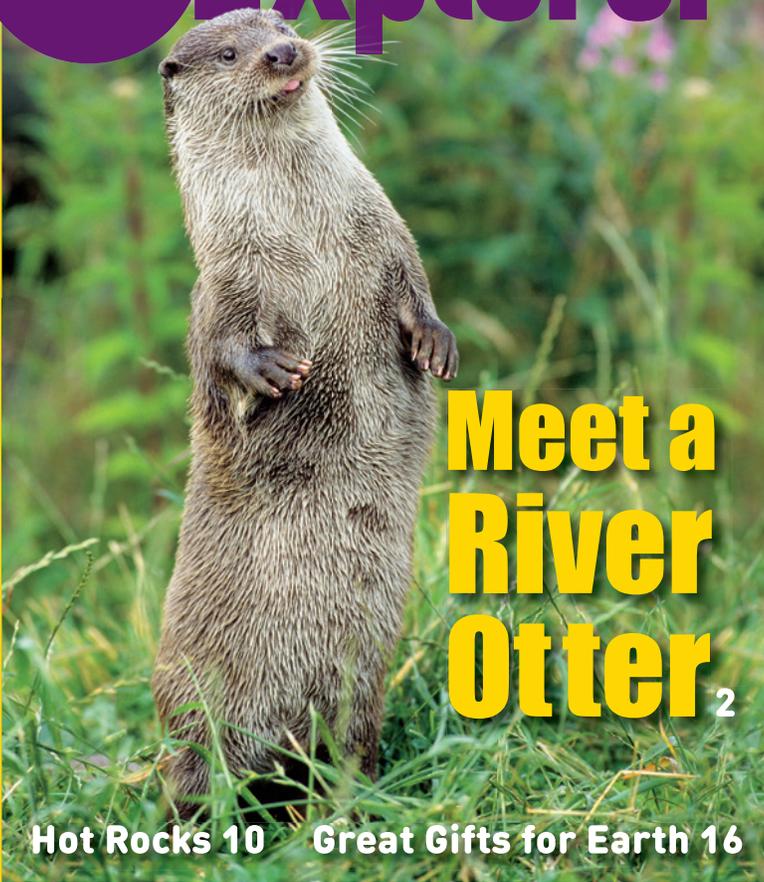




Young Explorer



TEACHER'S GUIDE Scout and Voyager Vol. 19 No. 6

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Educational consultant **Stephanie Harvey** has helped shape the instructional vision for this Teacher's Guide. Her goal is to ensure you have the tools you need to enhance student understanding and engagement with nonfiction text.

Lexile® Framework Levels

Scout
Some articles with characteristics of emergent text will be easier for students to read. You may find that other articles are better suited for teacher read-alouds.

Voyager

Meet a River Otter	320L
Hot Rocks	370L
Great Gifts for Earth	370L

Standards Supported

- Common Core State Standards (CCSS)
 - Next Generation Science Standards (NGSS)
 - C3 Framework for Social Studies State Standards (C3)
- See each lesson for the specific standard covered.**

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**PROJECT
LEARNING
TREE**
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**AWARD-
WINNING
ENVIRONMENTAL
EDUCATION**

INTRODUCTION

BACKGROUND

Since 1888, the National Geographic Society has funded scientists and explorers and shared their findings with the world. To support educators who use our resources, we have created a Learning Framework, which lays out what we believe students should learn from their experiences with the Society.

PURPOSE

The Learning Framework was designed to convey the Society's core beliefs and values. It is built around a set of attitudes, skills, and knowledge that embody the explorer mindset.

To determine the learning outcomes within the Learning Framework, we dug deep into national standards in key subject areas. We also sought advice from subject matter and child development experts, along with the combined expertise of NG instructional designers, researchers, and content developers. To learn more, go to: <https://www.nationalgeographic.org/education/learningframework/>.

IMPLEMENTATION

Each article in this magazine has a knowledge-based link to the Learning Framework.

