Are these sounds pleasant or unpleasant?

Read the questions together. Open the classroom windows if possible. If no sounds can be heard, ask students to recall the sounds they hear at home in the morning and in the evening, or the sounds they hear on their way to school. Ask them which sounds are pleasant and which sounds are unpleasant. Have them give reasons for their answers.

Read the text about sight. Ask comprehension questions: *What do you call the sense of vision? What can your eyes perceive, or see? What are glasses for?*

5 Is the hot air balloon near or far? What colors are on it? What shape is it?

Read the questions and have students discuss in pairs.

Extra activity

Display the *glasses* and *hearing aid* flashcards. Have students say the words. Then discuss as a class what those items are for and how they are related to the senses.

DEMONSTRATE

MIND MAP

Have students go to page 115 in their Student Book and add information to the *senses* section. Elicit what they have learned about the five senses in this lesson and write their ideas on the board while they do the same in their books. When students have completed their mind map, have them review its contents to identify and correct any mistakes.

Go to the Lesson 3 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 43 in their Workbook. Refer to the Workbook Answer Key on page T111.

DIFFERENTIATED INSTRUCTION

Remediation

Have students create their own flashcards for the five senses.

Stretch

Have students make a list of things that can be experienced with each sense that were not mentioned in the unit.

Can you hear me?

Word Box
sound

Our ears help us hear what is happening around us. **Sound** enters through our ears. Sounds can be loud or quiet. People who have problems with their hearing use a hearing aid.



A whisper is quiet.



A scream is loud.

4. Listen to the sounds around you. What do you hear? Are these sounds pleasant or unpleasant? Students' own answers.

What can you see?

Your sense of **vision** is called **sight**. Your eyes and brain perceive colors, shapes, sizes, and distance. People wear glasses to improve their vision.

Word Box
vision
sight

5. Is the hot air balloon near or far? What colors are on it? What shape is it?



The hot air balloon is far. It is blue/purple, orange, and red. It is a pear/tear shape.

How can we make a sensory box?

STEAM

Objective:

To learn about and experience the different senses.

Materials:



cardboard box



collection of objects

Steps:

1. Choose five objects with different shapes, sizes, and textures, and place them in the box.
2. In your notebook, complete the table with the names of each object and the names of three classmates.
3. Have your classmates reach into the box without looking and guess what each object is. Record their responses in your table.

Go Beyond...

Discuss which items your classmates got correct and which ones they did not. Why do you think some were correct and some were not?

object	player 1	player 2	player 3
1			
2			
3			
4			
5			

How can we make a sensory box?

Learning outcome: To learn about and experience the different senses.
Materials: cardboard box, collection of objects
Resources: Makerspace worksheet; Unit 5 poster

DEMONSTRATE

Use the Makerspace worksheet on the platform. Alternatively, photocopy the Unit 5 Makerspace worksheet on page T127.

GET IT READY

Display the Unit 5 poster and have students say the objects they can see, as well as their size, shape, and texture. Review any other objects you may have in the classroom with textures different to those on the poster. Explain to students that they will learn about and experience the different senses by creating a sensory box. Elicit what a sensory box is. Read the information about the materials and the steps in the book and have some volunteers paraphrase each step.
Divide the class into small groups. Have each group gather the materials they will need. Give them the opportunity to choose the materials that they think might be helpful.

GET IT GOING

Ask students to look at the table and write the names of the objects and the names of three classmates from a different group.
Allow students enough time to do the activity and complete the table in their books. Ask them to first describe the object and then guess its name. Monitor their work, provide help if needed, and ask questions about their findings.

GET IT DONE

Gather students in a circle to have a discussion to conclude the sensory experience practice. Invite them to discuss their findings.

Encourage students to discuss their experience doing the project. Ask: *Did you find it easy or difficult to describe the objects? Could you easily guess what it was? How did you find the sensory experience? Did you like touching different textures without knowing what you were touching?* Then have them share how their classmates did by reporting on the results in the table.
Finally, ask students what they found interesting, challenging, and enjoyable about the project.

GO BEYOND

In their groups, ask them to analyze the results in the table. Read the questions in the Go Beyond box and have them analyze the characteristics of the objects that were both easy and difficult to guess. Ask: *What made [name of object] easy to guess? What made [name of object] difficult to guess?* Monitor and help if needed. Prompt with additional questions if students find it hard to analyze the information.

Objective: To review body parts, what we can do with body parts, healthy habits, and our five senses.
Resources: Unit 5 Self-assessment; Unit 5 Test

EVALUATE

REVIEW

1 Complete the sentences with words from the box.
Have volunteers read the words in the box. Then have them read the sentences individually and complete them with the correct word. Check answers as a class.

2 Check (✓) the healthy habits. Cross out (✗) the unhealthy habits.
Have students look at the pictures and describe them in pairs. Then ask them to work individually to check the healthy habits and cross out the unhealthy habits.

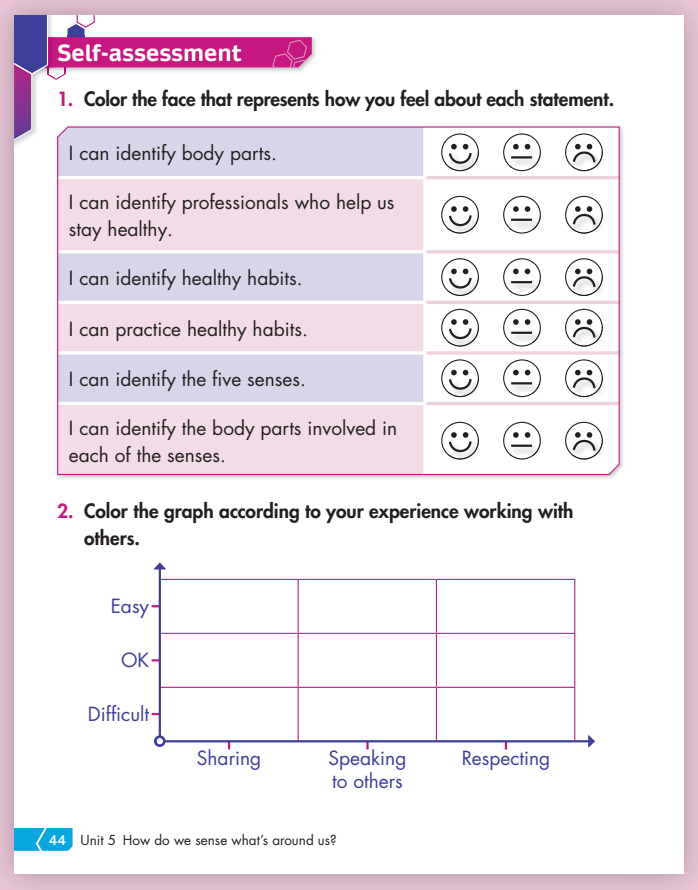
3 Match the sense with the part of the body.
Have volunteers read the words for the five senses one by one. Then ask the rest of the class to say which body part is responsible for the sense mentioned. Finally, have students match the sense to the corresponding body part on the girl.

SELF-ASSESSMENT

Use the Unit 5 Self-assessment on the platform. Alternatively, have students turn to page 44 in the Workbook. Read the instructions and the self-assessment table out loud and check comprehension. Have students work on their own. Monitor their work. When students finish completing the table, ask them to share what they liked the most about the unit and what they enjoyed learning. If any volunteers are comfortable with it, they can also share what confused them the most or where they feel they need more work.

The graph diagram focuses on the Communication skill. Explain what *sharing*, *speaking to others*, and *respecting* means and elicit examples of good communication. Then ask them to reflect and decide if it was easy or difficult for them to communicate effectively. Have them color the graph according to their experience.

Use the Unit 5 Test on the platform to evaluate students' performance and development. Alternatively, photocopy the Unit 5 Test from page T146.



Self-assessment

1. **Color the face that represents how you feel about each statement.**

I can identify body parts.	☺ 😐 ☹
I can identify professionals who help us stay healthy.	☺ 😐 ☹
I can identify healthy habits.	☺ 😐 ☹
I can practice healthy habits.	☺ 😐 ☹
I can identify the five senses.	☺ 😐 ☹
I can identify the body parts involved in each of the senses.	☺ 😐 ☹

2. **Color the graph according to your experience working with others.**

44 Unit 5 How do we sense what's around us?

1. Complete the sentences with words from the box.

arms	legs	fingers	feet

1 We use our **feet** to kick a ball.

2 We use our **arms** to hug a friend.

3 We use our **fingers** to hold a pencil.

4 We use our **legs** to jump obstacles.

2. Check (✓) the healthy habits. Cross out (×) the unhealthy habits.

1 

✓

2 

×

3 

✓

4 

✓

3. Match the sense with the part of the body.

1 sight

2 smell

3 touch

4 taste

5 hearing



How is the weather related to the seasons?

LEARNING OBJECTIVES

- Notice the relationship between the weather and the kinds of activities people do and clothes people wear.
- Identify the seasons and their characteristics.
- Learn about how weather can be measured and reported.
- Identify weather instruments.
- Notice how to measure time within a day, a week, a month, and a year.

STEAM CONNECTION

- Students notice changes in the weather through the seasons.
- Students demonstrate curiosity about the weather and how it affects our lives.
- Students reflect on different ways to measure time.

Use the Unit 6 STEAM worksheet to work on the unit's topic connection with the subject of science.

DIGITAL RESOURCES

Phenomenal video: *Sun, Earth, and time*

What's the weather like?
Quest: *Weather and seasons of the world*
Projectable activities: *Spot the season!* (Lesson 1), *Recording weather* (Lesson 2), *Day length* (Lesson 3)
Video: *Changing seasons* (Lesson 1)
Printable: Lessons worksheets
Vocabulary activities

MAKERSPACE

What is the weather like?

This project can be done at the end of the unit in a single class. Students build a thermometer using everyday materials.
Students work in pairs. Allow some discussion time at the end so that students can reflect and predict what will happen if they do not use hot water.
Prepare kits of material per pair in advance, but leave room for students to choose the materials they think they could use.

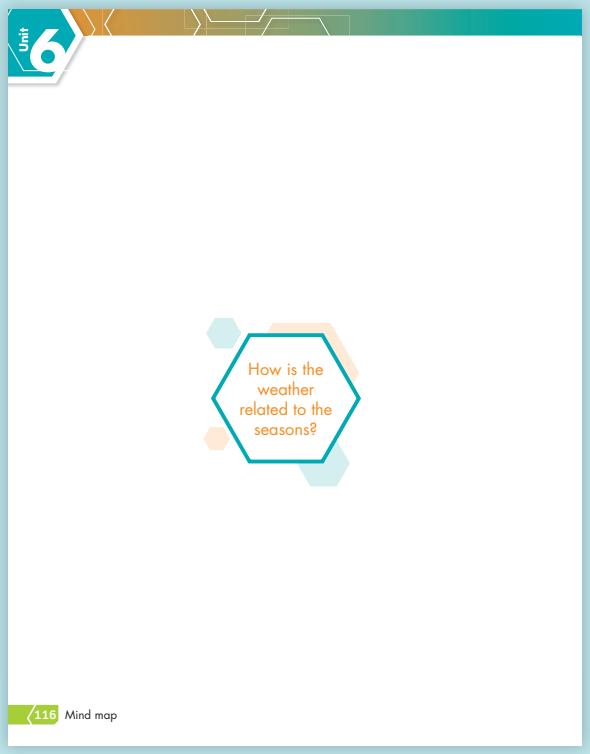
Print the Unit 6 Makerspace worksheet on the platform. Alternatively, photocopy the worksheet on page T128.

ASSESSMENT TOOLS

- Review: Student Book page 73

Self-assessment: Workbook page 52

Assessment: Unit 6 Test



FLASHCARDS

afternoon, calendar, evening, morning, night, seasons, sunrise, sunset, temperature

Lessons 1, 2, 3, and Assessment.



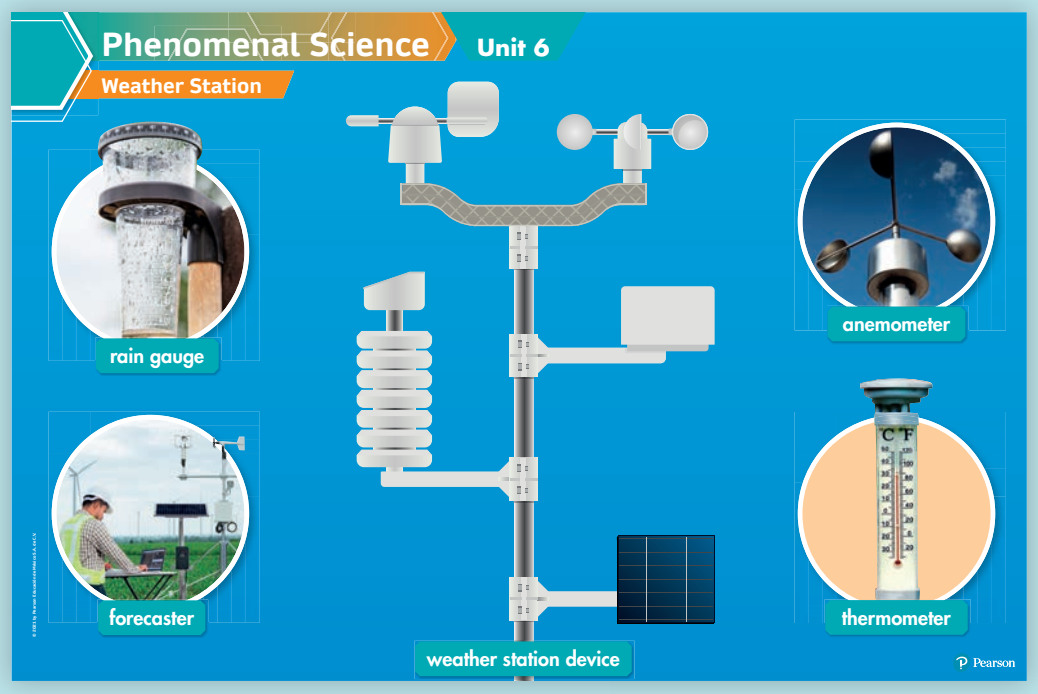




POSTER

The Unit 6 poster shows devices that can be found at a weather station: an anemometer, a rain gauge, and a thermometer. It also shows a forecaster at work forecasting the weather. The poster can be used to show different aspects of weather that can be measured and the tools used for each.

Lesson 2 and Assessment.



How is the weather related to the seasons?

Learning outcome: Students will have identified different parts of the day and other calendar divisions like months and years.
Keywords: *days, nights, months, years*
Resources: Unit 6 Phenomenal video: *Sun, Earth, and time;* Unit 6 video worksheet; Quest: *Weather and seasons of the world*

CONNECT

FLIPPED LEARNING

Before class
Students watch the video before class. Give them the Unit 6 video worksheet beforehand to complete as they watch the video at home. Alternatively, you could watch the video in class.

In class
Ask students to take out their video worksheet and elicit what the symbols mean. Write the title of the experiment, *Sun dial*, on the board, and then write *Materials* below the text. Have a volunteer read the hypothesis. Then elicit the materials used. Put students into small groups and have them report on their observations. Have a guided discussion about the results and the conclusion.

QUEST Weather and seasons of the world

Go to the *Quest* activity on the platform. Play the video. Show only the following segments: 00:00 to 00:21 (general weather information), 02:09 to 02:50 (how weather affects what we do and wear), and 03:56 to the end (conclusion). After each video question, stop the video and have students answer. You can also ask additional comprehension questions.

Draw students' attention to the picture in their book and have volunteers describe what they see. Read the text out loud and ask comprehension questions: *What are some common time divisions? How do we decide what to wear and what activities to do?* Have students circle the time divisions they see in the text (*morning* and *evening*).

1 Circle True or False.

Ask students to cover the text. Read the sentences as a class and have students circle their answers from memory. Then tell them to reread the text in pairs to check their answers. Additionally, ask: *What part of the day do you prefer? Why?* Have students discuss their preferences in groups of three.

2 Ask five classmates: "What is your favorite type of weather?" Use their answers to create a graph in your notebook.

Elicit what a graph is. Alternatively, you can draw a graph on the board and elicit the word. Read the instructions and have one or two students paraphrase it to make sure they understand. If necessary, show students how to record their information in their graph.

MIND MAP

Start a mind map on the board. Have students go to page 116 in their Student Book and read the title question of this unit at the center of the mind map. Add the concepts *seasons and weather, measuring weather,* and *days* around the map.

For the next class...

Ask students to draw their favorite weather and their favorite activities to do during that weather.

Unit 6

How is the weather related to the seasons?

Our lives are measured by **days**, **nights**, **months**, and **years**. Some people love mornings, and some people like evenings. We do things, like go to school, eat, play, and sleep, at certain times of the day.

Word Box
days
nights
months
years

We decide what to wear and what activities to do based on the weather. Some people enjoy warm weather, while others enjoy cool weather.

1. Circle True or False.

1 Everyone likes mornings. True **False**

2 Some people love evenings. **True** False

3 We dress according to the weather. **True** False

2. Ask five classmates: "What is your favorite type of weather?" Use their answers to create a graph in your notebook.

Answers may vary.





Lesson 1

What are seasons?

In some locations, the weather doesn't change much. It remains the same the whole year. In other places, the weather changes according to the **seasons**, which are **winter**, **spring**, **summer**, and **fall**. People plan their lives and activities, such as school and vacation, around these seasons.

Word Box

seasons
winter
spring
summer
fall


spring


summer


fall


winter

Students' own answers.

1. Which activities do you do in each season? Color your answers.

	winter	spring	summer	fall
play outside				
go on vacation				
wear a sweater				
wear boots				
wear sunglasses				

2. Circle your favorite season. Cross out (×) your least favorite season. Students' own answers.

winter spring summer fall

What are seasons?

Learning outcome: Students will have learned the names of the seasons and how the weather changes with them.
Keywords: *seasons, winter, spring, summer, fall*
Materials: drawing of students' favorite weather and activities
Resources: Unit 6 flashcard: *seasons*; Lesson 1 worksheet

CONNECT

Have students show their drawing of their favorite weather in groups of four. They should describe what the drawing represents and explain why it is their favorite weather. Ask them to name the season the drawing represents, and to explain what kind of clothes they can wear and what other activities they like to do in that season/weather. When students have finished presenting in their groups, do a quick survey to find out which weather is the favorite and least favorite among the students. Create a bar graph on the board for visual reference.

INVESTIGATE

Display the Unit 6 flashcard for *seasons* and elicit the names of each season. When students answer, ask: *How do you know it is (spring)?* Help them to use the information they already learned from the Phenomenal video to explain each season.

SYNTHESIZE

Read the text out loud and ask comprehension questions. Have students look at the background picture and identify each season.

1 Which activities do you do in each season? Color your answers.
Tell students to look at the table as you read the different activities and the seasons. Have them answer and compare their answers with a classmate. Ask: *Were your answers similar or different?* Have them discuss why.

2 Circle your favorite season. Cross out (×) your least favorite season.
Have students record their favorite and least favorite season in their books.

DEMONSTRATE

Distribute the Lesson 1 worksheet. Review the changes trees go through during the year. Emphasize the seasonal changes. Then have students use different materials they might have available to decorate each tree. You might want to play some soft music and let them work on their own.

Extra activity

Have students create a table like the one in Activity 1. Brainstorm activities that can be done in different seasons (about 20 or more). Tell students to choose five activities to include in their table. Have them walk around asking five classmates: *When do you [play basketball]?* Help as needed.

For the next class... OPTIONAL

Have students do Activity 1 on page 46 in their Workbook. Refer to the Workbook Answer Key on page T111.

DIFFERENTIATED INSTRUCTION

Remediation

Display the Unit 6 flashcard for *seasons* again and review each season's weather by focusing on the changing trees on the flashcard.

Stretch

Have students create a mind map in their notebook. Ask them to write words they associate with each season. These words could be activities, colors, weather, etc. Tell students to write as many words as they can. Let them know there are no right or wrong answers. Help as needed and check spelling.

Learning outcome: Students will have identified the weather and the changes in nature during each season.
Keyword: *cold, hot, warm, wettest, cool*
Materials: Workbook (optional)
Resources: *Spot the season!* projectable activity; Unit 6 song: *What's the weather like?*; *Changing seasons* video

CONNECT

Have students show the picture they drew in their Workbook for homework. Ask them to get into groups of four and compare the similarities and differences in their drawings.

INVESTIGATE

PHENOMENAL ACTIVITY

Spot the season!

Project the *Spot the season!* activity on the board. Read the text and ask questions about their experience: *Have you ever seen a bird in a nest on a tree branch? Have you ever seen a plant or flower bloom? Have you touched snow? Have you seen butterflies fly around? Have you seen trees lose their leaves?* Ask students to elaborate if their answers are affirmative.

WHAT'S THE WEATHER LIKE?

Tell students that they are going to listen to a song and learn about the weather and calendar divisions. Elicit the four seasons and some weather-related words. Play the song once and have students listen. Ask: *What words did you recognize? Which seasons did you hear? Which weather words did you hear? Do you remember how the chorus goes?* Play the song a second time and have students sing along. Go to page T167 to see the activity suggested.

SYNTHESIZE

Read the text out loud. Stop after each paragraph and ask comprehension questions: *When is it cold? When is it hot? When does it rain the most? When do trees lose their leaves? When is it cool?*

3 In pairs, read the text and discuss the seasons where you live. Then write your ideas in your notebook.

Changing seasons

Play the *Changing seasons* video on the platform. As it plays, have students individually write down the order in which the seasons appear. Then, to develop the Communication skill of taking turns and listening, read the instructions and give them time to discuss and write.

