

TEACHER'S GUIDE



Voyager (Grade 1) Vol. 16 No. 6

In This Guide

In this guide, you will find language arts, science, and social studies lessons for the articles in this issue of YOUNG EXPLORER VOYAGER.

Young Explorer Magazine

YOUNG EXPLORER classroom magazines for kindergarten and grade 1 develop young readers' literacy skills through engaging informational text. Great storytelling and stunning photographs teach students about our planet and the people, plants, and animals that live on it. Encourage your students to read and to explore our world with YOUNG EXPLORER magazines.

Voyager

The Voyager edition is written for first grade readers. All articles in the Voyager edition have been measured using the Lexile® Framework for Reading. Some articles will be easier to read than others, though all articles will be within the 190-400L range.

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From Seed to Tree

LANGUAGE ARTS

LEXILE 380L

NATIONAL
GEOGRAPHIC

Young Explorer

Objective

- Students will retell and write about the text using words that signal the order of events.

Resources

- Language Arts Master (page 4)

Summary

Giant sequoias are evergreen trees. They grow from tiny seeds into some of the biggest trees on Earth. Their parts help them get what they need to survive and grow.

WORD WORK

Sight Words: *from, this, of, as, no, are, new, into, out, over, has, but, do an, old, some, will, be, how, live*

High-Frequency Words: *seed, tree, grow*

BUILD VOCABULARY AND CONCEPTS

- evergreen
- cone
- sprouts
- seedling
- needles

The words above are used in the article and may be new to students. Pronounce the words for students. Invite them to share what they think each word might mean. Then work together as a class to find examples of each word in the article's photos.

Once students have a good understanding of each word, divide the class into two teams. Have one member of each team sit at the front of the class, facing away from the board. Write one vocabulary word on the board.

Taking turns, give each team five chances to give simple clues about the mystery word. Student volunteers guess the mystery word based on their clues. If a team says the actual word, the other team gets the point. The first team to reach five points wins.

READ AND DISCUSS

Read the article "From Seed to Tree" aloud to students as they follow along. You may want to read the entire article first, and then reread the article, taking time to stop and discuss each two-page spread.

Pages 2-3 Read the title and text aloud to students. Ask: **What do you see in the middle of this picture?** (*a very big tree*) **What does the title tell you about the tree?** (*It came from a seed.*) **What do you think we will learn as we read on in the article?** (*how the seed grew into a tree*) Point out the word *started* in the text. Say: **The seed is only the beginning. Let's pay close attention and listen for other words that tell how a seed grows into a tree.**

Pages 4-5 Read pages 4 and 5. Ask: **Where do the seeds that grow into a giant sequoia come from?** (*The tree makes them. A giant sequoia makes seeds inside a cone.*) **What happens to a seed?** (*It sprouts.*) **What does it grow into?** (*a seedling*) Ask students to describe the seedling in the picture.

Pages 6-7 Read pages 6-7. Ask: **What happens to the seedling over time?** (*It grows into a young tree.*) **What happens to the young tree?** (*It grows into an adult tree.*) Point out the words *young* and *adult* in the labels. Say: **Often when you read about the order of things, you see the words *first, next, then, and last*. In this text you don't. Instead, you see words like *started, over time, young, and adult*. These words help you keep track of time as a seed grows into a tree.**

Pages 8-9 Review the diagram of the giant sequoia's life cycle on page 8. Ask students to describe the life cycle using the words *first, next, then, and last*. Read aloud the text on page 9. As a class, count the rings on the tree trunk. Ask: **How many rings are there?** (*16*) Guide students to understand that 16 years is very early in the life of a giant sequoia. Giant sequoias can live for thousands of years.

TALK AND WRITE

Students can respond to the article by talking and writing. Use the following prompts to guide them. You might also want to use the Language Arts Master for this article.

- Talk about something new you learned about trees.
- Draw or write about how seeds grow into trees.

From Seed to Tree

SCIENCE

Objective

- Students will learn that trees have different parts that help them survive and grow.

Resources

- Parts of a Tree poster (Teacher's Edition)
- Science Master (page 5)

Science Background

Giant sequoias are evergreen trees that grow along the western slope of the Sierra Nevada in central California. A mature giant sequoia produces about 1,500 cones each year. Inside each cone is about 200 seeds. Most seeds die. But the seeds that sprout can grow into trees that are about 300 feet tall. These trees can live very long lives. Many living sequoias are between 2,000 to 3,000 years old.

ENGAGE

Engage students in a discussion about trees. All students have seen trees. Most have probably never seen a giant sequoia. Ask students who have seen one to describe the tree they saw. Have on hand photos of giant sequoias for students to examine. Ask students to compare and contrast giant sequoias with trees that grow in their community. Guide students to recognize that the trees all have similar parts.

EXPLORE

Take the class into the hall or a large open space. Have students place 20, 12-inch rulers end-to-end on the floor. Point out that this is about the height of some houses (20 feet). Have students use a tape measure to measure a distance of 100 feet. Tell students that some tall buildings are about this tall. Say: **Imagine three of those buildings standing on top of one other. That's about how tall a giant sequoia grows.** Remind students that even though a giant sequoia grows very tall, it is still like other trees in many ways.

EXPLAIN

Read the article to students.