MINDSET OF AN EXPLORER: KEY FOCUS AREAS

Attitudes



CURIOSITY An explorer remains curious about how the world works throughout his or her life. An explorer is adventurous, seeking out new and challenging experiences.

RESPONSIBILITY An explorer has concern for the welfare of other people, cultural resources, and the natural world. An explorer is respectful, considers multiple perspectives, and honors others regardless of differences.

EMPOWERMENT An explorer acts on curiosity, respect, responsibility, and adventurousness and persists in the face of challenges.

Skills



OBSERVATION An explorer notices and documents the world around her or him and is able to make sense of those observations.

COMMUNICATION An explorer is a storyteller, communicating experiences and ideas effectively through language and media. An explorer has literacy skills, interpreting and creating new understanding from spoken language, writing, and a wide variety of visual and audio media.

COLLABORATION An explorer works effectively with others to achieve goals.

PROBLEM SOLVING An explorer is able to generate, evaluate, and implement solutions to problems. An explorer is a capable decision maker—able to identify alternatives and weigh trade-offs to make a well-reasoned decision.

Knowledge



THE HUMAN JOURNEY An explorer understands where we came from, how we live today, and where we may find ourselves tomorrow.

OUR CHANGING PLANET An explorer understands the amazing, intricate, and interconnected systems of the changing planet we live on.

WILDLIFE AND WILD PLACES An explorer reveals, celebrates, and helps to protect the amazing and diverse creatures we share our world with.

Kindergarten Standard Supported

- **CCSS Reading Informational Text:** With prompting and support, ask and answer questions about key details in a text. (K-1)

First Grade Standard Supported

- **CCSS Reading Informational Text:** Ask and answer questions about key details in a text. (1-1)

What You Will Need

- “Meet a River Otter” (*Young Explorer*, pages 2–9)
- Think Sheet (Teacher’s edition, page 6)
- Clipboards
- Pencils

CONNECT & ENGAGE (5 minutes)

Kids are in a group on the floor in front of you. Sit on a low chair and hold up pages 2–3.

Wow! Look at the animal in the picture! What kind of animal do you think that is? The title is “Meet a River Otter,” so I think we can guess that the picture is of a river otter. Has anyone ever seen a river otter or any other type of otter? If you have, tell us what you already know about otters. If you haven’t, turn and talk about what you notice about river otters from the picture.

Kids turn and talk and then share out.

MODEL (10 minutes)

Kids sit in a group on the floor, with you in a low chair in front of them.

As I read these first pages of the article “Meet a River Otter,” I’m going to jot down my new learning on the chart I made on the board. I’ll put my new learning in the first column, which is labeled “I Learned.”

Read pages 3–5

Well, I learned a few things by reading these three pages. I’m going to write these statements and put them in the “I Learned” column in the chart.

- A river otter lives in a den.
- A river otter can stand tall.
- A river otter has to look out for danger.
- A river otter spends some of its time at the river.

When we learn new things, we often have questions or things we wonder about. Here are some of the things I wonder about my new learning:

- I wonder about the otter’s den—where it is; what it looks like inside.
- I wonder what kind of danger the otter looks for.
- I wonder what is in the river for the otter and what he does there.

I’m going to write my wonderings in the “I Wonder” column in the chart.

GUIDE (10 minutes)

Hand out the Think Sheets attached to clipboards. Kids remain grouped in front of you on the floor.

Let’s try this together now. You’ve each got a Think Sheet with a chart like I have on the board, with a column for writing what you learned and a column for writing what you wonder.

Look at the pictures on pages 6 and 7 as I read the text. If you learned something new, write or draw your new learning on your Think Sheet in the “I Learned” column.

Kids might draw or write the following as their new learning:

- *The otter can dive into the river.*
- *It uses its strong tail and webbed feet (Voyager) to swim.*
- *The otter finds food in the river.*
- *It uses its sharp claws to grab fish.*
- *It uses its sharp teeth to bite and chew (Voyager)*

Good work! We learned a lot more about the river otter from these two pages. I’m sure there are things you still wonder, too. Turn and talk about that, and then write or draw what you wonder in the “I Wonder” column on your Think Sheet.