4 Circle the correct sentences.

Read the sentences out loud and have students give the answers. Then ask them to circle the correct sentences individually.

For the next class... OPTIONAL

Have students do Activities 2 and 3 on page 46 in their Workbook. Refer to the Workbook Answer Key on page T111.

DIFFERENTIATED INSTRUCTION

Remediation

Write words from the text on the board (*cold, no rain, flowers blossom, mosquitoes, from June to September, warm, rains most afternoons, trees lose their leaves*). Read a word or phrase and have students call out the corresponding season.

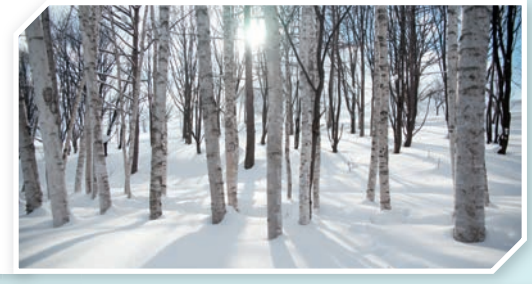
Stretch

Have students follow the model of Activity 4 to write one sentence. It can be true or false. Then ask them to switch sentences with a classmate and determine if the sentence is true or false. They can reread texts on pages 63 to 65 for inspiration.

Students' own answers.

3. In pairs, read the text and discuss the seasons where you live. Then write your ideas in your notebook.

In winter, it is **cold** and it doesn't rain. Many trees are bare.



Word Box

cold
hot
warm
wettest
cool



In spring, it is **hot** and it doesn't rain much. The flowers on jacaranda trees blossom. Mosquitoes and bees buzz.

In summer, from June to September, it rains most afternoons. The weather can be **warm** during the day and cool at night. July is the **wettest** month.





In fall, trees lose their leaves. It is **cool** outside.

4. Circle the correct sentences.

1 Trees lose their leaves in spring.

2 The weather is different in different places.

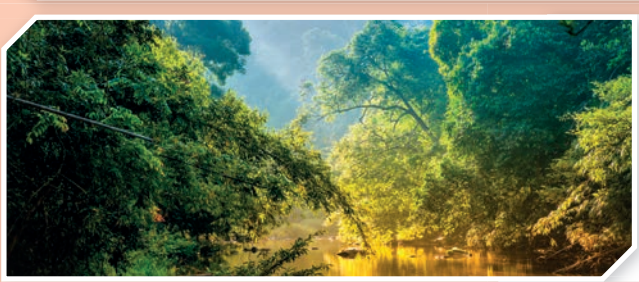
3 There are four seasons.

Different Places, Different Weather

In the Chihuahuan desert in northern Mexico, the summers and winters have little **rain**. It's cool during winter. Summer days are really hot.



Word Box
rain
humid
snowy



The Amazon jungle in Brazil is hot and **humid**. It's rainy and warm all year long.

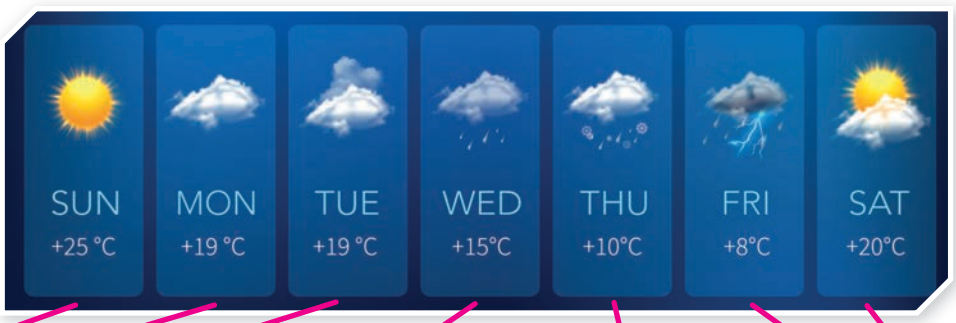
Tierra del Fuego in Argentina is cool in the summer. In the winter, the weather is cold and **snowy**.



5. Which of the places above is best for winter activities like sledding and skiing?

Tierra del Fuego, Argentina

6. Look at the picture. In pairs, describe the weather each day using the words *sunny*, *rainy*, or *cloudy*.



sunny cloudy cloudy rainy/cloudy rainy/cloudy rainy/cloudy sunny/cloudy

Learning outcome: Students will have noticed that different places have different weather.
Keyword: *rain, humid, snowy*
Resources: Quest: *Weather and seasons of the world*; Lesson 1 *Vocabulary activity*

CONNECT

Have students recall a trip they made and how the weather was like where they went. Ask: *Where did you go? Which season was it when you visited? Was it cold or hot? Were there trees or plants? Did it rain or snow?* Have students share in pairs or as a class.

INVESTIGATE

Weather and seasons of the world

Go to the *Quest* activity on the platform. Play the video from 00:23 to 00:48. Ask: *Can different places have different weather?* Then ask students to compare the weather in their city to the weather in the place they described in the Connect activity. Remind them to compare the weather in the same season. Model an example for them with a trip you took.

SYNTHESIZE

Read the text out loud. Ask students if they have been to any of the places described, or a similar place. Ask: *Have you ever been to a desert like the Chihuahuan desert? Have you ever been to a jungle? How about a hot and humid place? Have you ever been to a snowy place like Tierra del Fuego?*

5 Which of the places above is best for winter activities like sledding and skiing?

Read the question. Divide students into groups of three and have them discuss ideas among themselves. Then have volunteers present for each group.

6 Look at the picture. In pairs, describe the weather each day using the words *sunny, rainy,* or *cloudy*.

Have students look at the picture. Elicit what the sun and clouds mean. Then elicit what the letters and numbers underneath them mean. Read the instructions and give students time to complete the activity.

DEMONSTRATE

MIND MAP

Have students go to page 116 in their Student Book and add information to the *seasons and weather* section. Elicit what they have learned about the four seasons and the different types of weather in this lesson, and write their ideas on the board while they do the same in their books.

Go to the Lesson 1 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 47 in their Workbook. Refer to the Workbook Answer Key on page T111.

DIFFERENTIATED INSTRUCTION

Remediation

Have students create a chart with a weather word and a drawing; for example, a sun for *hot*, a cloud for *cloudy*, a cloud with rain for *rain*, a cloud with snow for *snow*.

Stretch

Have students go back to the picture in Activity 6 and brainstorm activities that could be done each day in that weather. You can write their ideas on the board.

How do we measure and record weather?

Learning outcome: Students will have noticed the use of weather reports.
Keywords: *weather, weather report*
Resources: Quest: *Weather and seasons of the world*; *Recording weather* projectable activity; Unit 6 song: *What's the weather like?*

CONNECT

Weather and seasons of the world

Go to the *Quest* activity on the platform. Play the video from 02:51 to 03:12. Have students answer the question: *How can people know what the weather will be like?* Then play the video from 03:13 to 03:55. Ask comprehension questions: *What does a meteorologist do? Why is it important to know what the weather will be like?*

INVESTIGATE

Recording weather

Project the *Recording weather* activity on the board. Follow the instructions in the activity. Let students look out the window for a more accurate description of today's weather. You might have to research today's weather in England beforehand so that students can answer Activity 3 in the projectable activity.

SYNTHESIZE

Read the text out loud. Ask students to describe today's weather and their choice of clothing. Ask: *Are you wearing a coat because it is cold? Did you forget to bring a coat? Are you all wearing short sleeves?* Ask questions so that they realize how decisions about their clothing are affected by the weather. If you have access to the internet in class, you can check the weather in several cities around the world and ask students to compare it to the weather in your city.

1 Circle the ways in which your family members check the weather.

Ask students to describe the pictures using words from the text. Then have them complete the activity and share their answers in pairs.

WHAT'S THE WEATHER LIKE?

Before you play the song, ask students if they remember the chorus or any part of the song. Play the song once. They can sing along, but ask them to pay attention to the lyrics. Ask: *What do you use to measure time? Can you see something similar to a calendar on page 67 of your Student Book? What would that be?* (the weekend forecast picture showing three days of the week) *What days of the week can you see in the picture?* Play the song again and have students sing along.

2 Color the window that shows suitable weather for wearing shorts.

Ask students to describe the pictures first. Then have them complete the activity. Check answers as a class and ask students to justify their answers.

For the next class...

Ask students to watch a weather forecast on TV or the internet. Tell them to take notes, since they will have to report on what they saw in the next class. The forecast can be in English or in their native language.

DIFFERENTIATED INSTRUCTION

Remediation

Ask students to look out the classroom window and draw the weather today. Have them label the type of weather.

Stretch

Ask students to create a weekend weather report following the model in Activity 1. It should include days of the week, weather symbols, and any other important information. They can leave the temperature out or you can help them with that.

Lesson 2

How do we measure and record weather?

Word Box
weather
weather report

Recording Weather

Weather events occur in nature. Weather can be different each day, or similar for several days or weeks in a row. Weather conditions vary in different locations. The weather in Rome, Italy, today might be the same as the weather in Paris, France, but it could be different tomorrow.

People check the weather to know how to dress and what activities to do. You can check the weather by going outside, looking out a window, or by checking a **weather report**.



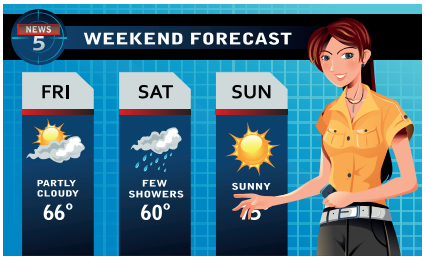
Students' own answers.

1. Circle the ways in which your family members check the weather.

1



2



3



2. Circle the window that shows suitable weather for wearing shorts.

1



2



3



Weather Instruments

Word Box

rain gauge
rainfall
thermometer
temperature

We are able to measure weather using instruments. A **rain gauge** measures **rainfall** in a specific area.



rain gauge

A weather **thermometer** measures **temperature** in units called degrees Celsius or Fahrenheit.

The numbers on a thermometer can tell us if it is cold, cool, warm, or hot. A high number on a thermometer tells us that it is warm or hot. A low number on a thermometer tells us whether it is cool or cold.



3. Check (✓) the weather thermometer. What's the weather like?

1



2



3



warm/hot

Learning outcome: Students will have learned about instruments to measure rainfall and temperature.
Keywords: *rain gauge, rainfall, thermometer, temperature*
Materials: students' notes of a weather forecast, a weather thermometer
Resources: Unit 6 flashcard: *temperature*

CONNECT

Have students share their forecast notes in pairs or groups of three. Monitor and provide help if needed. When they have finished sharing, ask if any of them recorded or remembers the temperature prediction for today. Accept their answers and write them on the board.

INVESTIGATE

Display the Unit 6 flashcard for *temperature*. Ask students to describe what they see. Elicit the word *thermometer*. If they do not know the word, say it and help them with its pronunciation. Tell students you have a weather thermometer that shows the temperature. Explain that the temperature inside and outside the classroom may vary by a few degrees. Ask them to first say if it is cold, cool, warm, or hot in class. Then establish temperature ranges for each category and write them on the board; for example, cold = 0-10°C, cool = 11-17°C, warm = 18-25°C, and hot = +26°C. (Adjust ranges to your city's temperatures and chill factor.) Ask students to take a piece of paper and write what they think the temperature of the classroom is. Check the temperature and check students' answers to see who had the closest guess. You can pass the thermometer around so students can get familiar with it.

SYNTHESIZE

Read the text about weather instruments. Ask students to reread it individually. Direct students to the glossary page to check the meaning of words they don't know. Ask comprehension questions: *What device measures [rainfall/temperature]? What does a [low/high] number mean on a thermometer?*

3 Check (✓) the weather thermometer. What's the weather like?

Explain that there are different types of thermometers. Ask students to check the weather thermometer. Ask: *Does it indicate a low or a high number?* Give students time to answer. Check answers as a class.

THAT'S PHENOMENAL!

Some animals can sense a change in temperature. For example, if you find a lot of spiders in your house, this means it might get cold soon. Spiders don't like the cold and look for warm shelters.
If you want to know how hot it is outside, you should listen to a cricket. Count the number of times it chirps in 14 seconds and add 14 to the result. The total is the temperature in Fahrenheit!

For the next class... OPTIONAL

Have students do the activities on page 48 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation
Have students draw a rain gauge and a thermometer, and label them.

Stretch
Have students work in pairs to explain to each other what a rain gauge and a thermometer are used for. Ask them to use their own words. Monitor and provide help if needed.

Learning outcome: Students will have learned about wind, and what a weather station and a weather forecaster do.
Keywords: *wind, anemometer, weather station, weather forecaster, symbols*
Resources: Unit 6 poster; Lesson 2 worksheet; Lesson 2 *Vocabulary activity*

CONNECT

Display the Unit 6 poster. Elicit the instruments (rain gauge and thermometer). Have students recall what they are used for. Point to the other two pictures and ask students to infer what the instrument could be used for and who the person could be. Accept all their answers. As a hint, ask them to read only the titles of the texts on page 69 of their Student Book to help them answer.

INVESTIGATE

Ask students to go to the glossary and read the definitions to find the words for the two pictures next to the text. Once they have found them, write the words *anemometer* and *weather forecaster* on the board and help students with pronunciation.

SYNTHESIZE

Read the texts out loud. Ask comprehension questions: *What is an anemometer used for? What does a weather forecaster do? What do experts do at a weather station?* Write the word *symbols* on the board and ask: *Can you see some symbols on this page?* Ask students to point to them on the page.

4 Match the weather symbols to the words.
Ask students to read the words and describe the pictures. Then have them complete the activity. Check answers as a class.

5 Work in groups. Look out the window and predict the weather for the rest of the day. Present your weather forecast to the class.

Predicting To develop the Predicting skill, give students enough time to check the weather outside and write their forecasts. You can write key words on the board to help them. Distribute the Lesson 2 worksheet. Ask students to work in pairs to predict what the weather will be like in the next few days. Model the activity and provide help if needed. When they finish, ask them to present it as if they were a weather forecaster on TV.

DEMONSTRATE

MIND MAP

Have students go to page 116 in their Student Book and add information to the *measuring weather* section. Elicit what they have learned about the instruments used to measure weather in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 2 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 49 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation
Have students create a weather forecast for the weekend following the models on pages 66 and 67 of their Student Book.

Stretch
Ask students to create a weather forecast for the week following the models on pages 66 and 67 of their Student Book, and to add drawings of the clothes they would recommend people to wear for each day.

Wind

Word Box
wind
anemometer
weather station
weather forecaster
symbols

We can feel the breeze when it blows our hair or clothes. We can see the leaves on trees moving or a flag waving in the **wind**. An **anemometer** is an instrument used to measure wind speed and direction.



anemometer

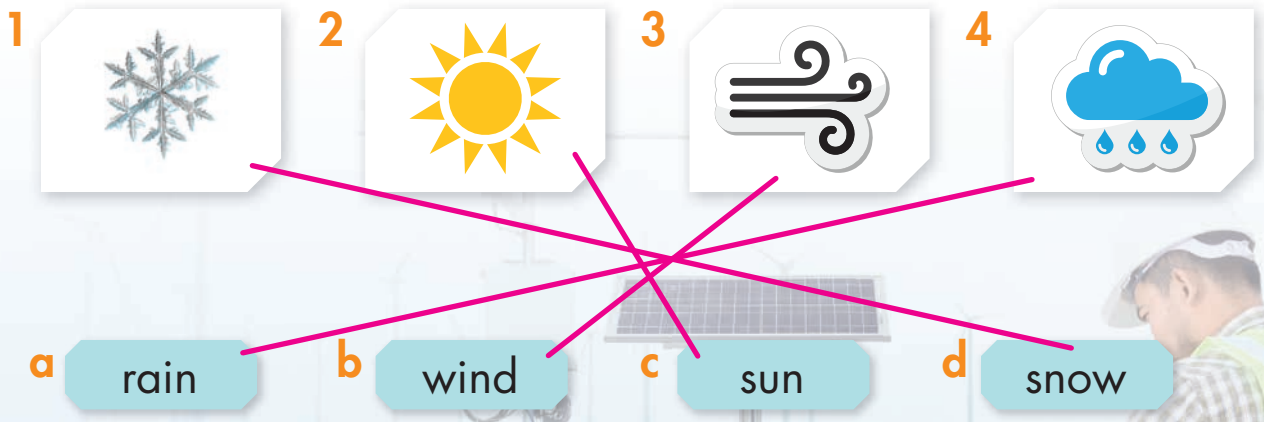
Weather Station

A **weather station** collects information about the weather.

A **weather forecaster** is a person who uses information from weather stations to make predictions about the weather. News reports often use **symbols** to communicate information.



4. Match the weather symbols to the words.



5. Work in groups. Look out of the window and predict the weather for the rest of the day. Present your weather forecast to the class.

Answers may vary.

Lesson 3

How long are days?

Days and Nights

Word Box
sky
sunrise
sunset
day length

When you're outside and you look up, you're looking at the **sky**. The way the sky looks changes all day.

During the day, you can see the sun and clouds. Sometimes you can even see a rainbow! At night, you can see the moon, the stars, and sometimes, even clouds.

Sunrise is when the sun first comes up. **Sunset** is when the sun goes down and it becomes dark. In some places, sunrise and sunset times change during different seasons. **Day length** is how many hours of light there are in a day.

1. Circle the activities you do during the day. Answers may vary.

1 

2 

3 

2. Match the sentence halves.

1 During the day,	a you can see the stars.
2 At night,	b is how many hours of light there are in a day.
3 Day length	c you can see the sun.

How long are days?

Learning outcome: Students will have noticed the way the sky changes throughout the day.
Keywords: *sky, sunrise, sunset, day length*
Materials: poster paper (two sheets per group of four)
Resources: Unit 6 flashcards: *sunrise, sunset*; Lesson 3 worksheet

CONNECT

Display the Unit 6 flashcards for *sunrise* and *sunset*. Have students say what they see in the pictures and what the difference between both images could be. Help them as necessary. Then say the words *sunrise* and *sunset* and explain their meanings.

INVESTIGATE

Write the words *sunrise* and *sunset* on the board and have students notice how they are compound words. Make sure they understand the meaning of *rise* and *set*. Say the words several times and ask students to mimic the sun as you say them (they can raise and open their arms for *sunrise*; they can crouch and hide behind their desk for *sunset*).

SYNTHESIZE

Read the text out loud. Ask comprehension questions: *What can you see in the sky during the day? And at night? Does the sunrise and sunset times change throughout the year?* Ask students to circle the words *sky*, *day*, *night*, *sunrise*, *sunset*, and *day length* in the text.

1 Circle the activities you do during the day.

Ask students to brainstorm activities they usually do during the day and write them on the board. Ask: *What are the children in the pictures doing?* Have students describe what they see. Read the instructions and have students answer individually. Check answers as a class.

2 Match the sentence halves.

Read the sentence halves first. Then read a whole sentence, but match two wrong halves (for example: *At night you can see the sun.*) Let students say if it is right or wrong. Repeat with the rest of the sentence halves. When one of the sentences is right, they match it in their books.

DEMONSTRATE

Elicit activities people do at sunrise and at sunset. Make a list on the board. Then ask students to identify the activties they do at those times of the day from the ones listed on the board. After this, distribute the Lesson 3 worksheet. Have students complete Part 1 of the worksheet (sunrise and sunset) individually. Have volunteers share their drawings with the class.

For the next class... OPTIONAL

Have students do Activities 1 and 2 on page 50 in their Workbook. Refer to the Workbook Answer Key on page T112.
Ask students to get help at home to research and write down sunrise and sunset times for the next day and bring them to class.

DIFFERENTIATED INSTRUCTION

Remediation

Have students work in groups of four to create two posters: one for day and one for night. Alternatively, you can assign day and night to different groups. They should include drawings and labels. They can use the words from the text (*sky, day, sun, clouds, rainbow, night, moon, stars, sunrise, sunset, dark*). You can hang them around the classroom and let students walk around to check them.

Stretch

Have students make a list of things you can see in the sky during the day and during the night. Encourage them to add words that are not in the text, like *hail* or *lightning*.

Learning outcome: Students will have learned the parts of the day and the months of the year, and will have learned how to track them.
Keywords: *morning, afternoon, evening, calendars*
Materials: Workbook (optional), poster paper
Resources: Unit 6 flashcards: *sunrise, sunset, morning, afternoon, evening, night*; *Day length* projectable activity; Lesson 3 worksheet; Lesson 3 *Vocabulary activity*

CONNECT

Display the Unit 6 flashcards for *sunrise* and *sunset* and elicit the words. Ask students to report on the sunrise and sunset hours they researched, and write the times on the board if they are different.

Then display the Unit 6 flashcards for *morning, afternoon, evening,* and *night,* but cover the words. Ask students to name the parts of the day. Ask them to name the days of the week and the months of the year. Show the flashcard for *calendar* and elicit what it is and what it is used for.

INVESTIGATE

Day length

Project the *Day length* activity on the board. Read the texts and ask students comprehension questions. Then go through the questions in the activity as a class. Distribute the Lesson 3 worksheet and have students complete Part 2. Check answers as a class.