Kids turn and talk and then write or draw on their Think Sheets.

Here is a brief list of some things kids might wonder:

- I wonder how long an otter is.
- I wonder how fast an otter can swim.
- I wonder what other food an otter eats.

COLLABORATE (25 minutes)

Now, with a partner, look at the pictures on pages 8 and 9 as I read the text aloud. When I finish reading, turn and talk with your partner about what you learned and what you still wonder. Then write or draw what you learned and wonder on your Think Sheets.

Kids partner up to work together. Read pages 8 and 9. Then move around the room, conferring with partner groups.

Kids might draw or write the following as their new learning:

- River otters like to play. (Voyager)
- River otters find friends to play with them in the water.
- River otters get tired and need to find a place to rest.
- River otters curl up when they nap.

Here is a brief list of some things kids might wonder:

- I wonder how often otters get to play.
- I wonder how much otters sleep.
- I wonder when the otter goes back to its den.

SHARE THE LEARNING (10 minutes)

Kids join a sharing circle.

Who would like to share something they learned and something they still wonder about the river otter? Before we start, remember that we always share politely with the class. First, share what you learned and wonder about. When you are finished sharing, always ask if there are any questions or comments. Then politely call on someone else who would like to share with the class.

Allow time for kids to share their learning.

We learned a lot about the river otter today, didn't we? And yet, there is still so much to wonder about. That's the great thing about reading. It keeps us curious about the things we learn, which starts us on a path to find out more. Do you know one thing I don't wonder about? I don't wonder if you did an awesome job today. I know you did!

Name _____

Date _____

THINK SHEET

Write or draw what you learned. Write or draw what you still wonder.

I LEARNED	I WONDER

This frame is a template of the language arts lesson. It has the instructional moves and language of the lesson, but the specific content has been removed. This way you can use the Lesson Frame for the other articles in the issue or for any nonfiction text you might be teaching.

What You Will Need

- Nonfiction text
- Think Sheet template
- Clipboards
- Pencils

CONNECT & ENGAGE (5 minutes)

Kids are in a group on the floor in front of you. Sit on a low chair and hold up the article.

Wow! Look at that picture! What is it? The title is “_____,” so I think we can guess that the picture is _____. Has anyone ever seen _____? If you have, tell us what you already know about _____. If you haven’t, turn and talk about what you notice about the picture.

Kids turn and talk and then share out.

MODEL (10 minutes)

Kids sit in a group on the floor, with you in a low chair in front of them.

As I read these first pages of the article “_____,” I’m going to jot down my new learning on the chart I made on the board. I’ll put my new learning in the first column, which is labeled “I Learned.”

Read pages _____.

Well, I learned a few things by reading these pages. I’m going to write these statements and put them in the “I Learned” column in the chart.

Write what you learned in the chart on the board.

When we learn new things, we often have questions or things we wonder about. Here are some of the things I wonder about my new learning. I’m going to write these in the second column of the chart on the board. That column is labeled “I Wonder.”

Write what you wonder in the chart on the board.

GUIDE (10 minutes)

*Hand out the Think Sheets attached to clipboards.
Kids remain grouped in front of you on the floor.*

Let's try this together now. You've each got a Think Sheet with a chart like I have on the board, with a column for writing what you learned and a column for writing what you wonder.

Look at the pictures on page(s) _____ as I read the text. If you learned something new, write or draw your new learning on your Think Sheet in the "I Learned" column.

Kids write or draw their new learning on their Think Sheet.

Good work! We learned a lot more about _____. I'm sure there are things you still wonder, too. Turn and talk about that, and then write or draw what you wonder in the "I Wonder" column on your Think Sheet.

Kids turn and talk and then write or draw on their Think Sheets.

COLLABORATE (25 Minutes)

Now, with a partner, look at the picture(s) on page(s) _____ as I read the text aloud. When I finish reading, turn and talk with your partner about what you learned and what you still wonder. Then write or draw what you learned and wonder on your Think Sheets.

Kids partner up to work together. Read page(s) _____. Then move around the room, conferring with partner groups.

Kids write or draw what they learned and what they wonder about on their Think Sheets.

SHARE THE LEARNING (10 minutes)

Kids join a sharing circle.

Who would like to share something they learned and something they still wonder about _____? Before we start, remember that we always share politely with the class. First, share what you learned and wonder about. When you are finished sharing, always ask if there are any questions or comments. Then politely call on someone else who would like to share with the class.

Allow time for kids to share their learning.

We learned a lot about _____, didn't we? And yet, there is still so much to wonder about. That's the great thing about reading. It keeps us curious about the things we learn, which starts us on a path to find out more. Do you know one thing I don't wonder about? I don't wonder if you did an awesome job today. I know you did!

SCIENCE

Kindergarten Standard Supported

- **NGSS LS1.C: Organization for Matter and Energy Flow in Organisms:** All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)

First Grade Standard Supported

- **NGSS LS1.A: Structure and Function:** All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)

What You Will Need

- Projectable PDF or interactive digital magazine
- Animals in Europe poster (Teacher's edition)
- Science Master (page 10)

Science Background

River otters, members of the weasel family, are agile, playful mammals that live in burrows, or dens, near the water's edge.

Although they are good runners on land, river otters are excellent swimmers in the water. They have webbed feet, water repellent fur, and powerful tails that propel their long narrow bodies forward as they swim. The nostrils and ears on their flattened heads close when they're in the water. And, they can hold their breath underwater for up to eight minutes.

Otters live along the edges of rivers, lakes, swamps, and estuary ecosystems. Although fish are their favorite food, they also eat amphibians, turtles, and crayfish.

Otters love to play and often chase each other as they slip and slide on snow and in mud. This fun has a purpose. It's a great way to build bonds and teach young otters hunting and other survival skills.

ENGAGE

Poll the class to see if any students have ever seen a river otter in real life. If so, invite volunteers to describe what the river otter looked like. If not, provide photos for students to see. Invite students to share what they know about river otters.

EXPLORE

Display the "Meet a River Otter" article with the projectable PDF or the interactive digital magazine. Read aloud the headline and text on the opening pages. Have students examine the photo. Say: **The river otter looks with its eyes to make sure it is safe to leave its den.** Ask: **What other body parts help the river otter figure out if it is safe to leave?** (Possible response: ears, nose) **How?** (It can hear any dangers with its ears and smell them with its nose.) As a class, brainstorm ideas about how the river otter's body parts will continue to help it survive after it leaves its home. Then read the article aloud or have students read it in groups, with a partner, or on their own.

EXPLAIN

After reading, have students turn and talk with a partner to discuss how a river otter uses its body parts to survive:

Point out to the class that animals have body parts that help them survive where they live. As a class, discuss reasons why the river otter's body parts are extremely helpful for an animal that lives by a river.

ELABORATE

Display the Animals in Europe poster. Review the map key to identify types of habitats found in Europe. As a class, identify animals that live in each. Point out that river otters live in several different types of habitats in Europe. Ask: **What landscape feature do you think is present in each place river otters live?** (water) **Why?** (River otters always live near water, such as the edge of a river.)

EVALUATE

Have students complete the Science Master for this lesson. Encourage them to share and compare their results in small groups or with a partner.

SCIENCE: Meet a River Otter

Follow the directions in each box.

Draw a river otter.
Write a word that completes the sentence.

The otter is _____.

Circle the word that tells what
a river otter eats.