SYNTHESIZE

Read the first text out loud. To check comprehension, read the definitions of the parts of the day and have students call out the word. Then read the text about months of the year. Have students recite them with their books closed if they already know them. Ask comprehension questions.

3 Circle True or False.

Read the instructions and statements out loud. Have students call out the answer and then circle it in their books.

Extra activity OPTIONAL

Have students do Activity 3 on page 50 of their Workbook to check comprehension of the concept of day length.

Distribute the Lesson 3 worksheet. Have students complete Part 3.

DEMONSTRATE

MIND MAP

Have students go to page 116 in their Student Book and add information to the *days* section. Elicit what they have learned about days and months in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 3 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 51 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

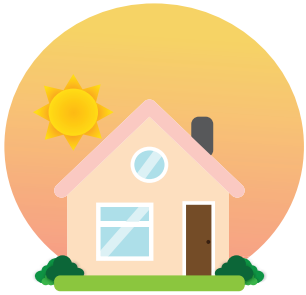
Remediation

Divide the class into three groups. Write the topics: *Parts of the day* (including sunrise and sunset), *Days of the week*, and *Months of the year* on the board. Assign one topic to each group and ask them to create an illustrated poster with word labels. You could ask them to draw a calendar and activities they can do each day or each month. Have them present their posters to the class.

Stretch

Have students make a list of activities they do in the morning, afternoon, and evening. Have them divide it into weekdays and weekends.

Parts of the Day



Morning begins when the sun rises.



Afternoon is between noon and evening



Evening is just before dark as the sun sets.



Night is after the sun sets and it is dark.

Word Box

morning
afternoon
evening
calendars

Months of the Year

There are 12 months in a year: January, February, March, April, May, June, July, August, September, October, November, and December. The months have 28, 29, 30, or 31 days. **Calendars** help us organize activities and holidays.

3. Circle True or False.

1	The sun rises in the afternoon.	True	**False**
2	It is very dark at 9 o'clock in the morning.	True	**False**
3	February is the third month of the year.	True	**False**
4	There are 12 months in a year.	**True**	False
5	All months have 30 days.	True	**False**

What is the weather like?

STEAM

Objective:

To make a homemade thermometer.

Materials:


a plastic bottle


2 plastic cups


rubbing alcohol


red food coloring


a straw


modeling clay


a measuring cup

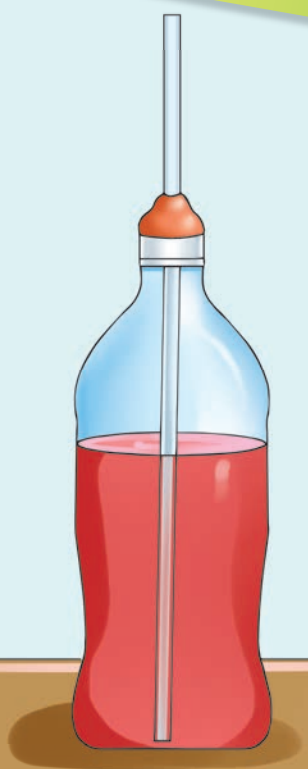
Steps:

1. Fill a quarter of one cup with water and the other one with alcohol.
2. Pour both cups into the bottle.
3. Mix some drops of red food coloring.
4. Use modeling clay to seal the top of the bottle with the straw in it. Make sure the straw does not touch the bottom of the bottle.
5. Fill in the bowl with hot water. Put the bottle inside.

Work in pairs and discuss what happens when you put the bottle inside the measuring cup with hot water.

Go Beyond...

How is your thermometer different to the ones you know?



What is the weather like?

STEAM

Objective: To make a homemade thermometer.
Materials: a plastic bottle, 2 plastic cups, rubbing alcohol, red food coloring, a straw, some modeling clay, a measuring cup; different types of thermometers (real ones if possible, if not, bring pictures of them)
Resources: Makerspace worksheet

DEMONSTRATE

Use the Makerspace worksheet on the platform. Alternatively, photocopy the Unit 6 Makerspace worksheet on page T128.

GET IT READY

Elicit what a thermometer is and what it is used for. Then explain to students that they will make one.

Read the information about the materials and the steps in the book and have some volunteers paraphrase each step to check comprehension.

Divide the class into pairs. Have each pair gather the materials they will need. Give them the opportunity to choose the materials that they think might be helpful.

GET IT GOING

Organize students around their workstations. Ask students to follow the steps carefully.

Allow students enough time to do the activity and answer the questions in their books. Monitor their work, provide help if needed, and ask questions about their findings.

Once pairs have finished, gather the class together and invite some volunteers to describe, in their own words, the process they followed. Then have a guided discussion on their findings. Ask: *What happens when you put the bottle inside the measuring cup with hot water?* Invite some other volunteers to share their results and thoughts.

Ask: *Did all of you get the same results your classmate is describing?* Discuss further.

GET IT DONE

Gather students in a circle to have a discussion to conclude the observation practice. Invite them to discuss any additional thoughts they have about their findings. Conclude by summing up the different instruments we can use to measure weather.

Allow some time to talk about their experience doing the project. Invite students to discuss their experience. Ask them what they found interesting, challenging, and enjoyable.

GO BEYOND

In their pairs, ask them to predict what would happen if they did not use hot water. Have them share their answers with other groups and discuss if their predictions are not the same. Prompt with additional questions if they find it hard to analyze the information.

Finally, show the different types of thermometers, or the pictures, and elicit their uses. Then, in the same pairs they have been working, have them discuss how similar or different their thermometer is to the ones they know so far. You might want to ask them to describe the use of their thermometer.

Objective: To review concepts related to the seasons, weather, and days.
Resources: Unit 6 poster; Unit 6 flashcards; Unit 6 Self-assessment; Unit 6 Test

EVALUATE

REVIEW

Display the Unit 6 poster and flashcards on the board. Call upon students to tell you what they remember about the lesson. Have a class discussion to correct any misconceptions students may have.

1 Match the pictures to the words.
Have students describe the pictures in pairs. Then ask them to complete the activity individually.

2 Complete the sentences with words from the box.
Read the words from the box out loud. Then read the sentence halves and have students complete them individually without calling out the answer. Check answers as a class.

3 Write one activity you do each day.
Have students look at the table. Read the instructions out loud, and then give them time to write their activities.

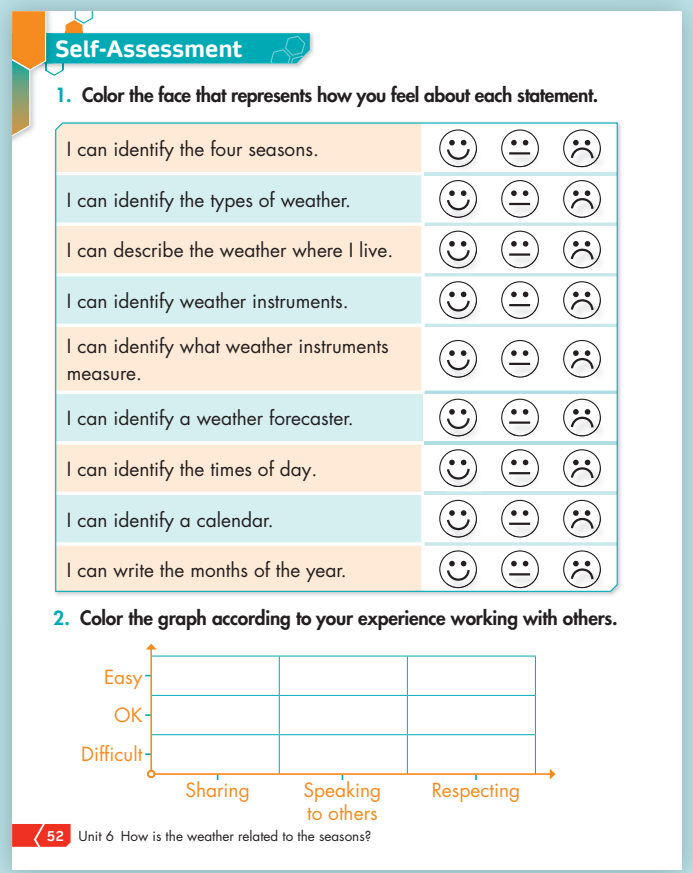
SELF-ASSESSMENT

Use the Unit 6 Self-assessment on the platform. Alternatively, have students turn to page 52 in the Workbook. Read the instructions and self-assessment table out loud and check comprehension. Have students work on their own. Monitor their work. When students finish completing the table, ask them to share what they liked the most about the unit and what they enjoyed learning. If any volunteers are comfortable with it, they can also share what confused them the most or where they feel they need more work.

The graph diagram focuses on the Communication skill. Explain what *sharing*, *speaking to others*, and *respecting* mean and elicit examples of good communication. Then ask them to reflect and decide if it was easy or difficult for them to communicate effectively. Have them color the graph according to their experience.

ASSESSMENT

Use the Unit 6 Test on the platform to evaluate students' performance and development. Alternatively, photocopy the Unit 6 Test from page T147.



Self-Assessment

1. **Color the face that represents how you feel about each statement.**

I can identify the four seasons.	☺	😐	☹
I can identify the types of weather.	☺	😐	☹
I can describe the weather where I live.	☺	😐	☹
I can identify weather instruments.	☺	😐	☹
I can identify what weather instruments measure.	☺	😐	☹
I can identify a weather forecaster.	☺	😐	☹
I can identify the times of day.	☺	😐	☹
I can identify a calendar.	☺	😐	☹
I can write the months of the year.	☺	😐	☹

2. **Color the graph according to your experience working with others.**

1. Match the pictures to the words.

1 

2 

3 

4 

a cold

b windy

c warm

d hot

2. Complete the sentences with words from the box.

rainfall | wind speed | temperature

1 An anemometer measures **wind speed**.

2 A thermometer measures **temperature**.

3 A rain gauge measures **rainfall**.

3. Write one activity you do. Students' own answers.

Monday morning	Friday night

What are materials?

LEARNING OBJECTIVES

- Learn where materials come from.
- Learn to distinguish natural and manufactured materials.
- Learn about solids, liquids, and rust.
- Describe the physical properties of everyday materials.
- Reflect on which materials are suitable for specific purposes.

STEAM CONNECTION

- Students demonstrate curiosity about the materials used to make everyday objects.
- Students notice the different origins of materials.
- Students reflect on different states of matter.
- Students notice that materials have a purpose.

Use the Unit 7 STEAM worksheet to work on the unit's topic connection with the subject of science.

DIGITAL RESOURCES

Phenomenal video: *Materials: Where do they come from?*

The world is upside down!
Quest: *Spotting materials*
Projectable activities: *Material properties* (Lesson 1), *Identifying and describing liquids* (Lesson 2), *Is it a strange choice?* (Lesson 3)
Video: *Stuffing* (Lesson 1)
Printable: Lessons worksheets
Vocabulary activities

MAKERSPACE

Would it float or sink?

Students make a paper boat and observe if it floats or sinks. They also test other materials to see if they float or sink. They observe the process to finally decide which material would be suitable to make a boat. Allow some discussion time at the end so that students can report and reflect on their findings. Prepare kits of materials per group in advance, but leave room for students to choose the materials they think they could use.

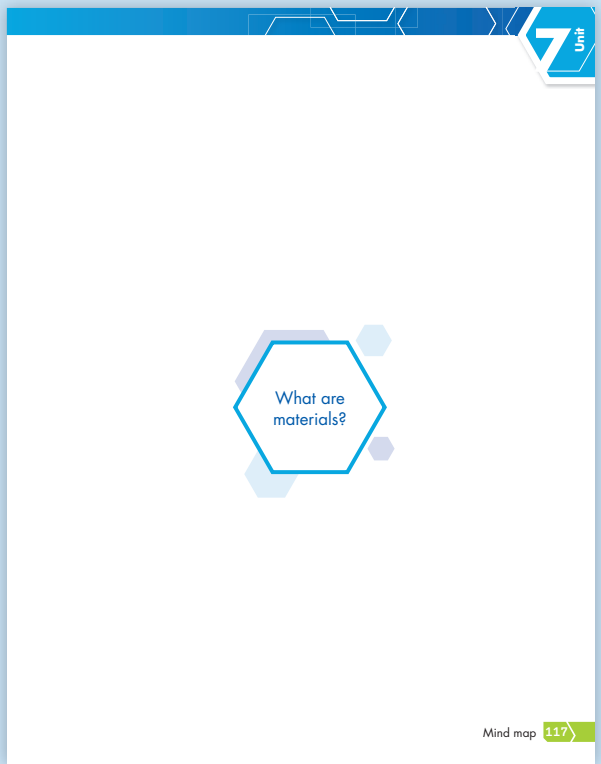
Print the Unit 7 Makerspace worksheet on the platform. Alternatively, photocopy the worksheet on page T129.

ASSESSMENT TOOLS

- Review: Student Book page 85

Self-assessment: Workbook page 60

Assessment: Unit 7 Test



FLASHCARDS

brick, clay, concrete, cotton, glass, metal, sponge, straw, wood

Lesson 1 and Assessment.







POSTER

The Unit 7 poster shows natural and manufactured materials at a playground. It shows objects made of wood, metal, plastic, rubber, and concrete. It can be used to show the materials around us and how suitable they are for their purpose.

Lessons 1, 3, and Assessment.



What are materials?

Learning outcome: Students will have learned that all objects are made from different materials and that materials come from different sources.
Keywords: *object, material*
Resources: Unit 7 Phenomenal video: *Materials: Where do they come from?*; Unit 7 video worksheet; Quest: *Spotting materials*

CONNECT

FLIPPED LEARNING

Before class
Students watch the video before class. Give them the Unit 7 video worksheet beforehand to complete as they watch the video at home. Alternatively, you could watch the video in class.

In class
Ask students to take out their video worksheet and elicit the materials used to make the objects around them. Put students into small groups and have them report on the observations they recorded in the table. Help by giving hints or prompting them with questions for the more difficult materials. Have students brainstorm objects. Have a guided discussion about the results and the conclusion.

QUEST Spotting materials

Go to the *Quest* activity on the platform. Ask students to name the different materials they can see. Have them focus on the objects marked with a question mark. Once they have solved the activity, have them name other materials they can see in the picture. Alternatively, you can have them brainstorm other household objects made from the materials in the activity. Tell them to think about their own home. Help them if needed.

Read the text out loud. To check comprehension, ask students to look around the room and name different objects. Alternatively, you can ask more specific questions: *Which objects in the classroom are made from [glass, wood, plastic, fabric]?*

1 What materials do you see in the photo?
Ask students to describe the picture and identify the objects in it. Then have them identify the materials they can see. If students miss any materials, help them by asking directly: *What do you think the [name of object] is made from?*

2 Pick an object in your classroom and look at it closely. What material or materials is it made of?
Have students pick an object in the classroom. To ensure they pick different materials, you can make a list of five to ten objects and assign them to students. Ask them to report back to the class once they identify the material(s) it is made of.

MIND MAP

Start a mind map on the board. Have students go to page 117 in their Student Book and read the title question of this unit at the center of the mind map. Add the concepts *types of materials, liquids and rust,* and *suitable materials* around the map.

For the next class...

Ask each student to bring a soft toy of their preference.

Unit 7

What are materials?

Our lives are filled with objects. An **object** is a non-living thing. Pencils and tables are examples of objects.

Word Box
object
material

An object can be made from one **material** or multiple materials. Materials come from various sources. Some materials are good choices for making things and others are not. Every object you touch is made from a particular material.

1. **What materials do you see in the photo?**
   Possible answers: wood, plastic, cotton, metal, glass, paper
2. **Pick an object in your classroom and look at it closely. What material or materials is it made of?**
   Answers may vary.



Lesson 1

Where do materials come from?

Natural Materials

Natural materials come from nature.

Cotton is a soft, flexible material used to make clothes and towels. It comes from the cotton plant.

People use **straw** to make baskets, hats, and roofs. Straw comes from plants.

Word Box
cotton
straw
wood
metal
clay



We make pencils and furniture using **wood**. Wood comes from trees.



Metal is used to make silverware and jewelry. It is found in the earth.



Clay is used to make pottery. It can be shaped when wet, and it hardens when it dries. It also comes from the earth.

1. Trace the natural materials you find in your classroom. Then complete the sentences. Answers may vary.

1 I see a wooden _____.

2 I see a metal _____.

2. Copy these words in your notebook. Write if these materials come *from the earth* or *from plants*. Then give two examples for each material. cotton from plants, wood from plants, metal form the earth, clay from the earth straw from the earth. Answers may vary.

cotton wood metal clay straw

Where do materials come from?

Learning outcome: Students will have learned about some natural materials and where they come from.
Keywords: *cotton, wood, metal, clay, straw*
Materials: students' soft toys from home, Workbook (optional)
Resources: *Stuffing* video; Unit 7 flashcards: *cotton, wood, metal, clay, straw*

CONNECT

PHENOMENAL ACTIVITY

Stuffing

Have students present the soft toys that they brought from home. Focus their attention on the look and feel of their toys. Ask students to work in pairs and discuss how their toys are similar and different. Play the *Stuffing* video on the platform. As a class, discuss which of the toys they brought are stuffed and which are not.

INVESTIGATE

Display the Unit 7 flashcards for *cotton, wood, metal, clay, straw* and elicit the words. Let students brainstorm objects they have at home that are made of those materials. Show students the flashcards again and ask students which material they think a teddy bear would be made of and why.

SYNTHESIZE

Read the text about natural materials out loud. Direct students to the glossary on page 86 to check the meaning of vocabulary words. Show the Unit 7 flashcards again and have students call out the names of the materials.

1 Trace the natural materials you find in your classroom. Then complete the sentences.

Read the natural materials out loud and ask students to identify objects made from those materials. Once students have identified the objects, tell them to trace and complete the sentences. Check answers as a class.

2 Copy these words in your notebook. Write if these materials come *from the earth* or *from plants*. Then give two examples for each material.

Read the instructions and ask students to work individually. Monitor and help as needed. Have students work in pairs to check answers.

THAT'S PHENOMENAL!

Houses and buildings today are made from strong, durable materials like concrete, brick, metal, and sometimes stone and timber. But when humans first started to build shelters, the materials they used were leaves, tree branches, and animals hides, which were not very durable.

Extra activity OPTIONAL

Have students do Activity 3 on page 55 of their Workbook.

For the next class... OPTIONAL

Have students do the activities on page 54 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation

Create a table to list objects that are made of each natural material given on page 76 of the Student Book. Work on the list with students and have them copy it into their notebooks.

Stretch

Have students mention the properties of the natural materials seen on this page. (*soft, hard, smooth, prickly, brittle*). Adjust the vocabulary level according to your students.

Learning outcome: Students will have learned about manufactured materials and their characteristics.
Keywords: *glass, brick, concrete, sponge*
Materials: a selection of 2 cm square pieces of different materials including different fabrics, plastic from a carrier bag, bubble wrap, cling film, greaseproof paper, aluminum foil, paper, cardboard, and sandpaper
Resources: Unit 7 flashcards: *glass, brick, concrete, sponge*; Unit 7 song: *The world is upside down!*; Lesson 1 worksheet

CONNECT

Display the Unit 7 flashcards for *glass, brick, concrete,* and *sponge* and elicit their names. Help students as needed. Say the names again and have students repeat after you. Display the flashcards around the room. Say the names and have students point to the correct flashcard. Play several times until students can identify all the materials on the flashcards. Keep the flashcards up.

THE WORLD IS UPSIDE DOWN!

Tell students that they are going to listen to a fun song and learn about materials in different objects. Elicit the materials they have seen up to this point. Play the song once and have students listen. Ask: *What words did you recognize? Which materials did you hear? Which objects? Do you remember how the chorus goes?* Play the song a second time and have students sing along. Go to page T168 to see the activity suggested.

INVESTIGATE

Distribute the Lesson 1 worksheet. Put students into small groups and give each group a selection of 2 cm square pieces of different materials including different fabrics, plastic from a carrier bag, bubble wrap, cling film, greaseproof paper, aluminum foil, paper, cardboard, and sandpaper. Ask: *Which materials are most suitable for making a bear to hug at bedtime?* Explain that you are talking about the outer layer (skin) of the bear and not the stuffing. Students stick the materials that are most suitable inside the outline of the bear and those that are not suitable outside the bear outline. Discuss any differences in the choices made by different groups. Ask: *Why have you chosen different materials for your bear? Is it because of the look/feel of the materials?* You can create stations with different materials and have students move to each station to decide if the material should be stuck on the inside or the outside of the outline.

SYNTHESIZE

Read the text about manufactured materials out loud. Encourage students to refer to the glossary on page 86 to check the meaning of vocabulary words. Direct students' attention to the pictures as you read. Direct students' attention to the flashcards around the room from the Connect activity. Point to them as you read or ask students to point to them as you mention the materials in the text.

3 Circle the materials that are suitable for building a house. Cross out (x) the materials that are not suitable.

Have students read the words out loud and identify the materials in the pictures. Ask: *Is glass suitable for building a house?* Repeat the question for each material. Then let students circle and cross out the answers individually.

DIFFERENTIATED INSTRUCTION

Remediation

Show the Unit 7 flashcards and review the names of the materials. Then ask students to name one thing made from each material.

Stretch

Prepare a list of three to five objects made from each material on the flashcards. Jumble them up and write them on the board. Say the materials on the flashcards and have students classify three objects per material. Help them if needed.

Manufactured Materials

Word Box
glass
brick
concrete
sponge

Manufactured materials are created by humans using natural or man-made materials.

Glass is clear. Windows and glasses are made out of glass. Glass is manufactured by melting sand at very high temperatures.





A **brick** is a dense, hard object made from clay or mud. Some buildings are built using bricks.

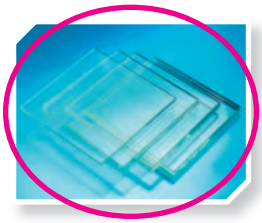
Concrete is made up of sand, rocks, and water. Sidewalks and walls are made from concrete.

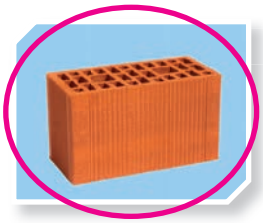


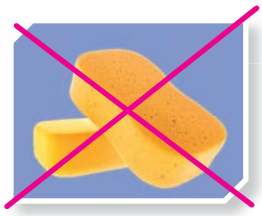


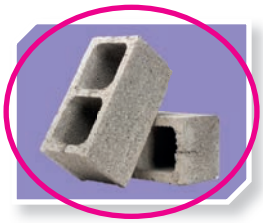
A **sponge** is a soft and porous material that can absorb water. It is useful for cleaning purposes. Sponges were originally made from natural sea sponges, but most sponges we use today are made from synthetic, or man-made, materials.

3. Circle the materials that are suitable for building a house. Cross out (×) the materials that are not suitable.

1 
glass

2 
brick

3 
sponge

4 
concrete

Plastic

Water bottles and food packages are mostly made out of **plastic**. Plastic is made from oil found deep in the ground.



Word Box

plastic
resin

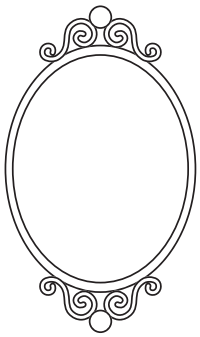
Resin

Natural **resin** is a sticky substance that comes out of some trees. Resins are used in medicine, soap, and as a shiny top layer for some products. When resin is manufactured, it becomes similar to plastic.



4. Color the objects made of plastic.

1



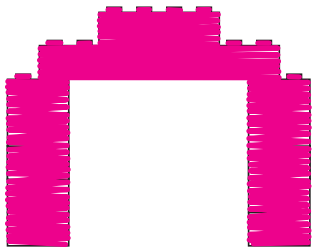
2



3



4



5. Circle the natural resin.

1



2



3



Learning outcome: Students will have learned about plastic and natural resin.
Keywords: *plastic, resin*
Resources: Unit 7 poster; *Material properties* projectable activity; Lesson 1 *Vocabulary activity*

CONNECT

Have students think of the park they usually go to. Ask them to mention objects or games they can see or play there. Then have them guess the materials those objects are made of. For example, a slide can be made of plastic or metal. Display the Unit 7 poster and tell students to describe what they can see. (buildings, wall, tree, lamppost, slides, and different playthings) Then have them focus on the material close-ups. Have them create sentences for the materials on the poster. Example: *The sidewalk is made of concrete.*

INVESTIGATE

Material properties

Project the *Material properties* activity on the board. First, have students identify all eight objects in the pictures. Then read the adjectives, clarifying any unknown properties. Name the objects and have students assign properties. Check answers and help solve any misconceptions students might have.

SYNTHESIZE

Read the texts about plastic and resin out loud. Ask: *What plastic objects do you have at home?* As resin might be a difficult concept to grasp for some students, ask comprehension questions: *What is one property of natural resin? Where does natural resin come from? What objects can be made out of resins? What happens when resin is manufactured?*

4 Color the objects made of plastic.

Ask students to identify the objects in the pictures. Then have them discuss in groups of three which objects are made of plastic. Tell them to report their conclusions to the rest of the class. Have a class discussion to clarify any disagreement between the groups. Help them develop their discussion arguments as needed.

5 Circle the natural resin

Tell students to look at the three pictures and compare them to the picture in the text. Then have them circle the answer individually. Check answers as a class.

DEMONSTRATE

MIND MAP

Have students go to page 117 in their Student Book and add information to the *types of materials* section. Elicit what they have learned about natural and manufactured materials in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 1 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do Activities 4 and 5 on page 55 in their Workbook. Refer to the Workbook Answer Key on page T112. Ask students to bring a small toy made of plastic to class.

DIFFERENTIATED INSTRUCTION

Remediation

Have students create a mini poster with three objects made of plastic. Have them label the poster, *Plastic*.

Stretch

Display the Unit 7 poster. Ask students to say the materials used to make other things in the poster. Example: *The lamppost is made of metal and glass. The buildings are made from concrete and glass. The children's shoes have rubber on them.* Prompt students with questions if needed.

Lesson 2

How do we identify liquids and rust?

Learning outcome: Students will have learned the difference between solids and liquids.
Keywords: *solid, liquid, runny*
Materials: students' small toys made of plastic
Resources: *Identifying and describing liquids* projectable activity

CONNECT

Write the word *liquid* on the board and elicit its meaning. (a substance that flows or runs freely) Ask students to name some liquids present in everyday life. Help them gradually. First, ask them to think about liquids they use, mainly things they drink. Then, ask them to think about liquids their parents or grandparents use, maybe in the kitchen to cook or to clean the house. Next, ask them about liquids they can see when they go outside. Make a list on the board and let them copy it in to their notebooks.

INVESTIGATE

PHENOMENAL ACTIVITY

Identifying and describing liquids

Project the *Identifying and describing liquids* activity (only the first page) on the board. Read the text about toffee. Then ask students to identify the solid objects around them. Have students take out their plastic toys. Have students take turns saying if their toy is a solid or a liquid and how they know. Then read questions 1a to 1c and have students answer. Help them as needed. For the *Observing water* part, first ask students to recall what happens when they wash their face or hands. Ask: *What happens to the running water in your hands? Can you keep it in your hands for a long time? What would happen if you put [say the liquids they named in the Connect stage] in your hands? Can you keep a toy in your hands for a long time? Why is that?* Then read the part about water being a liquid.

SYNTHESIZE

Read the text about solids and liquids out loud. Ask comprehension questions.

1 Compare ice cubes with water. Which is a solid? Which is a liquid?

Have students compare ice cubes and water and explain the characteristics of each. Have them justify their answers.

2 Look at the pictures of ice-cream cones in different temperature conditions. Put the cones in order from the coldest to the hottest.

Have students look at the four pictures carefully. Elicit what is happening to the ice cream. Write the word *melt* on the board if students do not have the necessary vocabulary to explain what they see. Let students work in groups of three or four. Then check answers as a class by having different groups explain and justify their answers.

For the next class... OPTIONAL

Have students do the activities on page 56 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation

Have students create an information sheet divided into two parts: solids and liquids. Ask them to draw and label three objects for each part.

Stretch

Ask students if toys could be made from water and no other materials. Have students compare answers in pairs. If there is any disagreement, have students justify their answers.

How do we identify liquids and rust?



Solids and Liquids

Solid objects maintain their shape and size when moved. A **liquid** does not. Liquids are described as **runny** since they move when touched.

We get milk from cows and goats. We can make cheese using this milk. Cheese is a solid and milk is a liquid.

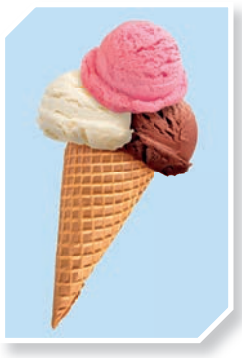
Some things can change from a solid to a liquid or from a liquid to a solid depending on the temperature.

Word Box
solid
liquid
runny

1. **Compare ice cubes with water. Which is a solid? Which is a liquid?** ice cubes = solid
   water = liquid



2. **Look at the pictures of ice cream cones in different temperature conditions. Put the cones in order from the coldest to the hottest.**



1



4



3



2

Liquids

Soft drinks are liquids. The blood running through our bodies is a liquid. The water in our showers and in the oceans is liquid. Honey and oil are liquids, but they are not as runny as others.



oil

honey

3. Circle the liquid that pours faster.



juice



ketchup

4. List the liquids you know. Students' own answers.

1 _____

2 _____

3 _____

4 _____

5. In pairs, classify the liquids in Activity 4 as *very runny*, *somewhat runny*, and *not very runny*. Answers may vary.

Learning outcome: Students will have learned about different liquids and their consistency.
Materials: samples of different materials (wood, metal, plastic, rubber, teddy bear fur, toweling, nylon, wool, sponge, cotton wool, paper, cardboard, brick, ceramic, rock, and two or three liquids in their containers)
Resources: Lesson 2 worksheet

CONNECT

Play an odd-one-out game with the material samples. Show the samples of different materials and have students name them. Hold up and call out the names of three materials (two with similar properties and another with different properties). In groups, students discuss which material is the odd one out and why. You can write a list of properties on the board. Encourage students to refer to the properties. Have groups give their answers to the rest of the class. There may be several possible odd one out reasons from each trio, so accept any valid answers.

INVESTIGATE

Distribute the Lesson 2 worksheet. Have students cut and paste the cards in their notebooks (one per page). As a class, have students brainstorm containers in which these liquids are usually stored or used in, and mention what they are made of. For example, cooking oil is stored in a glass or plastic jug/jar/bottle; it is poured on a pan made of metal. Write what students say on the board and give them a few minutes to complete the classification in their notebooks.

SYNTHESIZE

Read the text. Have students look at the pictures. To check comprehension, ask: *Is oil a liquid like water? What about honey? What is different about these liquids?*

3 Circle the liquid that pours faster.

Have students look at the pictures and read the labels. Ask: *Have you ever poured juice? And ketchup?* Have them raise their hands. Count the hands, as their experience may impact their answers. Then ask: *Which liquid do you think pours faster?* Ask students to justify their answers.

4 List the liquids you know.

Have students work individually since they have reviewed a long list of liquids all through the lesson. Walk around checking spelling. Have students say their answers and create a poll to find out which liquid was mentioned the most and which was mentioned the least.

5 In pairs, classify the liquids in Activity 4 as *very runny*, *somewhat runny*, and *not very runny*.

Have students create a three-column table in their notebooks. Ask them to write the categories as column titles. They can complete the activity individually or in pairs. If in pairs, pair above average students with below average ones.

For the next class... OPTIONAL

Have students do Activity 4 on page 57 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation

Have students add one more liquid per category to the table in Activity 5. Ask them to explain why they placed them in those categories.

Stretch

Have students complete the list of liquids in the *Investigate* stage with the liquids learned on this page and with other liquids they can think of. Then ask them to write the containers they could be stored in or poured into and the materials those containers are made of.

Learning outcome: Students will have learned what rust is, why it forms, and in what material it forms.
Keywords: *iron, oxygen, moisture, rust*
Materials: a shiny screw and a rusty screw (or a shiny coin and a rusty coin), pictures of things with rust
Resources: Lesson 2 *Vocabulary activity*

CONNECT

Show students a shiny screw (or coin) and elicit its name. Then show them a rusty one and ask students to compare both. Ask: *How are they similar? How are they different?*

INVESTIGATE

Predicting To develop the Predicting skill, students will predict which objects at home could form rust. Show students the pictures of things with rust. In groups of four, have them discuss one thing all the objects have in common (other than being rusty). Prompt them with questions to direct their discussions into realizing all objects in the pictures are made of iron, or metal.

SYNTHESIZE

Read the text about rust out loud. Ask comprehension questions: *What material gets rusty? What two elements are necessary for rust to form? Have you seen any rusty objects? Which ones?*

6 How are the pictures above similar? How are they different? Complete the sentences.
Have students describe the pictures first. Then ask them to focus on what is similar. Discuss ideas as a class. Write the final answer on the board and have students copy it into their notebook. Do the same with what is different.

7 Underline the correct sentences.
Read the sentences for students. If students work individually, allow them to check the text for the answer. If students work in pairs or groups, give them time to discuss their answers. Check answers as a class.

8 In pairs, research and discuss what can be done to avoid rust.
To develop the Communication skill of taking turns and listening to each other, start by reminding students that in a discussion, they must listen to what their other classmates are saying and be respectful of each other's turn. Ask them not to interrupt each other. Read the instructions and give students a few minutes to discuss. Monitor and help as needed.

DEMONSTRATE

MIND MAP

Have students go to page 117 in their Student Book and add information to the *liquids and rust* section. Elicit what they have learned about the characteristics of liquids and rust in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 2 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do Activities 5 and 6 on page 57 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation

Help students create a formula for rust. Prompt them with questions to guide their answers. (*iron + oxygen + water/moisture = rust*)

Stretch

Have students create a list of household objects that can form rust. Have them compare their lists in groups of three or four. Give them a few they might not have thought about, like the shower head or bathtub. Ask: *Why do you think many things can get rusty in the bathroom?*

What is rust?

Word Box
iron
oxygen
moisture
rust



Iron is a type of metal. When iron is in contact with **oxygen** and water, or **moisture** in the air, **rust** forms. If you leave a bike outside in the rain, the iron will rust. It is common to see rust on outdoor statues, old coins, and metal park benches. Look at the pictures. Can you see the rust on the bicycle and in the pan?



6. How are the pictures above similar? How are they different? Complete the sentences. Possible answers:

1 They are similar because they both show objects made of metal that have rusted.

2 They are different because the rust on the frying pan is more orange and the metal is darker in color.

7. Underline the correct sentences.

1 Rust can form when iron is exposed to oxygen and rain.

2 All bikes have rust.

3 It is not good to leave your bike in the rain.

8. In pairs, research and discuss what can be done to avoid rust. Possible answers: metal can be coated with water resistant paint or coatings, metal objects can be covered to protect them from the rain

Lesson 3

Which material is most suitable?

Word Box
suitable
pillow
jelly
flour
powder

Suitable Materials

When making an object, we think about how we will use it, and then we choose **suitable** materials to construct it. Suitable means the material matches the purpose. Would you enjoy a **pillow** made out of wood? How about a soccer ball made of **jelly**?

Flour

Flour is a **powder** we use for cooking and baking. It can be made from wheat, corn, cocoa, or even almonds. It is convenient to have flour in our homes.



1. Match the most suitable materials to make each object.

1 cake	2 chair	3 bowl	4 key
a plastic	b wood	c metal	d flour

2. Circle the powders you have in your home. Students' own answers.



baby powder



cocoa powder



spices

Which material is most suitable?

Learning outcome: Students will have learned that suitable materials are needed when making objects.
Keywords: *suitable, pillow, jelly, flour, powder*
Resources: Unit 7 poster; Unit 7 song: *The world is upside down!*; Lesson 3 worksheet

CONNECT

Display the Unit 7 poster and review the materials in it. Then name parts of the park or city and mention unsuitable materials. Have students say what it would be like if the park and the surrounding area was built with different materials. For instance: *Could the sidewalk be made of cotton? What would happen if it were?* Repeat with different objects and materials.

THE WORLD IS UPSIDE DOWN!

Play the song once and ask students to make the world (of the song) right. Stop after each stanza and ask: *What should a [chair] be made of? What can you make with [cotton]?* Repeat for each stanza. Play the song again and let students sing along and have fun.

INVESTIGATE

Put students into pairs. Distribute the Lesson 3 worksheet. Ask students to cut the cards. Tell them to take turns to make different random matches and say *yes* or *no*, depending on whether they are suitable or not. For example, chair-wood (yes) or glass-doll (no).

SYNTHESIZE

Read the texts about suitable materials and flour. Direct students to the glossary on page 86 to check the meaning of vocabulary words.

Ask comprehension questions. You can quote the Unit 7 song to illustrate suitable and unsuitable materials.

1 Match the most suitable materials to make each object.
Ask students to read the words and complete the activity individually. Check answers as a class.

2 Circle the powders you have in your home.
Ask volunteers to read the picture labels and say what they are used for. Ask other students to help the volunteers if they do not know what the powders are used for. Let them complete the activity individually.

For the next class... OPTIONAL

Have students do the activities on page 58 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation
Have students go back to Activity 1 and explain why each material is suitable for those objects.

Stretch
In pairs, have students discuss things that can be made with flour. (cake, bread, tortillas, cinnamon rolls, biscuits, etc.)

Learning outcome: Students will have learned which materials are suitable for a car.
Keywords: *car, rubber*
Materials: Samples of materials from Lesson 2
Resources: *Is it a strange choice?* projectable activity; Lesson 3 *Vocabulary activity*

CONNECT

Is it a strange choice?

Project the *Is it a strange choice?* activity on the board. Read the texts out loud and ask students to look at the picture and discuss. Ask: *Would you get into a car made of cotton and resin? Why?* Then read the *Find out* box and have students name things made out of the wrong materials.

INVESTIGATE

Ask students to name materials that could be used to make a strong car. If students only say one or two materials, remind them to think about all the parts of a car, inside and outside.

SYNTHESIZE

Read the text about suitable materials for a car. Clarify the meaning of any unknown words.

3 Color the objects that are made from rubber.

Have students look at the pictures as volunteers read the words. Have students discuss in pairs and color the appropriate pictures. Check answers as a class.

4 Circle in red the parts of the car that are metal. Circle in green the parts of the car that are glass.

Have students look at the car carefully and identify the parts made of metal and the parts made of glass. Give them a minute to circle them. Walk around and check or have them compare answers in pairs.

Extra activity

Show students samples of different materials. You can select a few from the samples you brought to class in Lesson 2 (wood, metal, plastic, rubber, teddy bear fur, toweling, nylon, wool, sponge, cotton wool, paper, cardboard, brick, ceramic, rock). Have them choose three materials. Then have them say one suitable and one unsuitable object each material can make.

THAT'S PHENOMENAL!

Explain that some materials can be recycled and may be turned into something else. For example, a newspaper can be recycled and turned into a cereal box, packaging for produce (fruits and vegetables), or paper plates. Plastic milk and juice bottles can be turned into plastic chairs and tables.

DEMONSTRATE

MIND MAP

Have students go to page 117 in their Student Book and add information to the *suitable materials* section. Elicit what they have learned about suitable materials in this lesson and write their ideas on the board while they do the same in their books. When students have completed their mind map, have them review its contents to identify and correct any mistakes.

Go to the Lesson 3 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 59 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation

Have students brainstorm household objects made of rubber. Answers can include rubber ducks, rain boots, gloves, etc.

Stretch

Have students draw a car and label all the materials its parts are made of.

Suitable Materials for a Car

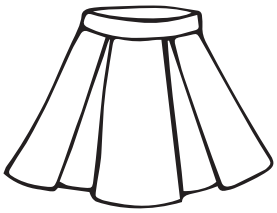
Word Box
car
rubber

What materials are suitable for a **car**? A car has many parts and is made of different materials. Each material serves its purpose.

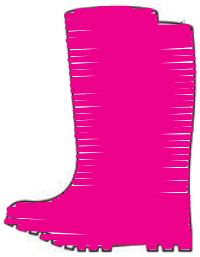


- Metal is used to make the engine, the seatbelt clasps, and the wheels.
- Plastic parts are on the lights, bumpers, and cup holders.
- The tires are made of natural or manufactured **rubber**.
- The windows and mirrors are made of glass.

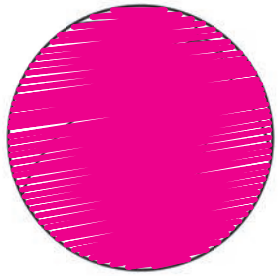
3. Color the objects that are made from rubber.



skirt



boots

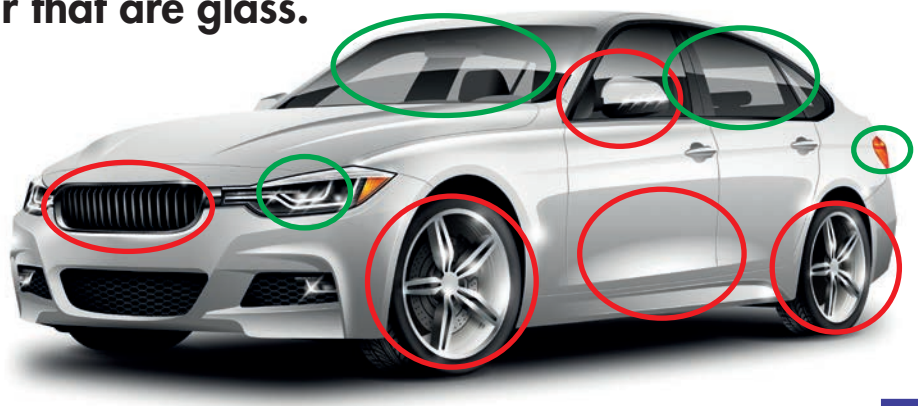


ball



eraser

4. Circle in red the parts of the car that are metal. Circle in green the parts of the car that are glass.



Would it float or sink?

STEAM

Objective:

To test which materials float and which ones sink.

Materials:


a large container


aluminum foil


plastic wrap


paper


toothpick


button


coins


paperclip

Steps:

1. Fill the container with water.
2. In small groups, make a paper boat. Observe if it floats or sinks.
3. Place the other objects in the water one by one. Observe if they float or sink.
4. Write your observations in the table.

Go beyond...
Of all the materials you have tested, which would be most suitable to make a boat? plastic

name of object	the object is made of...	Does the object float?
paper boat	paper	

How can I make a boat?