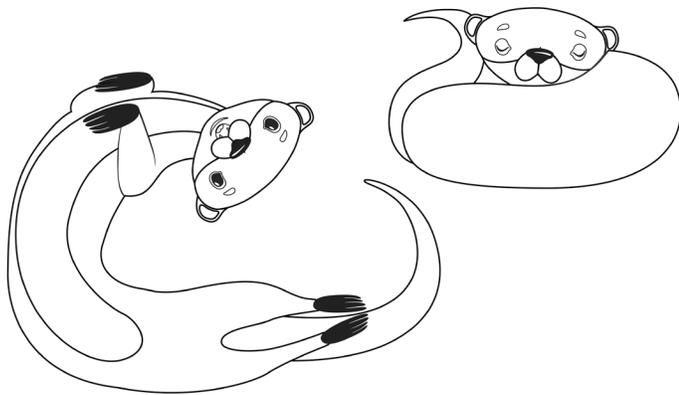
nuts

fish

trees

dens

Color the picture of the river otter playing.



Trace the word that tells which body part
helps a river otter swim.

teeth

tail

claws

Use the words in the Word Bank to finish each sentence.

grabs

bites

finds

lives

1. A river otter _____ in a den.

2. It _____ a fish with its sharp claws.

3. It _____ food in a river.

4. It _____ a fish with its sharp teeth.

SCIENCE

Kindergarten Standard Supported

- **NGSS Crosscutting Concepts: Cause and Effect:** Events have causes that generate observable patterns. (K-PS3-1), (K-PS3-2)

First Grade Standard Supported

- **NGSS Science and Engineering Practices: Constructing Explanations and Designing Solutions:** Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (1-PS4-2)

What You Will Need

- Projectable PDF or interactive digital magazine
- Science Master (page 12)

Science Background

A volcano is an opening in a planet or moon's crust through which molten rock, hot gases, and other materials erupt.

Inside an active volcano, molten rock, called magma, collects in a magma chamber. As pressure there builds up, the magma moves through channels in the rock and escapes to the surface.

Once the liquid flows onto the surface, it is known as lava. As the glowing orange lava is exposed to air and cools, it turns deep black. Then it hardens into solid rock.

Temperatures must be very high for solid rock to melt and become a liquid—between 650°C and 1200°C (1202°F to 2192°F). Just how high depends on which minerals the magma contains.

ENGAGE

Display an ice cube and a glass of water. Invite volunteers to identify and describe each. Discuss how they are the same (*Both are made of water.*) and different (*One is solid and the other is liquid.*). As a class, discuss how water changes from a liquid to a solid and from a solid to a liquid (*freezes/melts*).

EXPLORE

Display the "Hot Rocks" article with the projectable PDF or the interactive digital magazine. Read aloud the headline and text on the opening pages. Invite a volunteer to identify the hot lava running down a volcano. Then point out that the headline is "Hot Rocks." Brainstorm ideas about where hot rocks might be seen in the photo. Then read the article aloud or have students read it in groups, with a partner, or on their own to find out.

EXPLAIN

After reading, explain to students that, like ice, rocks can melt. But it takes extremely hot temperatures for that to happen. Ask: **Where is the temperature hot enough for rock to melt?** (*inside a volcano*) **What is melted rock called?** (*lava*) Say: **When liquid lava flows from a volcano, it cools down. Then it becomes solid and turns into hard rock.** As a class, discuss the difference between a liquid and a solid. Then challenge students to identify examples of liquid lava and solid rock in each of the article's photos.

ELABORATE

Point out to students that there are many different types of solids and liquids in the world around us. Encourage students to identify examples they see in the classroom. Then provide an assortment of magazines. Have students look through the magazines and cut out pictures of different solids and liquids they see. Give each student a piece of paper. Have them fold it in half and label one side "Solids" and the other "Liquids." Encourage students to glue the pictures they found to the correct sides of their papers. Invite them to share and compare their finished products in small groups.

EVALUATE

Have students complete the Science Master for this lesson. Encourage them to share and compare their results in small groups or with a partner.