STEAM

Learning outcome: To learn about suitable materials.
Materials: a large container, aluminum foil, plastic wrap, paper, toothpick, button, coins, paperclip
Resources: Makerspace worksheet

DEMONSTRATE

Use the Makerspace worksheet on the platform. Alternatively, photocopy the Unit 7 Makerspace worksheet on page T129.

GET IT READY

Ask students if they have ever been on a ship, boat, canoe, or something similar. Then ask them to think if they themselves tend to float or sink when they are in a swimming pool. Explain that they are going to experiment with different materials to see if the objects float or sink in water.

Read the information about the materials and the steps in the book and have some volunteers paraphrase each step to check comprehension.

Divide the class into small groups. Remind students that this is a collaborative project, so everyone needs to be involved and have a role. It's also important to listen to everyone in the group. Have each team gather the materials they will need and organize themselves around a table.

GET IT GOING

Allow students enough time to do the activity. Monitor their work. Provide help if needed and ask questions to check understanding, but avoid telling students what to do as much as possible. Encourage them to follow the steps on the project page.

When students have finished, ask several volunteers to describe the process they followed using their own words. Gather the class and have a guided discussion on their findings. Ask: *Which materials did you test? What happened with each of them? Did all the groups get the same results?* Invite other groups to share their results if they are different.

GET IT DONE

Gather students in a circle to have a discussion. Invite them to discuss their observations. Encourage students to reflect on how successfully each item floated.

Ask: *Did you find it easy or difficult to follow the steps? Could you have guessed what was going to happen?* Ask students to speculate how it would be different with other materials. Conclude by summing up the property of the materials needed to make a boat.

Allow some time to talk about their experience in carrying out the project. Ask them what they found interesting, challenging, and enjoyable.

GO BEYOND

In their groups, have students discuss which material would be the most suitable for a boat and why. Have groups share their answers with the rest of the class and, as a class, discuss how they came to that conclusion. Prompt students with additional questions if they find it hard to analyze the information.

Objective: To review objects and materials and how suitable they are for a particular purpose.
Resources: Unit 7 flashcards; Unit 7 poster; Unit 7 Self-assessment; Unit 7 Test

EVALUATE

REVIEW

Display the Unit 7 flashcards and have students name objects that are made from each material. Then display the Unit 7 poster and have students recall why we need to use suitable materials to make things. Have them think about what happens when we use materials that are not suitable.

1 Underline the correct words to complete the sentences.

Have students carefully read the sentences and answer options. Clarify any words they do not remember. Then read the sentences out loud and have students individually underline the correct words. Check answers as a class.

2 Trace the words to complete the sentences.

Have students read the sentences and trace the words. To check comprehension, tell them to close their books and ask: *Can liquids change shape? Are solids runny? Do liquids have a fixed shape?*

3 Match the materials to the objects they are most suitable for.

Ask volunteers to read one word each. Give them a few minutes to match the materials to the objects. Check answers as a class.

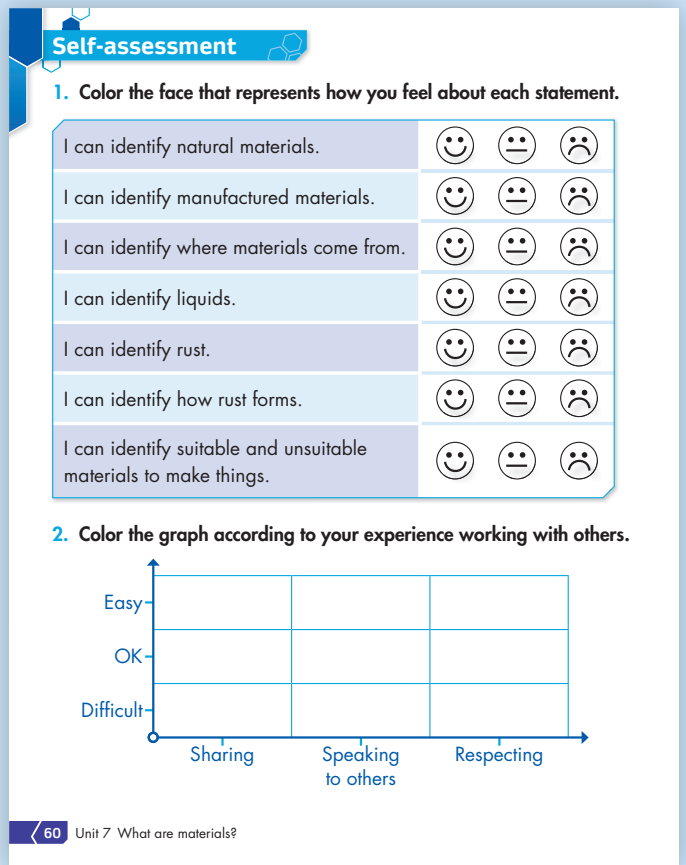
SELF-ASSESSMENT

Use the Unit 7 Self-assessment on the platform. Alternatively, have students turn to page 60 in the Workbook. Read the instructions and self-assessment table out loud and check comprehension. Have students work on their own. Monitor their work. When students finish completing the table, ask them to share what they liked the most about the unit and what they enjoyed learning. If any volunteers are comfortable with it, they can also share what confused them the most or where they feel they need more work.

The graph diagram focuses on the Communication skill. Explain what *sharing*, *speaking to others*, and *respecting* mean and elicit examples of good communication. Then ask them to reflect and decide if it was easy or difficult for them to communicate effectively. Have them color the graph according to their experience.

ASSESSMENT

Use the Unit 7 Test on the platform to evaluate students' performance and development. Alternatively, photocopy the Unit 7 Test from page T148.



Self-assessment

1. Color the face that represents how you feel about each statement.

I can identify natural materials.	☺ 😐 ☹
I can identify manufactured materials.	☺ 😐 ☹
I can identify where materials come from.	☺ 😐 ☹
I can identify liquids.	☺ 😐 ☹
I can identify rust.	☺ 😐 ☹
I can identify how rust forms.	☺ 😐 ☹
I can identify suitable and unsuitable materials to make things.	☺ 😐 ☹

2. Color the graph according to your experience working with others.

Easy
OK
Difficult
Sharing
Speaking to others
Respecting

60 Unit 7 What are materials?

1. Underline the correct words to complete the sentences.

1 Manufactured materials are made ____.

a by people **b** in nature

2 Natural materials are found in ____.

a factories **b** nature

3 Wood, clay, and straw are examples of ____.

a natural materials **b** manufactured materials

4 Concrete, brick, and glass are examples of ____.

a natural materials **b** manufactured materials

2. Trace the words to complete the sentences.

Liquids can change shape and are runny. A solid has a fixed shape and does not move.

3. Match the materials to the objects they are most suitable for.

1	concrete	a	hat
2	straw	b	sidewalk
3	rubber	c	mirror
4	glass	d	tire

What are materials like?

LEARNING OBJECTIVES

- Distinguish between an object and the material it is made from.
- Identify and name a variety of everyday materials.
- Describe the simple physical properties of a variety of everyday materials.
- Compare materials and their properties.

STEAM CONNECTION

- Students identify and classify materials.
- Students perform simple tests to find out which materials are transparent, translucent, or opaque.
- Students use their observations and ideas to suggest answers to questions.
- Students gather and record data to help them answer questions.
- Students observe closely if some classroom objects sink or float.

Use the Unit 8 STEAM worksheet to work on the unit's topic connection with the subject of science.

DIGITAL RESOURCES

Phenomenal video: *How do materials compare to each other?*

Materials all around
Quest: *Materials at home*
Projectable activities: *Float or sink?* (Lesson 1), *Exploring soft materials* (Lesson 2), *Observe it!* (Lesson 2), *Opaque objects* (Lesson 3)
Printable: Lessons worksheets
Vocabulary activities

MAKERSPACE

How do we make a colorful candle holder?

This project can be done at the end of the unit in a single class. Students make a candle holder after testing several materials with a flashlight. Students will reflect on the best material that projects light and is resistant to heat. They test and take notes to finally decide on the material.
Prepare kits of materials per group in advance, but leave room for students to choose the materials they think they could use.

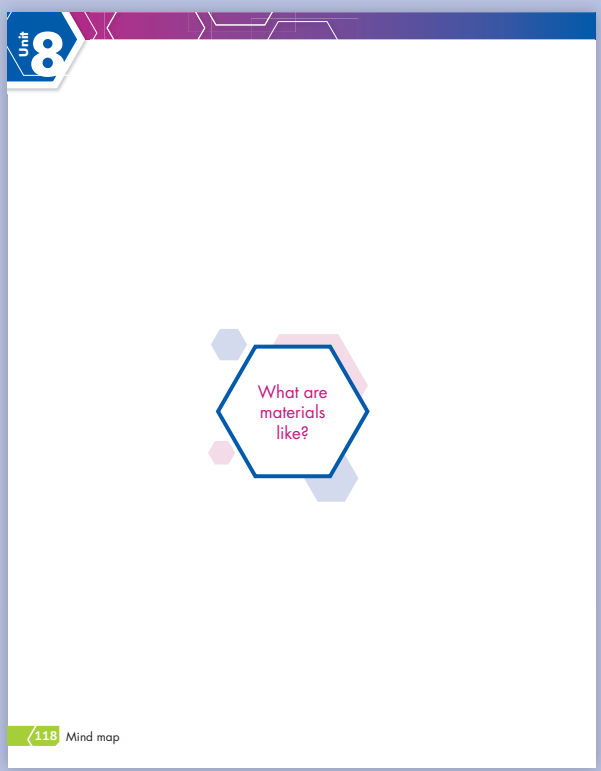
Print the Unit 8 Makerspace worksheet on the platform. Alternatively, photocopy the worksheet on page T130.

ASSESSMENT TOOLS

- Review: Student Book page 97

Self-assessment: Workbook page 68

Assessment: Unit 8 Test



FLASHCARDS

flexible, float, opaque, round, sink, translucent, transparent, weight

Lessons 1 and 3.







POSTER

The Unit 8 poster shows objects commonly found in a child's closet. It can be used to get students to reflect on materials and properties that are around them in everyday life.

Lessons 1, 2, and Assessment.



What are materials like?

Learning outcome: Students will have noticed the different properties of materials around them.
Resources: Unit 8 Phenomenal video: *How do materials compare to each other?*; Unit 8 video worksheet; Quest: *Materials at home*

CONNECT

FLIPPED LEARNING

Before class

Students watch the video before class. Give them the Unit 8 video worksheet beforehand to complete as they watch the video at home. Alternatively, you could watch the video in class.

In class

Ask students to take out their video worksheet and elicit some of the ways we can compare materials. Write the title of the experiment on the board, *How do materials compare to each other?*, and then write *Materials* below the text. Then elicit the materials used. Put students into small groups and have them report on their observations recorded in the table. Have a guided discussion about the results and the conclusion.

INVESTIGATE

Direct students' attention to the photo on the page and ask: *Does this bedroom look like yours? How is it similar? How is it different? Which objects in the photo do you have in your bedroom too?* After discussing these questions, ask students if they can recognize in the picture any of the materials they saw in the Phenomenal video.

Read the introductory text out loud. Students should remember that objects are made of different materials. Have students circle the properties mentioned in the text. Then ask them to call out examples of objects that have those properties.

1 Look around your classroom. Which objects have similar properties?

Give students a few minutes to look around the classroom and notice objects, the materials they are made from, and the materials' properties. Then have them work in groups of four to discuss which objects have similar properties. Walk around to monitor and help. If students cannot see many similarities, prompt them with questions.

QUEST Materials at home

Go to the *Quest* activity on the platform. Ask students to think about their homes. Ask: *What materials can you find in your bedroom? What about in other rooms?* Prompt students with additional questions if they are finding it hard to identify different materials in household objects. Ask students to pay attention to the objects they see in it that they have at home too (they should have them all). Have students recall the objects and materials they are made of. Make a list on the board. You may want to divide the list into objects made of just one material and objects made of two or more. Have students copy the list in their notebook. If time allows, have them draw one of the rooms in their house with all the materials/objects they recalled.

MIND MAP

Start a mind map on the board. Have students go to page 118 in their Student Book and read the title question of this unit at the center of the mind map. Add the concepts *properties of materials, soft and hard materials,* and *transparency* on the map.

Unit 8

What are materials like?

Everything around you is made of some kind of material. These materials have certain properties, or characteristics. They can be hard, soft, flexible, or stiff. They can also be sharp or rounded. Some materials allow light to pass through them and some do not. We learn about materials by looking at them closely, or by touching and feeling them.

Students' own answers.

1. **Look around your classroom. Which objects have similar properties?**



Phenomenal Video: How Do Materials Compare to Each Other?

Lesson 1

What are the properties of materials?



Describing Materials

A **property** is a characteristic. Properties include size, shape, weight, and even sound. We compare materials to determine if their properties are **similar** or **different**. When they are similar, we can put them into a **category**, or group.

Word Box
property
similar
different
category

1. Look at the picture above. Which things have similar properties? List two groups. Possible answers:

1 soft: food, blanket, grass

2 hard: picnic basket, glass, box

2. Find two objects in your classroom that have the same property. Write the property and name of the objects. Possible answers:

property: stiff

1 book

2 chair

What are the properties of materials?

Learning outcome: Students will have learned how to describe materials.
Keywords: *property, similar, different, category*
Resources: Unit 8 flashcard: *round*

CONNECT

Ask students if they have ever gone on a picnic. If they have, ask them what objects and utensils they took with them and what material those objects were made of. If they have not, ask them to imagine which objects they would take and what material these would be made of. Show the Unit 8 flashcard for *round*. Say the word and have students brainstorm objects that are round. Then ask: *What round objects could you take to a picnic?* (ball, plate, etc.)

INVESTIGATE

Have students look at the picture of a picnic in their Student Book and search for the materials they have just identified in the picnic objects (for example, fabric, picnic blanket). For the materials that are not represented in the picture, ask students to say things they could take to a picnic that are made of the other materials. Accept any valid answers.

SYNTHESIZE

Read the text about describing materials. Ask comprehension questions: *What is a property? What properties can we focus on when we look at materials? Can we put similar properties in groups or categories?*

1 Look at the picture above. Which things have similar properties? List two groups.
Have students work in pairs to look at the picture and identify objects that have similar properties. Have them refer back to the list of properties in the text for help. Help them if needed by making a list of different sizes, shapes, weights, and sounds. You can make the list yourself or you can ask students to call out sizes, shapes, etc. that they know. Write these properties on the board and have students copy them in their notebook.

2 Find two objects in your classroom that have the same property. Write the property and name of the objects.
Have students repeat the process with classroom objects now. Ask them to first look around and identify as many objects and materials as they can. Then have them focus on the similarities of those properties. To check, have students share their two objects with the rest of the class. Allow for peer correction.

For the next class… OPTIONAL

Have students do the activities on page 62 in their Workbook. Refer to the Workbook Answer Key on page T112.
Have students bring an object that has a shape they know.

DIFFERENTIATED INSTRUCTION

Remediation

Have students make a list of objects in the classroom and detail their size, shape, weight, and if they make any sound.

Stretch

Have students use the list you created in Activity 1 and give one example per item (one object for *small*, another for *big*, another for *square*, etc.).

Learning outcome: Students will have learned about different properties related to weight, sound, and shape.
Keywords: *light, heavy, loud, quiet, round*
Materials: students' own objects brought from home
Resources: Unit 8 song: *Materials all around*

CONNECT

Have students get in pairs and share the objects they brought from home. Have them say the shape of their object. Additionally, you can have students discuss other properties their objects have. They can check the list you made in the previous class for help. Then have students brainstorm other objects with the same shape as the one they brought.

INVESTIGATE

MATERIALS ALL AROUND

Tell students that they are going to listen to a song about objects, materials, and properties. Elicit the properties they have seen up to this point. Play the song once and have students listen. Ask: *What words did you recognize? Which objects did you hear? Which materials? Which properties?* Play the song a second time and have students sing along. Go to page T168 to see the activity suggested.

SYNTHESIZE

Read the texts about weight, sound, and round objects, and ask comprehension questions. Ask additional questions: *Do you think you could lift an elephant? How about a feather? Does a trumpet make a loud sound? And a fly buzzing? What other round objects do you know?* Then have them circle the words that refer to the properties of materials.

3 Look at the pictures. Which do you think is light and which is heavy?

Have students look at the pictures and identify the objects. Then say: *Picture number one is...* and let them call out their answer. Clarify any misunderstandings they might have if they have never used an inflatable pool chair.

4 How would our lives be different without round objects? Could we replace them with square objects?

Ask students which shape car and bike wheels are. Then ask them to imagine a bike with square wheels and have them discuss what would happen in that case. Then read the questions and have students discuss in groups of four. To develop the Communication skill, remind them to respect speaking in turns and to listen to each other attentively. Walk around and monitor.

For the next class...

Have students do an experiment at home. Ask them to fill a big container with water and put different objects in it. They should take notes with the names of the objects and if they sank or floated. Ask them to bring their notes to class.

DIFFERENTIATED INSTRUCTION

Remediation

Have students name three objects for each category: light, heavy, loud, quiet, round.

Stretch

Have students brainstorm objects that are very heavy (elephant, plane), objects that are very light (feather, eyelash), objects that are very loud (trumpet, fireworks), and objects that give out soft sounds (a fly, etc.). Help them if needed with clues.

Weight

Materials can be **light** or **heavy**. Light objects can be picked up easily. Heavy objects are harder to pick up. You can weigh objects on a balance or scale.

Word Box

light
heavy
loud
quiet
round



Sound

We can group objects by how they sound. Objects make **loud** or **quiet** sounds.





Round Objects

Round objects, like wheels, do not have points, edges, or sides. They roll. They allow large and heavy objects to move easily.

3. Look at the pictures. Which do you think is light and which is heavy?

1 light



2 heavy



4. How would our lives be different without round objects? Could we replace them with square objects? Answers may vary.

Sink or float?

When in a liquid, some materials fall to the bottom, or **sink**. Others **float**, or stay at the top.

Word Box
sink
float
squash
flexible
bend
sharp

How do materials feel?

Slime is exciting to **squash**. It feels fantastic in our hands!

Shoelaces are **flexible** and can **bend** as we tie them. That's how we form a knot!

Be careful! The tips of scissors are **sharp**! We use scissors to cut paper into pieces.

5. Which picture shows a floating object? Which object has sunk?

1



floating object

2



sunk

6. Choose some objects from your classroom. Put them in water and observe. In your notebook, write if they float or sink.

Answers may vary.

7. Circle the properties of a fork.

light sharp flexible

Learning outcome: Students will have learned the concepts of sinking and floating. Students will have learned how materials feel.
Keywords: *sink, float, squash, flexible, bend, sharp*
Materials: notes from experiment students did at home, big bowl with water
Resources: Unit 8 flashcards: *sink, float, flexible*; Unit 8 poster; *Float or sink?* projectable activity; Lesson 1 worksheet (1 per student); Lesson 1 *Vocabulary activity*

CONNECT

Comparing To develop the Comparing skill, have students share their notes about the experiment they did at home with the objects that sank and the ones that floated. Check if any students had different results with the same objects.

INVESTIGATE

Show students the Unit 8 flashcards for *sink*, *float*, and *flexible*. Say the words and elicit their meaning. Display the Unit 8 poster and ask: *Which objects are flexible? Why do you think so?* Guide their answers toward mentioning the word *bend*.

SYNTHESIZE

Read the texts and ask comprehension questions. Direct students to the glossary on page 98 to check the meaning of vocabulary words. Then have them circle the words that refer to the properties of materials.

5 Which picture shows a floating object? Which object has sunk?
Ask students to identify the objects in each picture and say which one is floating and which one has sunk.

Float or sink?
Project the *Float or sink?* activity on the board. Invite volunteers to drag and drop the objects onto the column he or she thinks is the correct one. Discuss answers as a class.

6 Choose some objects from your classroom. Put them in water and observe. In your notebook, write if they float or sink.
Have students choose five small objects and predict if they will sink or float. Put the objects in a big bowl with water. Have students observe what happens and write in their notebook.

7 Circle the properties of a fork.
Have students think about the times they have used a fork. Then let them circle the properties of a fork individually.

Distribute the Lesson 1 worksheet. Read the instructions and ask students to classify the properties from the box in the table.

DEMONSTRATE

MIND MAP
Have students go to page 118 in their Student Book and add information to the *properties of materials* section. Elicit what they have learned about the different properties of materials in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 1 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 63 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation
Say the name of several objects and have students tell you what each object made of. Then have them say if each object floats or sinks.

Stretch
Have students make a list of three to five squashy, flexible, and sharp objects.

What are soft and hard materials used for?

Learning outcome: Students will have learned about soft materials and stuffed toys.
Keywords: *soft, sawdust, button, polyester, thread, fabric*
Materials: sawdust, polyester fluff, polystyrene balls
Resources: *Exploring soft materials* projectable activity; Unit 8 song: *Materials all around*; Unit 8 poster

CONNECT

Show students the materials you brought to class (sawdust, polyester fluff, polystyrene balls) and ask them what they could be used for. Have students come closer and touch the materials.

INVESTIGATE

PHENOMENAL ACTIVITY

Exploring soft materials
Project the *Exploring soft materials* activity on the board. Read the text and ask students the questions as a class. Then do the *Comparing stuffing* activity as a class.

MATERIALS ALL AROUND

Play the song. Ask students to say which objects are mentioned in it (teddy bear, bicycle, wheels). In pairs, have them discuss if they are soft or hard. Ask: *Why do you think a teddy bear should be made of soft materials? Why do you think a bicycle should be made of hard materials?* Play the song again and let students sing along.

SYNTHESIZE

Read the text about soft materials and stuffed toys out loud. Ask comprehension questions: *Can soft materials bend? What are some examples of soft materials? What were original teddy bears stuffed with? What are they filled with now?*

1 Observe a stuffed toy you have. Circle the materials it is made of.
To develop the Critical Thinking skill, ask students to think about a stuffed toy they have—maybe their favorite. Then ask them to remember how it feels when they touch and squish it. Then read the materials and have them circle the ones they think their stuffed toy is made of. Have them check their answer when they go home this afternoon.

Extra activity

Display the Unit 8 poster and ask students to identify as many soft objects as they can. You can choose to time the activity. Then have students say the objects and the materials they are made of.

For the next class... OPTIONAL

Have students do the activities on page 64 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation
Ask students to make a list of household objects that are made from or contain fabric (sofa, couch, curtains, etc.).

Stretch
Have students read the text again and complete a T-chart with materials for *old teddy bears* and *modern teddy bears*.

Lesson 2

What are soft and hard materials used for?

Soft Materials

Soft materials are flexible and feel nice to the touch. They bend and change shape when we move them. Cotton and sponges are soft materials.

Word Box

soft
sawdust
button
polyester
thread
fabric

Stuffed Toys



The first teddy bear was invented over 100 years ago! The original teddy bears were stuffed with **sawdust**. A glass **button** was used for each eye.

Modern teddy bears and other stuffed animals are often filled with cotton, polyester balls, or fluff. **Polyester** is a flexible material made from plastic.



Today, the eyes of stuffed animals are made of plastic, glass, or **thread** sewn into a circle. The outsides of modern stuffed animals are usually made with a **fabric** such as cotton or polyester.

1. **Observe a stuffed toy you have. Circle the materials it is made of.** Students' own answers.

polyester	thread	fabric
cotton	glass	sawdust

Hard Materials

A **hard** material is solid and not flexible. Examples of hard materials are wood and concrete. Many hard materials last a long time and resist tough conditions.

A diamond is the hardest known natural material. Diamonds have different uses apart from jewelry. They can be used to make tools to cut other materials because of their hardness and durability.



Word Box
hard
steel
goggles

2. Walk around your classroom. Touch objects to determine if they are hard or soft. List the hard objects in your notebook.
Answers may vary.

Hard Materials for Protection



Construction workers wear a hard hat to protect their heads at a construction site. Can you guess why?



These boots have **steel**, a type of metal, in the toe area. Can you guess why?



Safety glasses, or **goggles**, protect workers' eyes.

3. Can you think of other workers who wear safety glasses or goggles? Name two. Possible answers:

1 scientists

2 electricians

Learning outcome: Students will have learned about hard materials and how they can protect us.
Keywords: *hard, steel, goggles*
Materials: a box of hollow chocolates with one of them broken, sample materials (piece of fabric, small cardboard box, piece of paper, little tin box)
Resources: Unit 8 poster

CONNECT

Display the Unit 8 poster and have students identify the hard objects. Ask students to work in pairs and discuss their choices. Tell them to mention the material(s) the objects they chose are made of.

INVESTIGATE

Show students the box of chocolates. Tell them that you received a box of hollow chocolates but one of them is broken. Show the broken chocolate. Ask: *Why do you think it broke?* Accept any valid answers from students. Then ask: *How could you protect the other chocolates?* Draw out the idea that the chocolates need to be wrapped up in protective materials. Show the sample materials and ask students to get into groups of four and discuss which ones would be better to protect the chocolates. You can do this as a class, or you can bring a set of materials per group. Have students share their conclusions with the rest of the class and engage in further discussion if needed.

SYNTHESIZE

Read the text about hard materials and direct students to the glossary on page 98 to check the meaning of the vocabulary words. Ask comprehension questions: *What are the properties of a hard material? What's one example of a hard material? What is it used for?*

2 Walk around your classroom. Touch objects to determine if they are hard or soft. List the hard objects in your notebook.
Read the instructions and give students a few minutes to walk around and touch the objects in the classroom. Then have students sit down and say the objects they identified. List them on the board and have students copy the list into their notebook. Additionally, you can have students try to identify the materials, too.

Read the text about hard materials for protection and ask comprehension questions: *What body parts do you need to protect in certain jobs? What objects do you use to protect those body parts?*

3 Can you think of other workers who wear safety glasses or goggles? Name two.
Have students brainstorm possible jobs in which safety glasses or goggles would be necessary. Correct their answers as needed and have them write two options.

THAT'S PHENOMENAL!

Tell students that the hardness of a material can be measured. There is a scale called Mohs scale that goes from 1 to 10, 1 being the softest material and 10 being the hardest. Talc is the softest material (rated a 1 on the scale) and diamonds are the hardest (rated a 10 on the scale).

For the next class... OPTIONAL

Have students do the activities on page 65 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation
Have students make a list of hard objects they can find at home.

Stretch
Have students draw a body and label the body parts that need protection at certain jobs. Then have them add the protective objects and their names.

Learning outcome: Students will have learned that soft and hard materials can be combined to make better objects.
Resources: *Observe it!* projectable activity; Lesson 2 worksheet (1 per pair); Lesson 2 *Vocabulary activity*

CONNECT

Observe it!

Project the *Observe it!* activity on the board. First, have students look at the pictures for one or two minutes. Then, in pairs, ask them to discuss what they think the materials shown are. If they have different answers for any of the materials, encourage them to discuss further and justify their answer. Finally, to check, point to each material and have students call out the names as a class.

INVESTIGATE

Ask students to classify the materials in the *Observe it!* projectable activity into hard or soft materials. Then have them look at the items of clothing they are wearing and tell them to look for an object that combines a soft and a hard material. Lead them to *shoes* for an answer. Ask: *Why do you think shoes combine soft and hard materials?* Let students discuss in pairs and then share their answers with the rest of the class.

SYNTHESIZE

Read the text about soft and hard materials working together. Ask comprehension questions: *Why do some objects combine soft and hard materials? What are some examples of objects that combine soft and hard materials?* Have students circle the examples and the materials they are made of.

4 Look at the picture of a doll. What part is hard? What part is soft?

Have students identify the soft and hard parts on the doll. Additionally, you can ask them what material each part is made of.

5 Draw one object that has both soft and hard parts.

Ask students to think about household objects that have both soft and hard parts and then choose one and draw it. Ask them to share their drawings in groups of four.

Have students work in pairs. Distribute one Lesson 2 worksheet per pair. Ask them to think of new examples, and to not use the ones in previous activities. Tell them to think about household objects, classroom objects, or even objects they see when they go for a walk or to the park. Check answers as a class and compile all their objects in a list on the board.

DEMONSTRATE

MIND MAP

Have students go to page 118 in their Student Book and add information to the *soft and hard materials* section. Elicit what they have learned about soft and hard materials in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 2 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

DIFFERENTIATED INSTRUCTION

Remediation

Have students draw the objects mentioned in the text and label them. For the labels, ask them to write the soft materials in blue and the hard materials in red.

Stretch

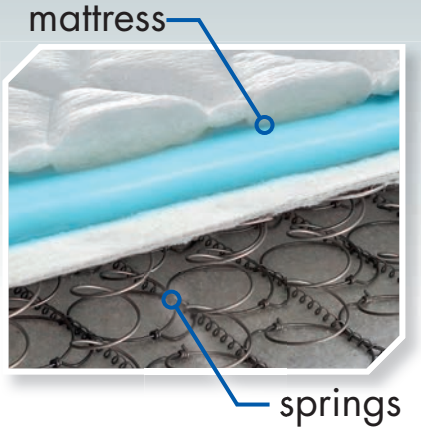
Have students make a list of objects they use daily that combine soft and hard materials.

Soft and Hard Materials Work Together



Many objects have both hard and soft materials working together for the whole object to function well.

On a baby bottle, the bottom holds the milk or formula in hard plastic or glass. The top is soft so babies don't get hurt when they drink milk.



Beds have a hard wood or metal frame, medium-soft mattress, and soft sheets, blankets, and pillows. The combination of hard and soft materials supports our bodies when we sleep, with comfortable materials against our skin.

The dolls head, feet, and hands are hard. Her and clothes are soft.

4. Look at the picture of a doll. What part is hard? What part is soft?



5. Draw one object that has both soft and hard parts. Answers may vary.

Lesson 3

Which materials let light through?

Transparent, Opaque, Translucent

A **transparent** material allows all light to shine through it. A **translucent** material lets some light shine through it. An **opaque** material does not let any light shine through it. A **transparency test** checks how much light gets through a material. An easy test for transparency is to hold a material up to a light source, such as a lamp or the Sun.

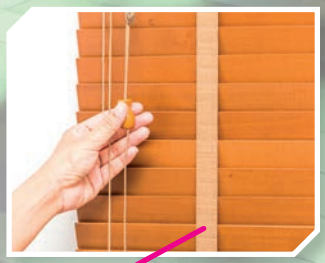
Word Box
transparent
translucent
opaque
transparency test

Plastic wrap, foil, and wax paper are similar because they are all flat, thin materials that help us in the kitchen with food preparation and storage. They allow different amounts of light through them.

1. Match the pictures to the type of materials.

1 

2 

3 

a transparent

b opaque

c translucent

2. Get some plastic wrap, foil, and wax paper. In pairs, discuss which object is transparent, opaque, and translucent.

transparent = plastic wrap opaque = foil translucent = wax paper

Which materials let light through?

Learning outcome: Students will have learned about transparent, opaque, and translucent materials.
Keywords: *transparent, translucent, opaque, transparency test*
Materials: foil, wax paper, plastic wrap, Workbook (optional)
Resources: Unit 8 flashcards: *transparent, translucent, opaque*; Lesson 3 worksheet (1 per group of three)

CONNECT

Display the Unit 8 flashcards for *transparent, translucent,* and *opaque*. Ask students to describe what they can see in the pictures. Say the vocabulary words and have students repeat after you. Then show one flashcard at a time and have students say each word.

INVESTIGATE

Say: *Look at the classroom window. Do you think light can come in through the window? What would happen if we drew the curtains? Now look at the light bulbs. Do you think light goes through them? Are they as clear as the glass on the window?*

SYNTHESIZE

Read the text about what the terms *transparent*, *opaque*, and *translucent* mean. Ask comprehension questions. Have students predict the transparency of plastic wrap, foil, and wax paper. Write their predictions on the board but do not correct any wrong answers at this point.

1 Match the pictures to the type of materials.

Have students describe the pictures. Ask them to match the words to the pictures individually and then check answers in pairs.

2 Get some plastic wrap, foil, and wax paper. In pairs, discuss which object is transparent, opaque, and translucent.

Testing To develop the Testing skill, divide the class into small groups and provide each group with plastic wrap, foil, and wax paper. Have students experiment with them and compare their results with their initial predictions. Get groups to discuss what they think. Then ask them to share their conclusions with the rest of the class.

Extra activity OPTIONAL

Have students do Activity 3 on page 66 in their Workbook.

Divide the class into groups of three. Distribute one Lesson 3 worksheet per group. Read the instructions and let students cut the cards and classify them in their notebook. Help students by prompting with questions if needed.

For the next class… OPTIONAL

Have students do Activities 1 and 2 on page 66 in their Workbook for homework. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation

Reduce the concepts to just *lets light through* and *does not let light through*. Show students more objects or materials and shine a light at them. Have students say if they let light through or not.

Stretch

Ask: *When might it be useful to block out light?* (blackout curtains for bedtime during the summer, blinds for helping us see the whiteboard in the classroom, etc.)

Learning outcome: Students will have learned about more objects and materials that let and do not let light through.
Keyword: *light source*
Materials: a torch; one transparent, one translucent, and one opaque plastic cup
Resources: Unit 8 song: *Materials all around*; *Opaque objects* projectable activity; Lesson 3 *Vocabulary activity*

CONNECT

MATERIALS ALL AROUND

Play the song once and ask students to focus on what the song says about transparent, translucent, and opaque objects. Ask: *Is transparent the same as translucent? What is the difference?* Then ask students to identify which objects are mentioned and what their properties are (glass window, some glass doors, wooden door).

INVESTIGATE

Opaque objects

Project the *Opaque objects* activity on the board. Read the text about opaque objects and how they block light. Ask the question in the box. Help students if needed by prompting them with additional questions so that they get to their own conclusions about how they will need to shine a light against an object to test of it is opaque or not. Then read the *Fun Fact* box and give students a few minutes to use the torch to try and make animal shadows.

SYNTHESIZE

Read the text. Direct students to the glossary on page 98 to check the meaning of the vocabulary word. Check comprehension. Say: *Which object can be transparent or translucent? Which one can be transparent, translucent, or opaque?* Ask students to circle all the objects in the text.

3 Underline the sentences that are true.
Read the sentences out loud and have students call out *true* or *false*. Further explain the lesson's concepts as you see fit depending on students' answers.

4 Try it! Get some paper money. Do a transparency test to see if light reveals images, words, or numbers.
Use the torch to do the transparency test. You can have students come to your desk in small groups to check and then comment on what they see.

DEMONSTRATE

MIND MAP

Have students go to page 118 in their Student Book and add information to the *transparency* section. Elicit what they have learned about transparent, translucent, and opaque properties in this lesson and write their ideas on the board while they do the same in their books. When students have completed their mind map, have them review its contents to identify and correct any mistakes.

Go to the Lesson 3 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 67 in their Workbook. Refer to the Workbook Answer Key on page T112.

DIFFERENTIATED INSTRUCTION

Remediation
Show students the transparent, translucent, and opaque plastic cups and have them shine the torch on them. Have students say each cup's property.

Stretch
Have students order the cups from the most opaque to the least opaque.

A light bulb has transparent or translucent glass to allow different amounts of light or colors through.

Word Box
light source

Plastic can be transparent, translucent, or opaque.

Glass is usually transparent. Sunglasses are translucent to protect our eyes and sometimes to add some color!

Paper money is translucent. Some paper money reveals images when you hold them up to a **light source**. What are the properties of the objects in the pictures below?





3. Underline the sentences that are true.

1 Light bulbs can be translucent or transparent.

2 All plastic is transparent.

3 Sunglasses are translucent.

4. Try it! Get some paper money. Do a transparency test to see if light reveals images, words, or numbers.

How do we make a colorful candle holder?

STEAM

Objective:

To make a candle holder that can project light of different colors.

Materials:

- flashlight
- glass containers
- tin containers
- plastic containers
- cardboard containers
- tissue paper
- colored paper
- magazines
- sequins
- glue

Steps:

1. Look at the materials and choose the ones that would make the best candle holder. Think about…
   - Which material can allow different colors of light through?
   - Which material can resist the heat from the candle?
2. Now test all the materials with the flashlight and see if light can be seen through them.
3. Use the best materials to create your own candle holder in interesting ways.

Go Beyond...
Which materials worked best? Why?



Glass jars can be transparent.

How do we make a colorful candle holder?

Learning outcome: To make a candle holder that can project light of different colors.
Materials: flashlight, glass containers, tin containers, plastic containers, cardboard containers, tissue paper, colored paper, magazines, sequins, glue
Resources: Makerspace worksheet

DEMONSTRATE

Use the Makerspace worksheet on the platform. Alternatively, photocopy the Unit 8 Makerspace worksheet on page T130.

GET IT READY

Ask students if they have ever lit a candle at home and what candles are used for. Direct students' answers into realizing that the main purpose of a candle is to project light. You can also point out that some people use candles for scent purposes and for decoration. Explain to students that they are going to make a candle holder. Remind them of the discussion in Lesson 2 about the best container to keep chocolates from breaking and how some materials are more suitable than others.

Read the information about the materials and the steps in the book and have some volunteers paraphrase each step to check comprehension.

Divide the class into small groups. Have each group gather the materials they will need. Give them the opportunity to choose the materials that they think might be helpful.

GET IT GOING

Make sure each group has their own work station to gather around. Allow students enough time to do the activity and answer the questions in their books. Monitor their work, provide help if needed, and ask questions about their findings.

Once teams have finished, gather the class and have a guided discussion on their findings. Ask several volunteers to describe the process they followed using their own words. Invite other volunteers to share their notes and compare their results. Invite other groups to confirm the results or share theirs if they are different.

GET IT DONE

Gather students in a circle to have a discussion to conclude the observation practice. Invite them to discuss their findings in further detail if they would like to. Ask: *Which materials allowed different colors of light through? Which material can resist the heat from the candle? What differences and similarities could you see when you used a flashlight?*

Invite students to discuss their experience. Ask: *Did you find it easy or difficult to follow the steps? Could you have guessed what was going to happen? How did you find the experiment?* Ask them what they found interesting, challenging, and enjoyable.

GO BEYOND

In their groups, have students discuss which materials worked best and why. Have groups share their answers with the rest of the class and, as a class, discuss how they came to that conclusion. Prompt with additional questions if they find it hard to analyze the information.

Objective: To review and describe materials and their properties
Resources: Unit 8 poster; Unit 8 Self-assessment; Unit 8 Test

EVALUATE

REVIEW

Display the Unit 8 poster. Ask students to name the objects they can find in this closet. Allow them to name other objects they have in their own closets. Then tell students to choose one object. Give students a few minutes to think about the object they are going to mention, its materials, and its properties. You can have students work individually, in pairs, or in small groups. Have students, pairs, or small groups share as a class.

1 Match the opposites.
Have volunteers read one word each. Then have students complete the activity individually. Check answers as a class.

2 Circle True or False.
Read the statements out loud. Have students circle their answers individually. To check, tell them to compare and justify their answers.

3 Trace the word that describes the material that allows the most light through it.
Have students read the three words out loud. Then ask: *Which material lets the most light through it?* Have students say their answer out loud and then trace the word that describes that material.

Additionally, you can have students look at the picture and describe it. Then ask: *Are the objects in the picture transparent, translucent, or opaque? Why?*

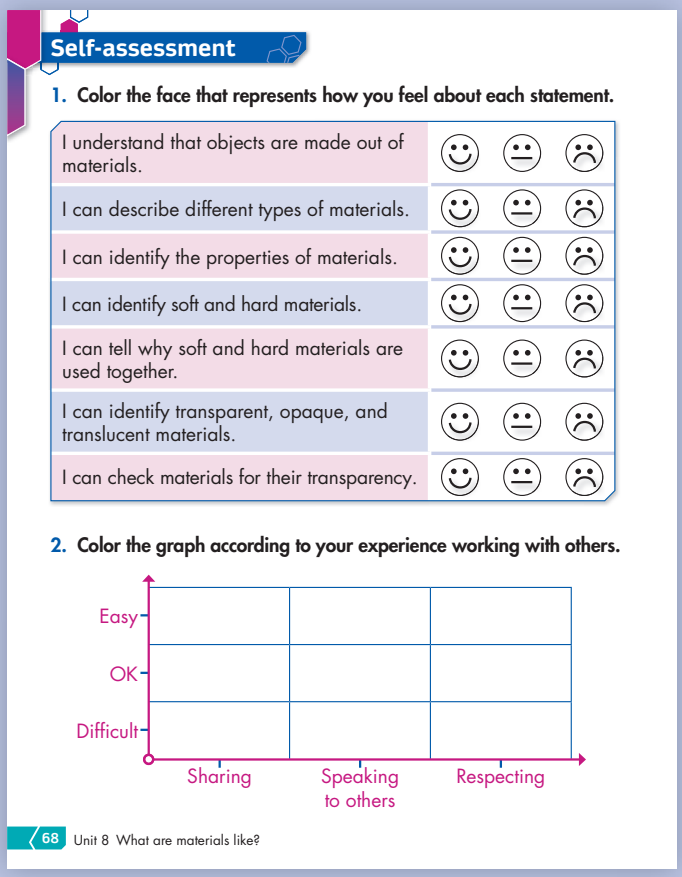
SELF-ASSESSMENT

Use the Unit 8 Self-assessment on the platform. Alternatively, have students turn to page 68 in the Workbook. Read the instructions and self-assessment table out loud and check comprehension. Have students work on their own. Monitor their work. When students have completed their assessment, ask them to share which can-do they found easiest and which they found the hardest.

The graph diagram focuses on the Communication skill. Explain what *sharing*, *speaking to others*, and *respecting* mean and elicit examples of good communication. Then ask them to reflect and decide if it was easy or difficult for them to communicate effectively. Have them color the graph according to their experience.

ASSESSMENT

Use the Unit 8 Test on the platform to evaluate students' performance and development. Alternatively, photocopy the Unit 8 Test from page T149.



Self-assessment

1. **Color the face that represents how you feel about each statement.**

I understand that objects are made out of materials.	☺	😐	☹
I can describe different types of materials.	☺	😐	☹
I can identify the properties of materials.	☺	😐	☹
I can identify soft and hard materials.	☺	😐	☹
I can tell why soft and hard materials are used together.	☺	😐	☹
I can identify transparent, opaque, and translucent materials.	☺	😐	☹
I can check materials for their transparency.	☺	😐	☹

2. **Color the graph according to your experience working with others.**

68 Unit 8 What are materials like?

1. Match the opposites.

1	heavy	2	loud	3	round	4	sink
a	quiet	b	square	c	float	d	light

2. Circle True or False.

1	Soft materials are flexible.	**True**	**False**
2	Wood is an example of a hard material.	**True**	**False**
3	A diamond is an artificially made hard material.	**True**	**False**

3. Trace the word that describes the material that allows the most light through it.

transparent opaque translucent



What are position and motion?