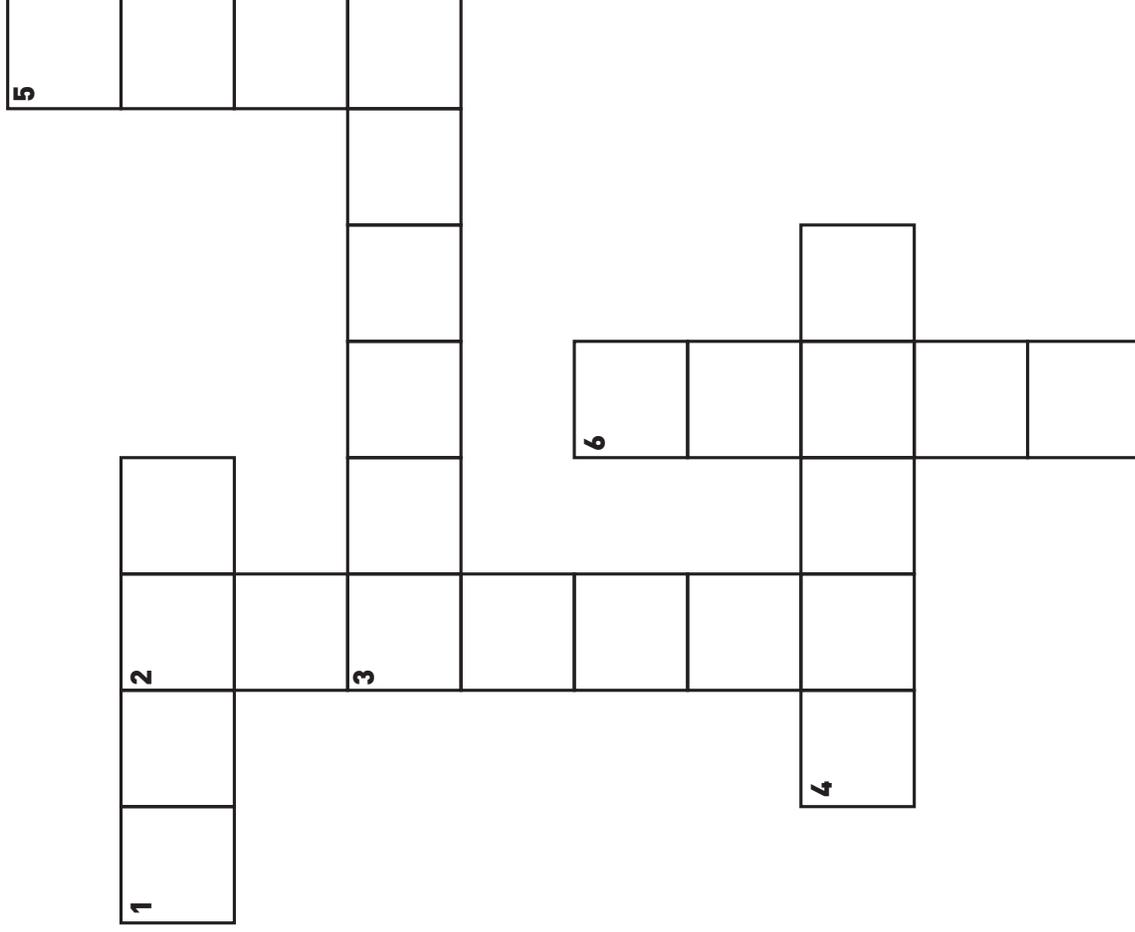
SCIENCE: Hot Rocks

Use words from the Word Bank to complete each sentence.

Use your answers to complete the puzzle.

Discuss solids and liquids.

solid	hard	liquid
volcano	lava	cools



1. (across) _____ is hot, melted rock.
2. (down) It flows from a _____.
3. (across) It begins as a _____.
4. (across) Liquid lava _____.
5. (down) It changes into _____ rock.
6. (down) Rock is a _____.