LEARNING OBJECTIVES

- Learn how to indicate different positions in relation to other people or objects.
- Learn that the position of objects can be moved with tools such as magnets.
- Identify the motion for pushing and pulling.
- Notice that movement can be fast or slow.

STEAM CONNECTION

- Students observe objects and their position in relation to other objects or people.
- Students classify toys based on what force (pull or push) they have to exert on them.
- Students predict which materials will be magnetic.
- Students identify magnetic materials.

Use the Unit 9 STEAM worksheet to work on the unit's topic connection with the subject of science.

DIGITAL RESOURCES

Phenomenal video: *Position and Motion*

The position and motion song

Quest: *Magnets and forces*

Projectable activities: *Where is it?* (Lesson 1), *Pushes and pulls* (Lesson 2), *Magnetic materials* (Lesson 3)

Printable: Lessons worksheets

Vocabulary activities

MAKERSPACE

How do we make a magnet maze?

This project can be done at the end of the unit in a single class. Students draw a maze on a paper plate. They use two magnets on each side of the plate to see how they behave. They analyze the behavior of the magnet on top of the plate to conclude if it was easy or difficult to move the magnet through the maze.

Prepare kits of material per group in advance, but leave room for students to choose the materials they think they could use.

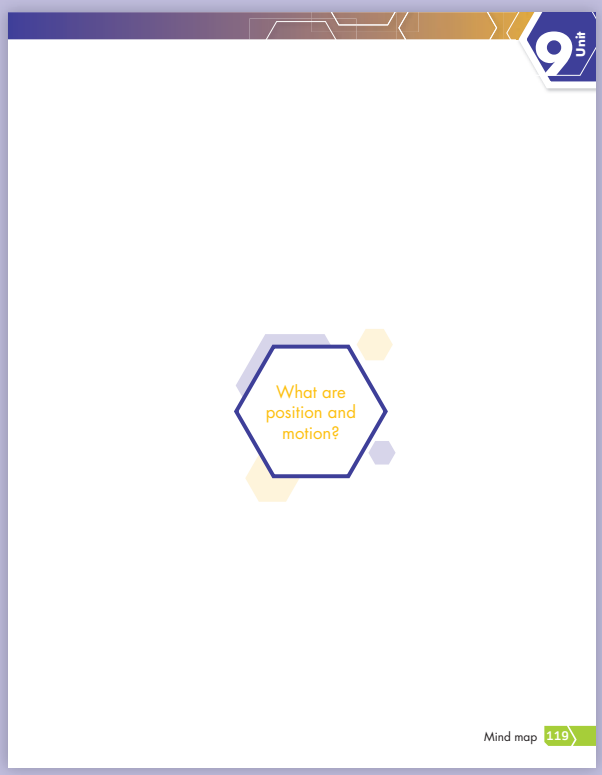
Print the Unit 9 Makerspace worksheet on the platform. Alternatively, photocopy the worksheet on page T131.

ASSESSMENT TOOLS

- Review: Student Book page 109

Self-assessment: Workbook page 76

Assessment: Unit 9 Test



FLASHCARDS

above, attract, behind, below, in front of, next to, pull, push, repel

Lessons 1, 2, 3, and Assessment.



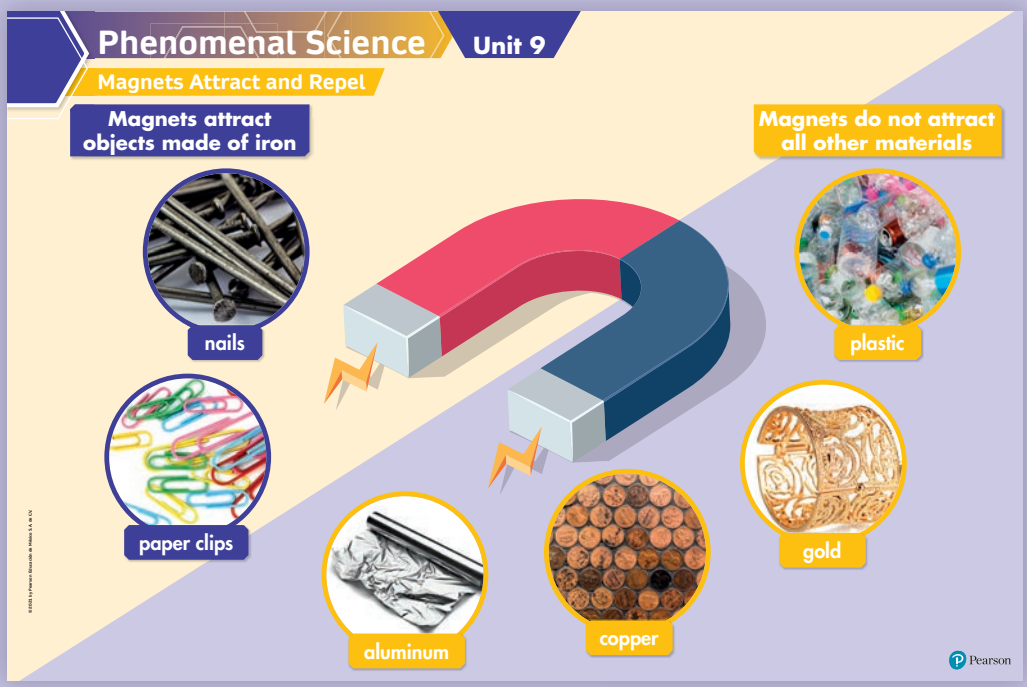




POSTER

The Unit 9 poster shows a magnet and close-ups of different objects and materials that would be attracted and not attracted by the magnet. The poster is visually divided into two parts to contrast the objects.

Lesson 3 and Assessment.



What are position and motion?

Learning outcome: Students will have learned what position and movement are.
Keyword: *movement*
Resources: Unit 9 Phenomenal video: *Position and motion*; Unit 9 video worksheet; Quest: *Magnets and forces*

CONNECT

FLIPPED LEARNING

Before class
Students watch the video before class. Give them the Unit 9 video worksheet beforehand to complete as they watch the video at home. Alternatively, you could watch the video in class.

In class
Ask students to take out their video worksheet and elicit what position and motion are. Write the title of the experiment on the board, *Position and motion*. Put students into small groups and have them report on their observations recorded in the table. Have a guided discussion about the results and the conclusion.

SYNTHESIZE

Read the text out loud. Ask comprehension questions: *Can you change the position of objects? Take your pencil and change its position. What is that called? You used your hands to move your pencil. What tools can move objects?*

1 Look at the picture. Point to the runner who is in front of everyone else. Point to the runner who is behind everyone else.
Have students look at the picture and identify where each child is. Read the instructions out loud and have them point. Pair students up and have them compare if they are pointing at the same runner for each directive.

2 When do you move quickly? When do you move slowly? Make a list in your notebook.
Ask students to think about occasions or moments in their life when they had to move quickly, and others when they had to move slowly. Tell them it could have been to move quickly to win a race or catch a bus, or to move slowly so as not to wake up their baby brother or sister. Have students make their lists and then compare them in groups of three.

QUEST Magnets and forces

Go to the *Quest* activity on the platform. Have students look at the picture and identify which objects are being pushed and pulled. Mime the pushing and pulling actions to convey meaning. Then, to preview the position of objects, call out items in the picture and ask students where they are in relation to others. Alternatively, have students point them out (without using prepositions).

MIND MAP

Start a mind map on the board. Have students go to page 119 in their Student Book and read the title question of this unit at the center of the mind map. Add the concepts *positions*, *movement*, and *magnets* around the map.

Unit 9

What are position and motion?

Where is it?

Word Box
movement

People describe where they are and where objects are in relation to other people or objects. The position of objects can be changed. This is called **movement**. Tools, such as magnets, can move objects. Movement can be fast or slow.

1. **Look at the picture. Point to the runner who is in front of everyone else. Point to the runner who is behind everyone else.**

2. **When do you move quickly? When do you move slowly? Make a list in your notebook.**
Students' own answers.



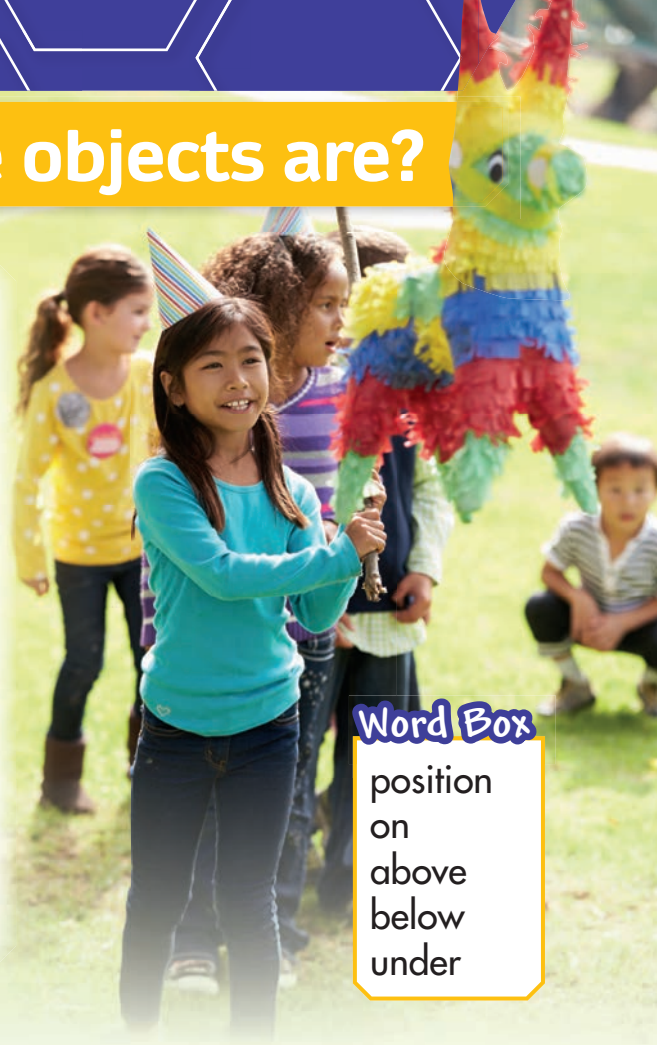
How do we know where objects are?

On, Above, Below, and Under

The **position** of an object is where it is in relation to another object. An object can be **on**, **above**, or **below** another object. Look at the picture.

In the picture, you can see:

- The hats are on the children's heads.
- The piñata is above the girl.
- The grass is **under** the children's feet.



Word Box

position
on
above
below
under

1. List three things that are above and below you right now.
Answers may vary.

above	below

2. Go outside. What can you see above you? Complete the sentence. Answers may vary.

Outside, _____ and _____ are above me.

How do we know where objects are?

Learning outcome: Students will have identified different ways to describe the position of objects.
Keywords: *position, on, above, below, under*
Materials: pencils, pens, erasers, crayons, pencil sharpeners, books
Resources: Unit 9 flashcards: *above*, *below*; Unit 9 song: *The position and motion song*

CONNECT

Display the Unit 9 flashcards for *above* and *below*. Ask students to describe the pictures. Tell them all the objects and people in the picture have a different position in relation to another object or person. Show the Unit 9 flashcard for *above* and say: *The hot-air balloon is above the ground. What are the two objects considered here?* (hot-air balloon and ground). Repeat with the Unit 9 flashcard for *below*. Make sure students understand that when they are specifying the position of one object, there is another object in relation to it.

THE POSITION AND MOTION SONG

Tell students that they are going to listen to a song and learn about position and motion. Play the Unit 9 song once and have students listen. Ask: *What words did you recognize? Which positions did you hear? Do you remember how the chorus goes?* Play only the second stanza (the one that starts with, "In the classroom...") and ask students to answer these questions in pairs: *Who sits next to you? Who sits behind you? Who sits in front of you?* Play the song a second time and have students sing along. Go to page T169 to see the activity suggested.

SYNTHESIZE

Read the text about different positions out loud. *On* and *under* are new prepositions in the lesson, so you can ask students questions to check comprehension: *What's on your desk now? What's under your shoes?*

1 List three things that are above and below you right now.

Ask students to look around them for one minute and then complete the table with things that are above and below them. If there are not many things on the floor, you can give students a minute to move their backpacks, books, pencils, etc. around so they actually have objects below them. If you are on a higher/lower floor, have them think about the classrooms below/above them, too.

2 Go outside. What can you see above you? Complete the sentence.

Take students outside and have them look up. Caution them not to look directly at the sun when doing so. Then have them complete the sentence with two things they can see above them. Ask them to share their sentences in pairs.

For the next class... OPTIONAL

Have students do the activities on page 70 in their Workbook. Refer to the Workbook Answer Key on page T113.

DIFFERENTIATED INSTRUCTION

Remediation

Have students get five objects: a pencil, a pen, an eraser, a crayon, and a pencil sharpener. Ask them to place a book on the table. Then give them instructions to put the different objects in different positions in relation to the book. For example, say: *Put the pencil on the book. Put the eraser next to the book.* etc. Do it slowly and provide help for students who are struggling.

Stretch

Have students get the same five objects and a book, but have them work in pairs and take turns giving instructions to each other. Monitor and correct if necessary.

Learning outcome: Students will have learned the positions *in front of* and *behind*.
Keywords: *in front of, behind*
Resources: Unit 9 flashcards: *in front of*, *behind*; Lesson 1 worksheet (one per student)

CONNECT

Display the Unit 9 flashcards for *in front of* and *behind*. Ask students to describe the pictures. Remind them that all the objects or people in the pictures have a different position in relation to another object or person. Show the flashcard for *in front of* and say: *Who is in front of the line? Who is in front of the boy in the blue T-shirt?* Keep asking questions to make sure students understand the position *in front of*. Repeat using the Unit 9 flashcard for *behind*.

INVESTIGATE

Have students form one long line or several short ones, depending on the space in the classroom. Ask individual students first: *Who is in front of you? Who is behind you?* Have students quickly and randomly change positions or lines. Ask the questions again. Additionally, you can give different instructions, such as: *Go back to your seat if you have someone wearing a short-sleeved T-shirt in front of you*. Continue until only one (or a few) students are left standing.

SYNTHESIZE

Read the text out loud. Ask true or false comprehension questions about the position of the people in the picture: *The boy in the blue T-shirt is in front of everyone else.* (false) *The boy in the red T-shirt is behind everyone else.* (true) Provide help where needed.

3 Look at the picture again. Complete the sentences.

Have students look at the picture once more and carefully read the sentences. You can read the sentences for them. Ask them to complete the sentences individually. Then have them check their answers with the person in front of (or behind) them. Monitor as necessary.

4 Who are you in front of now? Who are you behind?

Read the instructions and have students complete the details. If your classroom arrangements do not favor the practice of these position words, you may choose to rearrange just for this lesson. Have students check answers in pairs and correct each other.

Distribute the Lesson 1 worksheet. Explain the activity and let them work individually. Once they have finished, let them check their answers in pairs. Check pairs who have different answers.

For the next class... OPTIONAL

Have students do Activity 3 on page 71 in their Workbook. Refer to the Workbook Answer Key on page T113.

DIFFERENTIATED INSTRUCTION

Remediation

If students struggle to grasp the concepts of *in front of* and *behind*, practice the game in the Investigate stage with 3-student lines. This way, they will only have one person to focus on in front of and behind them.

Stretch

Have students look at the picture in the book and say a sentence about it to a classmate. The sentence can be true or false. Ask them to take turns to say sentences and have their classmates say if the sentences are true or false.

In Front of and Behind

Word Box
in front of
behind

An object can be **in front of** or **behind** something else. Look at the picture.

- The child in the green shirt is in front of everyone else.
- The child in the yellow shirt is in front of the child in the blue one.
- The teenager in the pink shirt is behind the boy in the blue one.
- The teenager in the orange shirt is behind everyone else.



3. Look at the picture again. Complete the sentences.

1 The child in the blue shirt is **in front of** the teenager in the pink shirt.

2 The child in the yellow shirt is **behind** the child in the green shirt.

4. Who are you in front of now? Who are you behind?

Answers may vary.



Next to and Between

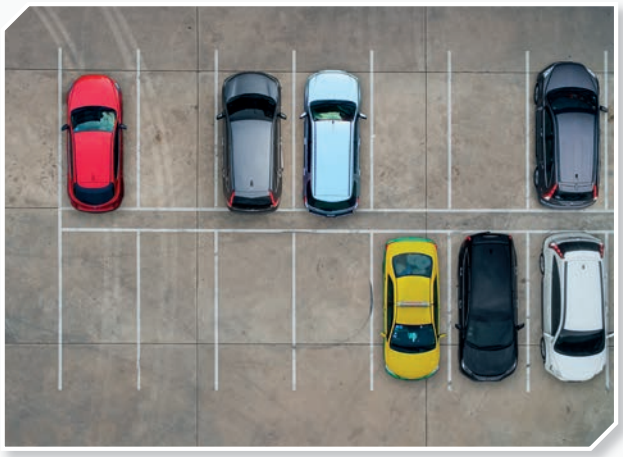
If something is **next to** another thing, it is beside it on the left or right. We use **between** to talk about an object that is placed in the middle of two other objects.

Word Box

next to
between

Look at the picture above. The white sneaker is next to the green sneaker.

Look at the picture to the right. The yellow car is next to the black car. The gray car is in between the red car and the light blue car.



5. **Get into groups of five. Stand next to someone who is the same height as you. Both of you move in between two people who are shorter than you. After that, have someone stand in front of everyone else.**

6. **Choose an object in your bedroom. In your notebook, draw the object and the objects around it. Write what is in front of, next to, and behind it.** Students' own answers.

Learning outcome: Students will have learned the positions *next to* and *between*.
Keywords: *next to, between*
Materials: white sheets of paper (1 per student), index cards (for Stretch activity)
Resources: Unit 9 flashcard: *next to*; *Where is it?* projectable activity; Lesson 1 *Vocabulary activity*

CONNECT

Display the Unit 9 flashcard for *next to*. Explain the concept of *between* using three objects. Distribute the white sheets of paper and ask students to create a flashcard to depict the position *between*. Write the word on the board and have them copy it on their flashcard. Monitor and correct their work if needed. Display their flashcards in class.

SYNTHESIZE

Read the text out loud. Ask comprehension questions: *What is another word for* next to? (beside) *What is another word for* between? (in the middle)

5 **Get into groups of five. Stand next to someone who is the same height as you. Both of you move in between two people who are shorter than you. After that, have someone stand in front of everyone else.**
To develop the Collaboration skill, start by reading the instructions step-by-step so that students can follow. Monitor and help if needed. Ask groups to check if other groups are following the instructions correctly. Remind them to do so with positive words and always in a respectful way.

6 **Choose an object in your bedroom. In your notebook, draw the object and the objects around it. Write what is in front of, next to, and behind it.**
Ask students to think of their bedroom and pick one object in it. Then let them know they have to identify something that is in front of, next to, and behind that object they chose. Ask them to draw the scene with the objects in the correct positions. Pair students up and have them describe their drawings to each other.

DEMONSTRATE

PHENOMENAL ACTIVITY

Where is it?
Project the *Where is it?* activity on the board. Use the objects in the picture to ask students questions to elicit and consolidate the vocabulary for positions: *Where is the (object)? Where are the (objects)?* Repeat with all objects or until you have practiced all prepositions of place.

MIND MAP

Have students go to page 119 in their Student Book and add information to the *positions* section. Elicit what they have learned about positions in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 1 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do Activities 4 and 5 on page 71 in their Workbook. Refer to the Workbook Answer Key on page T113.

DIFFERENTIATED INSTRUCTION

Remediation
Explain that *next to* and *between* have to do with what we have beside us. An object that is *next to* us (or another object) can be on either side. When an object is *between* two objects, it means that it has objects on both of its sides.

Stretch
Have students create their own flashcards for the position words learned in this lesson.

How do objects move?

Learning outcome: Students will have learned that pushing means moving away from you.
Keywords: *push, away from*
Resources: *Pushes and pulls* projectable activity; Unit 9 flashcard: *push*

CONNECT

PHENOMENAL ACTIVITY

Pushes and pulls

Project the *Pushes and pulls* activity on the board. Read the text about the drawers. Have students mimic pulling a drawer open and pushing a drawer close several times as they say: *pull, push*. Read Activity 1 and have them work in groups of four. If students struggle, you can help them by asking them to look around the classroom for objects that can be both pushed and pulled (windows and doors, for example). Direct students' attention to the picture of the swing and read activities 2 and 3. Have them discuss in the same groups and report their answers back to the rest of the class.

INVESTIGATE

Display the Unit 9 flashcard for *push*. Ask students to describe the picture first. Then ask: *When you sit on a swing, what does your mom or dad do so that the swing starts moving?* Have them answer in a full sentence using the word *push*. Ask: *When you first learned how to ride a bike, what did your mom or dad do?*

SYNTHESIZE

Have students look at the pictures on the page and describe them in detail. Then read the text out loud. Direct students' attention to the pictures again and ask: *What is the girl pushing in the snow?* (a sleigh) Repeat for each of the pictures (shopping cart, basketball, soccer ball). Additionally, you can ask: *Which word do we use to say we are pushing a basketball into the hoop?* (throw or shoot) *Which word do we use to say we are pushing a soccer ball with our foot?* (kick)

1 List the sports in which you push a ball away from you.

Have students brainstorm several sports. Write them on the board. Then review one by one and ask students to say if you push a ball away from you or not in that sport. Erase the sports in which you do not push a ball. Finally, have students choose four and copy them in their books.