SCIENCE

Kindergarten Standard Supported

- **NGSS ESS3.C: Human Impacts on Earth Systems:** Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (secondary to K-ESS2-2)

First Grade Standard Supported

- **NGSS ETS1.B: Developing Possible Solutions:** Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. (K-2-ETS1-2)

What You Will Need

- Projectable PDF or interactive digital magazine
- Earth Day Every Day poster (Teacher's edition)
- Science Master (page 14)

Science Background

Earth is an amazing planet. It is the only planet we know of where humans can live. Despite that, people don't always take good care of their home. They pollute the land and water, cut down too many trees, and create waste that can take hundreds of years to break down.

Recognizing the need for change, U.S. Senator Gaylord Nelson from Wisconsin organized the first Earth Day on April 22, 1970. The goal of this national demonstration was to raise awareness about environmental issues. It worked. By the end of 1970, the U.S. government had created the Environmental Protection Agency and passed the Clean Air, Clean Water, and Endangered Species Acts.

In 1990, Earth Day spread around the globe as more than 200 million people in 141 countries took part in the annual event. Today, Earth Day is the largest non-religious ceremony celebrated in the world, with more than a billion people stepping up and pitching in to help make the world a cleaner place.

ENGAGE

Prior to conducting this activity, obtain photos of two parks. One of the photos should include a lot of trash on the ground. The other should not. Display the photos and ask students which place they'd rather be. Why? And what could they do to make the second park as inviting as the first?

EXPLORE

Display the "Great Gifts for Earth" article with the projectable PDF or the interactive digital magazine. Read aloud the headline and text on the opening pages. As a class, discuss reasons why making less trash would be a great gift for Earth. Then read the article aloud or have students read it in groups, with a partner, or on their own.

EXPLAIN

After reading, have students turn and talk with a partner to discuss how trash can harm the land, water, and animals. Encourage partners to review the ideas in the article that tell how they can help keep Earth clean. Challenge them to think of additional things they can do to reduce the amount of trash they produce. Invite partners to share their ideas with the class. Then, as a class discuss why it is important to keep Earth clean and healthy and why a healthy Earth is a gift to everyone who lives on the planet.

ELABORATE

Display the Earth Day Every Day poster. Poll the class to see how many students are familiar with Earth Day. Encourage those that are to share what they know with the class. Point out that April 22, 2020 is the 50th anniversary of Earth Day, or the 50th year that people have come together to make Earth a cleaner, healthier planet. Review the poster as a class. Invite students to identify things they're already doing. Encourage them to discuss ways they could incorporate the other tips into their daily lives. As a class, brainstorm ideas for how they could help protect Earth while they're at school. Challenge students to make a poster listing helpful tips for all students in your school to follow.

EVALUATE

Have students complete the Social Studies Master for this lesson. Encourage them to share and compare their results in small groups or with a partner.

SCIENCE: Great Gifts for Earth

Think of one way you can help keep Earth clean.

Draw a picture.

Write about your drawing.



Four sets of primary writing lines, each consisting of a solid top line, a dashed middle line, and a solid bottom line.

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ANSWER KEY

Language Arts

Think Sheet, page 6

Students should write or draw what they learned or wonder on their Think Sheets.

Meet a River Otter

Science: page 10

Box 1: Students should draw a picture of a river otter and write a word telling what it is doing.

Box 2: Students should circle the word "fish."

Box 3: Students should color the illustration of the river otter playing.

Box 4: Students should trace the word "tail."

WOLs: 1. lives; 2. grabs; 3. finds; 4. bites

Hot Rocks

Science: page 12

1. lava
2. volcano
3. liquid
4. cools
5. hard
6. solid

Students should place the words in the correct spaces to complete the crossword puzzle.

Great Gifts for Earth

Science: page 14

Students should draw a picture showing one way they can help keep Earth clean and write about their drawing.

Words to Explore

Back Cover

1. river
2. liquid
3. lava
4. solid