2 Give a pencil a push on a flat surface. How far does it go? Complete the sentence.

Read the instructions for students as many times as they need. Have them complete the activity individually. Have volunteers share their answers with the rest of the class.

For the next class... OPTIONAL

Have students do Activity 1 on page 72 in their Workbook. Refer to the Workbook Answer Key on page T113.

DIFFERENTIATED INSTRUCTION

Remediation

Have students place different objects on their desk in front of them and push them slightly. Ask: *Do the objects move away from you or toward you? What is that called?*

Stretch

In pairs, have students share which objects they have pushed in the school yard at recess time.

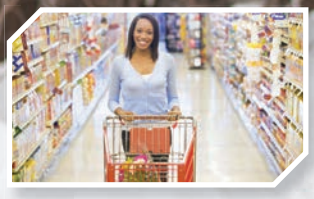
How do objects move?

Push Away From

When you **push** something, you are moving it **away from** you.

Word Box
push
away from

Look at the picture. The girl is pushing her friend on the sled.



The woman is pushing the shopping cart to move it.

The boy is throwing the basketball away from him.





The soccer player is kicking the ball away from him.

1. List the sports in which you push a ball away from you.
Possible answers:

1 soccer

2 baseball

3 rugby

4 baseball



2. Give a pencil a push on a flat surface. How far does it go? Complete the sentence. Answers may vary.

My pencil rolled _____.

Pull Toward

When you **pull** objects, you bring them **toward** you. Look at the pictures. Pull is the opposite of push.

Word Box

pull
toward



The children pull the wagon.



The child pulls the zipper up toward her face.



The dog pulls the woman.

3. Circle the toys you need to pull to play with.

1 

2 

3 

4. Underline the correct sentences.

1 You can pull objects toward you.

2 Many objects can be pushed and pulled.

3 Everything you pull is heavy.

Learning outcome: Students will have learned that pulling means moving toward you.
Keywords: *pull, toward*
Materials: a selection of moving toys including toy cars, pull back and release moving toys, yo-yos, balls, paper planes/gliders, etc.
Resources: Unit 9 flashcard: *pull*; Lesson 2 worksheet (1 per group); Unit 9 song: *The position and motion song*

CONNECT

Get students into big groups and assign a few moving toys to each group. Ask them to classify the toys into those they have to push for them to move and those that need a different kind of movement. Monitor and help them if needed. Once they have classified the toys, ask: *Which toys did you have to push away from you so they would move? What happened with the other toys? Did you have to move them away from you or closer to you?* Say: *When you move something toward you, that is called* pulling. Display the Unit 9 flashcard for *pull* and ask: *What do you think the kids are doing with the rope: moving it away from them or toward them? What is that movement called?* Distribute the Lesson 2 worksheet. Have each group complete it. Help them with the toy's names if needed.

INVESTIGATE

Have students recall what they did since they woke up this morning. Ask them to focus on actions. Tell them to carefully analyze each action to see if they pushed or pulled something. Give them some examples of things you did, such as moving the bed sheets, a curtain, your bag, a glass of water, a plate, etc. Have them share the actions and movements they did in pairs. Then have some volunteers share one action each with the rest of the class.

THE POSITION AND MOTION SONG

Play the Unit 9 song once and have students listen. Ask: *What do we do to sit down at school? And to stand up?* Play the song a second time and have them sing along.

SYNTHESIZE

Have students describe the pictures in detail. Read the text out loud. Ask comprehension questions.

3 Circle the toys you need to pull to play with.
Read the instructions and let students answer individually. Then check answers as a class.

4 Underline the correct sentences.
Read the sentences out loud. Let students raise their hands if they think a sentence is true. If there is any disagreement, let students justify their answers and solve any misunderstandings they might still have.

For the next class... OPTIONAL

Have students do Activities 2 and 3 on pages 72 and 73 in their Workbook. Refer to the Workbook Answer Key on page T113.

DIFFERENTIATED INSTRUCTION

Remediation
Have students place different objects on their desk in front of them and pull them closer. Ask: *Do the objects move away from you or toward you? What is that called?*

Stretch
In pairs, have students share which objects they have pulled in the school yard at recess time.

Learning outcome: Students will have realized that objects can move fast or slowly.
Keywords: *fast, slowly*
Materials: *The Hare and the Tortoise* fable
Resources: Lesson 2 *Vocabulary activity*

CONNECT

Tell students: *Imagine you and a classmate want to race. If you want to win, would you walk or run to the finish line? Why?* Direct students' answers toward realizing that they can move at different speeds. If time allows, read a children's version of *The Hare and the Tortoise* fable and discuss who was faster and who was slower.

Extra activity

Have students think about as many means of transportation as they can and classify them according to speed, from the fastest to the slowest. Check answers as a class and write the classification on the board.

SYNTHESIZE

Read the text out loud. Ask comprehension questions. Then ask students to look at the pictures. Ask: *Which do you think goes faster, the merry-go-round or the roller coaster?*

5 Circle the animals that move slowly.
Have students name the animals in the picture. Help them if needed. Then have them complete the activity individually. Check answers as a class. Solve any questions students might have about the speed of the animals in the picture.

6 In pairs, discuss whether a push or a pull can make these objects move faster.
Have students describe what they see in the pictures. To develop the Communication skill, pair them up and ask them to discuss whether a push or a pull can make these objects move faster. Remind them to respect each other's turn and listen attentively.

THAT'S PHENOMENAL!

Tell students that the fastest land animal in the world is the cheetah, the fastest sea animal is the sailfish, and the fastest bird is the Peregrine falcon. If possible, show videos of these animals in class.

DEMONSTRATE

MIND MAP

Have students go to page 119 in their Student Book and add information to the *movement* section. Elicit what they have learned about how objects move in this lesson and write their ideas on the board while they do the same in their books.

Go to the Lesson 2 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do Activities 4 and 5 on page 73 in their Workbook. Refer to the Workbook Answer Key on page T113.

DIFFERENTIATED INSTRUCTION

Remediation

Have students name one or two animals or means of transportation that move fast and one or two that move slowly. Ask them to draw and label them in their notebook.

Stretch

Students should now know that people, objects, animals, and machines can move by themselves or if you push or pull them. Elicit what else moves by prompting them with questions.

Fast and Slow

Some objects move **fast** and others move **slowly**. A push or a pull may change how quickly the object moves.

A merry-go-round is usually slow.

A roller coaster can go very fast.



Word Box

fast

slowly

5. Circle the animals that move slowly.



6. In pairs, discuss whether a push or a pull can make these objects move faster.

Both a push or a pull can make these objects move faster.





Lesson 3

What do magnets do?

Magnets and Attraction

A **magnet** is a piece of metal that attracts other metals to it. **Attract** means to pull something toward itself. Magnets attract some metals like iron, which is found in paper clips and screws. Many refrigerators are covered in magnets!

Word Box
magnet
attract

1. Look at the picture. Circle the objects that are attracted to a magnet.



2. Does your refrigerator at home have magnets on it? Draw them in your notebook. Students' own answers.

What do magnets do?

Learning outcome: Students will have learned what a magnet is and what it does.
Keywords: *magnet, attract*
Materials: refrigerator magnets
Resources: Unit 9 poster; Unit 9 flashcards: *attract, repel*

CONNECT

PHENOMENAL ACTIVITY

Show students the refrigerator magnets and ask them if they have magnets on their refrigerator at home. Elicit why they stay stuck to the refrigerator. Display the Unit 9 poster. Ask students to describe what they can see. Explain that the objects on the left side (beige background) are objects that will stick to the magnet if you hold them close to it. Ask students to name the objects in those pictures (nails and paper clips) and say the material they are made of. Tell students that magnets attract objects made of iron. Then explain that the rest of the objects and materials on the right side (lavender background) will not stick to a magnet. Tell them that magnets do not attract all other materials. Leave the poster up.

INVESTIGATE

Display the Unit 9 flashcards for *attract* and *repel*. Elicit the meaning of the words. Direct students' attention to the poster if they are struggling with the concepts. Get students to form two lines at the back of the classroom. Place the flashcards on the board or wall at a comfortable height for students. Say a material or object from the poster (nails, paper clips, aluminum foil, copper coins, gold bracelet/ring, plastic bottle/cup/pen) and have two students run to the correct flashcard to indicate whether the magnet will attract or not attract that object or material. Play several rounds or until every student has played at least once.

SYNTHESIZE

Read the text about magnets and attraction out loud. Ask comprehension questions: *What is a magnet? What does* attract *mean? What materials do magnets attract?*

1 Look at the picture. Circle the objects that are attracted to a magnet.
Have students look at the picture and name all the objects in it. Then ask them to say the materials those objects are made of. Tell them to pay attention to the objects that are made of two or more materials. Help if needed. Then have them complete the activity individually. Check answers as a class. Explain any misconceptions students might have about materials that magnets attract.

2 Does your refrigerator at home have magnets on it? Draw them in your notebook.
Ask students to draw the magnets they have on their refrigerator. If they do not have any, tell them they can draw a few they would like to have.

For the next class... OPTIONAL

Have students do the activities on page 74 in their Workbook. Refer to the Workbook Answer Key on page T113.
Ask students to bring one refrigerator magnet to class. Tell students not to worry if they do not have refrigerator magnets at home as they will be sharing in class.

DIFFERENTIATED INSTRUCTION

Remediation
Have students create a poster with a clear division. They will draw and label on one side objects that magnets attract and on the other side objects that magnets do not attract.

Stretch
While racing in the Investigate stage, you can add objects that are not on the poster, but help students by saying the material. For instance, *iron fork* or *paper bill*.

Learning outcome: Students will have learned about magnets and repulsion.
Keyword: *repel*
Materials: one refrigerator magnet per student (homework); a tin can, paper clips, a doll or plastic/rubber figurine, an empty plastic bottle, a pencil, a nail or screw, a glass
Resources: *Magnetic materials* projectable activity; Unit 9 song: *The position and motion song*; Lesson 3 worksheet; Lesson 3 *Vocabulary activity*

INVESTIGATE

Magnetic materials

Predicting Display the *Magnetic materials* activity on the board. To develop the Predicting skill, display all the objects required on your desk and ask students to predict which objects will be attracted and which will be repelled by the magnet. Record their predictions or have them do this in their notebooks. Check their predictions as a class and proceed to confirm by placing the objects close to the magnet. Ask them to correct their list if needed. Read question 3 and have students answer. Then read the text about iron and the instructions.

THE POSITION AND MOTION SONG

Play the Unit 9 song and have students sing along. Have students learn the last stanza about magnets and sing it as a group.

SYNTHESIZE

As consolidation, read the text about magnets and repulsion. Ask comprehension questions.

3 Test the following objects with a magnet. You will feel a pull toward the magnet if the objects are attracted to it. Circle the objects that are attracted to the magnet.
Read the instructions and let students work individually. To develop the Critical Thinking skill, pair students up to explain to each other why each object acted as it did. Monitor and help if needed.

Distribute the Lesson 3 worksheet. Give students some time to write as many objects as they can remember in each column. You can time the activity and see who has a longer list when the time is up. Check answers as a class.

DEMONSTRATE

MIND MAP

Have students go to page 119 in their Student Book and add information to the *magnets* section. Elicit what they have learned about magnets, attraction, and repulsion in this lesson and write their ideas on the board while they do the same in their books. When students have completed their mind map, have them review its contents to identify and correct any mistakes.

Go to the Lesson 3 *Vocabulary activity* on the platform to practice the vocabulary learned in the lesson.

For the next class... OPTIONAL

Have students do the activities on page 75 in their Workbook. Refer to the Workbook Answer Key on page T113.

DIFFERENTIATED INSTRUCTION

Remediation
Have students say one object that would be attracted by a magnet and one that would not. Then show two magnets with like poles facing each other. Ask students to recall the name for this action.

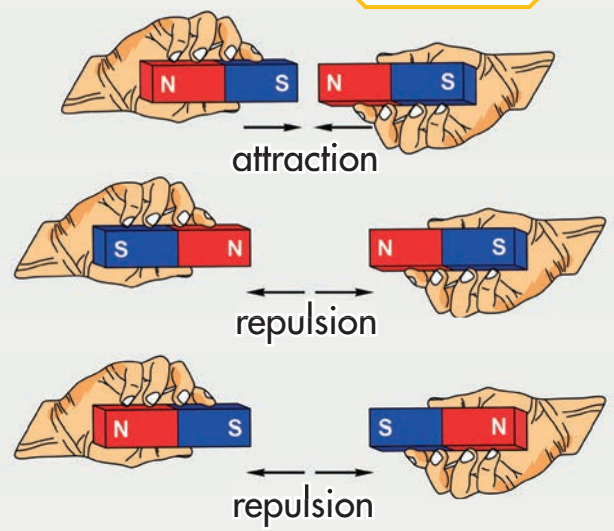
Stretch
Get students into pairs and ask them to define the words *attract* and *repel* using their own words.

Magnets and Repulsion

A magnet can attract another magnet or repel it. **Repel** means to push away. Magnets repel all objects that they do not attract. Magnets do not attract metals like aluminum, copper, and gold. Magnets also do not attract objects that are not metal.

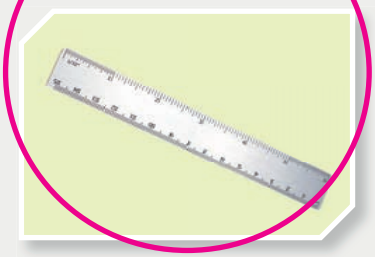
Test two magnets together in different positions.

Word Box
repel



3. Test the following objects with a magnet. You will feel a pull toward the magnet if the objects are attracted to it. Circle the objects that are atracted to the magnet.

1 ruler



3 paper



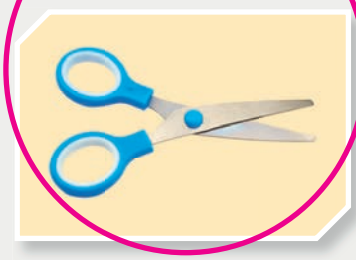
5 glue stick



2 eraser



4 scissors



6 key



How do we make a magnet maze?

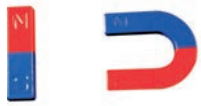
STEAM

Objective:

To manipulate one magnet using another magnet.

Materials:


marker


two magnets


paper plate

Steps:

1. Draw a maze on your paper plate.
2. Place one magnet on the maze and the other magnet under the plate.
3. Move the magnet through the maze.



Go Beyond...

Was it easy or difficult to move the magnet through the maze? What would you do differently next time?

Students' own answers.

How do we make a magnet maze?

STEAM

Learning outcome: To manipulate one magnet using another magnet.
Materials: marker, two magnets, paper plate
Resources: Makerspace worksheet

DEMONSTRATE

Use the Makerspace worksheet on the platform. Alternatively, photocopy the Unit 9 Makerspace worksheet on page T131.

GET IT READY

Ask students if they have ever solved a maze activity or game, or if they have ever been in a real, life-sized maze. Additionally, ask them if they have ever played with magnets and what their experience has been like. Ask volunteers to share their experiences. Explain that they are going to do an experiment with magnets.

Read the information about the materials and the steps in the book and have some volunteers paraphrase each step to check comprehension.

Divide the class into small groups. Remind students that this is a collaborative project, so everyone needs to be involved and have a role. It's also important to listen to everyone in the group. Have each group gather the materials they will need and organize themselves around a table.

GET IT GOING

Allow students enough time to do the activity. Monitor their work. Provide help if needed and ask questions to check understanding. Avoid telling students what to do as much as possible. Encourage them to follow the steps on the project page.

When students have finished, ask several volunteers to describe the process they followed using their own words. Gather the class and have a guided discussion on their findings. Ask groups to compare results with other groups. Ask: *Did all the groups get the same results?* Invite other groups to share their results if they are different. Conclude by summing up each group's results.

GET IT DONE

Encourage students to reflect on how successful they were in their attempts to move the magnet through the maze.

Ask: *Did you find it easy or difficult to follow the steps? Could you have guessed what was going to happen? How did you find the experiment?* Allow some time for students to talk about their experience in carrying out the project. Ask them what they found interesting, challenging, and enjoyable.

GO BEYOND

In their groups, have students discuss if it was easy or difficult to move the magnet through the maze and what they would do differently the next time they try. Have groups share their answers with the rest of the class and, as a class, discuss how they came to that conclusion. Prompt with additional questions if students find it hard to analyze the information.

Objective: To review position words, movement and speed, and the characteristics of magnets.
Resources: Unit 9 flashcards; Unit 9 poster; Unit 9 Self-assessment; Unit 9 Test

EVALUATE

REVIEW

Display the Unit 9 flashcards and poster. Divide the class into three groups. Assign one lesson from this unit to each group. Have each group come up with a summary of what they learned in their lesson using their own words. Students can refer to the flashcards and poster if they need to.

1 Follow the instructions and draw in your notebook.

Have students read the instructions and make sure they understand all the words. Let them work individually. Have pairs compare drawings or hang all the drawings around the classroom.

2 Match the pictures to the speed of movement.

Have students describe what the pictures show and read the words. Ask them to complete the activity individually. Check answers as a class.

3 Complete the sentences.

Read the sentences out loud for students and let them write the answers individually. If students are still struggling with magnet-related vocabulary, you can have them call out the answer as a class and then have them write it down individually.

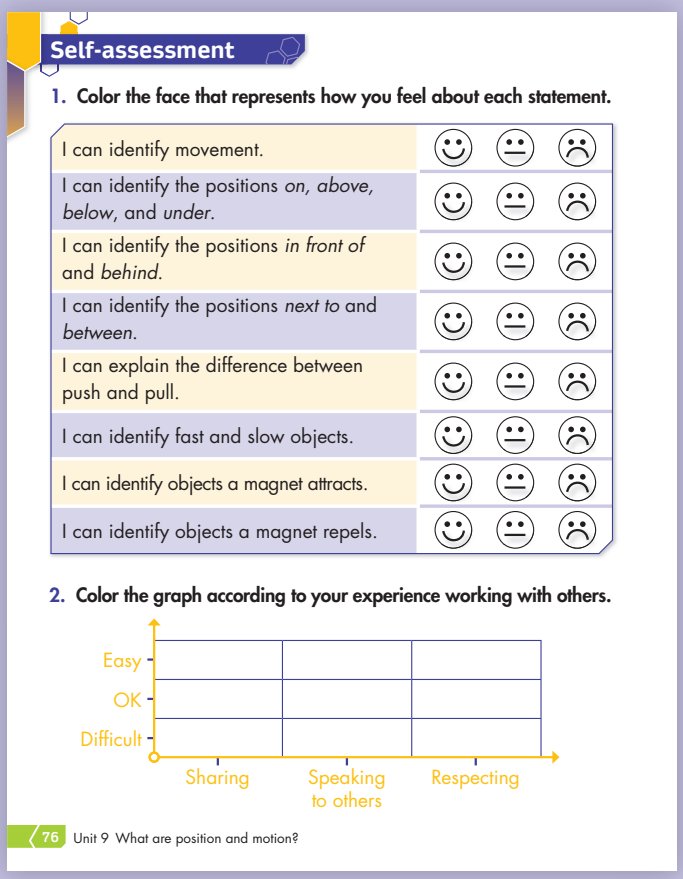
SELF-ASSESSMENT

Use the Unit 9 Self-assessment on the platform. Alternatively, have students turn to page 76 in the Workbook. Read the instructions and self-assessment table out loud and check comprehension. Have students work on their own. Monitor their work. When students finish completing the table, ask them to share what they liked the most about the unit and what they enjoyed learning. If any volunteers are comfortable with it, they can also share what confused them the most or where they feel they need more work.

The graph diagram focuses on the Communication skill. Explain what *sharing*, *speaking to others*, and *respecting* mean and elicit examples of good communication. Then ask them to reflect and decide if it was easy or difficult for them to communicate effectively. Have them color the graph according to their experience.

ASSESSMENT

Use the Unit 9 Test on the platform to evaluate students' performance and development. Alternatively, photocopy the Unit 9 Test on page T150.



Self-assessment

1. **Color the face that represents how you feel about each statement.**

I can identify movement.	☺	😐	☹
I can identify the positions *on*, *above*, *below*, and *under*.	☺	😐	☹
I can identify the positions *in front of* and *behind*.	☺	😐	☹
I can identify the positions *next to* and *between*.	☺	😐	☹
I can explain the difference between push and pull.	☺	😐	☹
I can identify fast and slow objects.	☺	😐	☹
I can identify objects a magnet attracts.	☺	😐	☹
I can identify objects a magnet repels.	☺	😐	☹

2. **Color the graph according to your experience working with others.**

76 Unit 9 What are position and motion?

1. Follow the instructions and draw in your notebook.

Students' own answers.

1 Draw yourself wearing a green hat on your head.

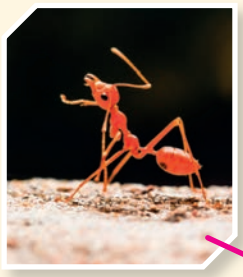
2 Draw a cloud above you.

3 Draw sand under your feet.

4 Draw a sandwich in front of you.

5 Draw a friend next to you.

2. Match the pictures to the speed of movement.

1 

2 

3 

4 

a fast

b slow

3. Complete the sentences.

1 A magnet is made of **metal**.

2 A magnet can **repel** an object away from it.

3 A magnet can **attract** an object toward it.