After reading, have students explain and describe how a seed grows into a tree as tall as a giant sequoia. Students should note some of the following:

- The giant sequoia is an evergreen tree. It begins its life as a seed found inside a cone.
- The seed sprouts into a seedling. The seedling grows into a young tree. The young tree grows into an adult tree. This is the tree's life cycle.
- A tree has roots, a trunk, branches, and leaves. A giant sequoia's leaves are called needles.

ELABORATE

Share the Parts of a Tree poster with students. Identify the tree parts labeled on the diagram. Then examine the different tree seeds at the bottom of the poster. Guide students to understand that most trees grow from seeds. But different kinds of trees grow from different kinds of seeds. The seeds they see here are all covered in different types of cases. Ask students which case looks most like that of a giant sequoia. (cone/evergreen tree) Discuss what an evergreen tree is like. Compare evergreens to other types of trees.

Have students look at More to Explore on the back page of the magazine. Read aloud "A Dandelion From Bud to Seed." Guide students as they discuss how the flower changes. Discuss how fluff helps the flower's seeds find new places to grow.

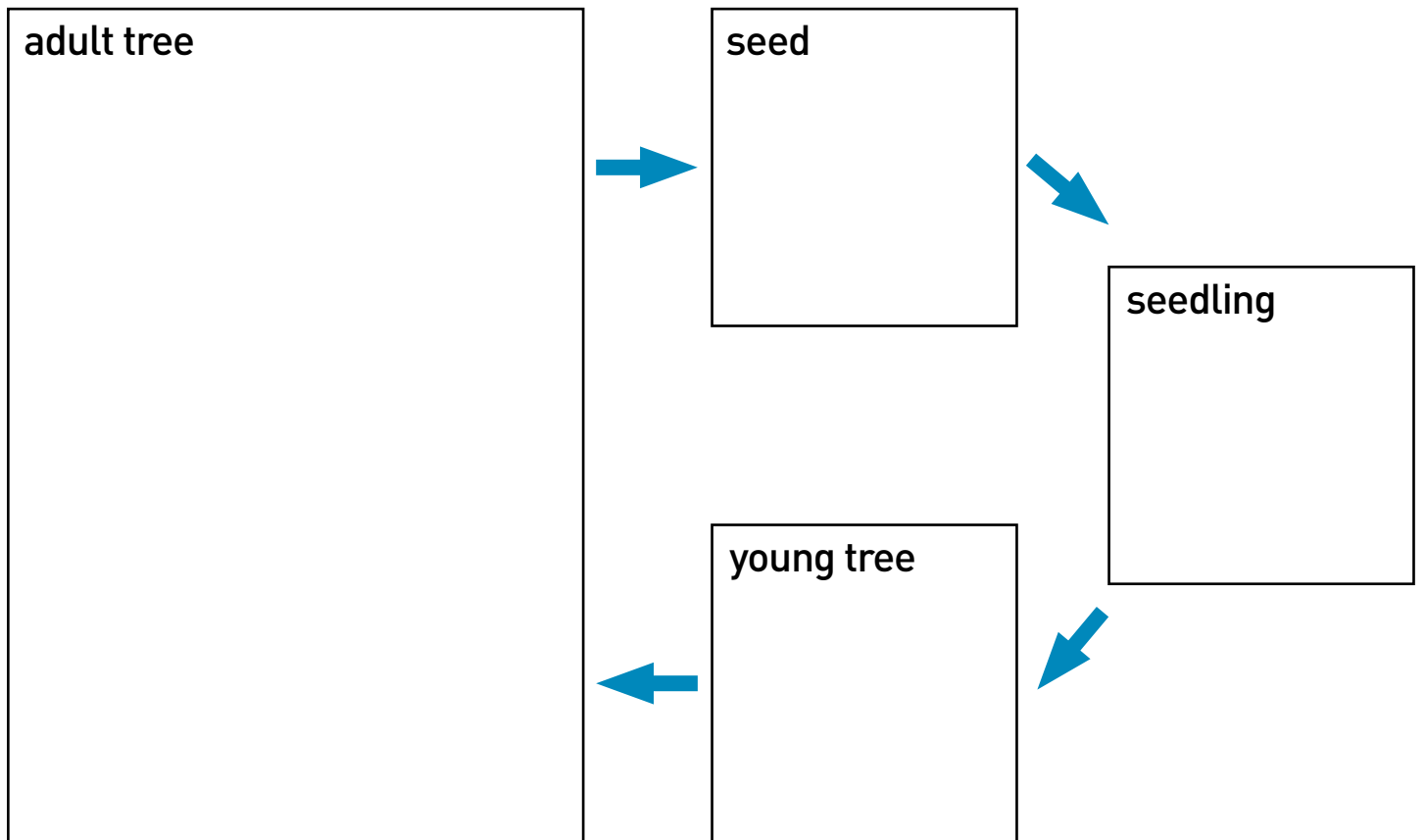
EVALUATE

Assess students' understanding with the Science Master for this article. You might also use the following prompts.

- **How does a giant sequoia change as it grows from a seed into a tree?**
- **What parts of a tree help it survive and grow?**

LANGUAGE ARTS: The Life Cycle of a Tree

Draw pictures to show the life cycle of a tree. Write to tell what happens.



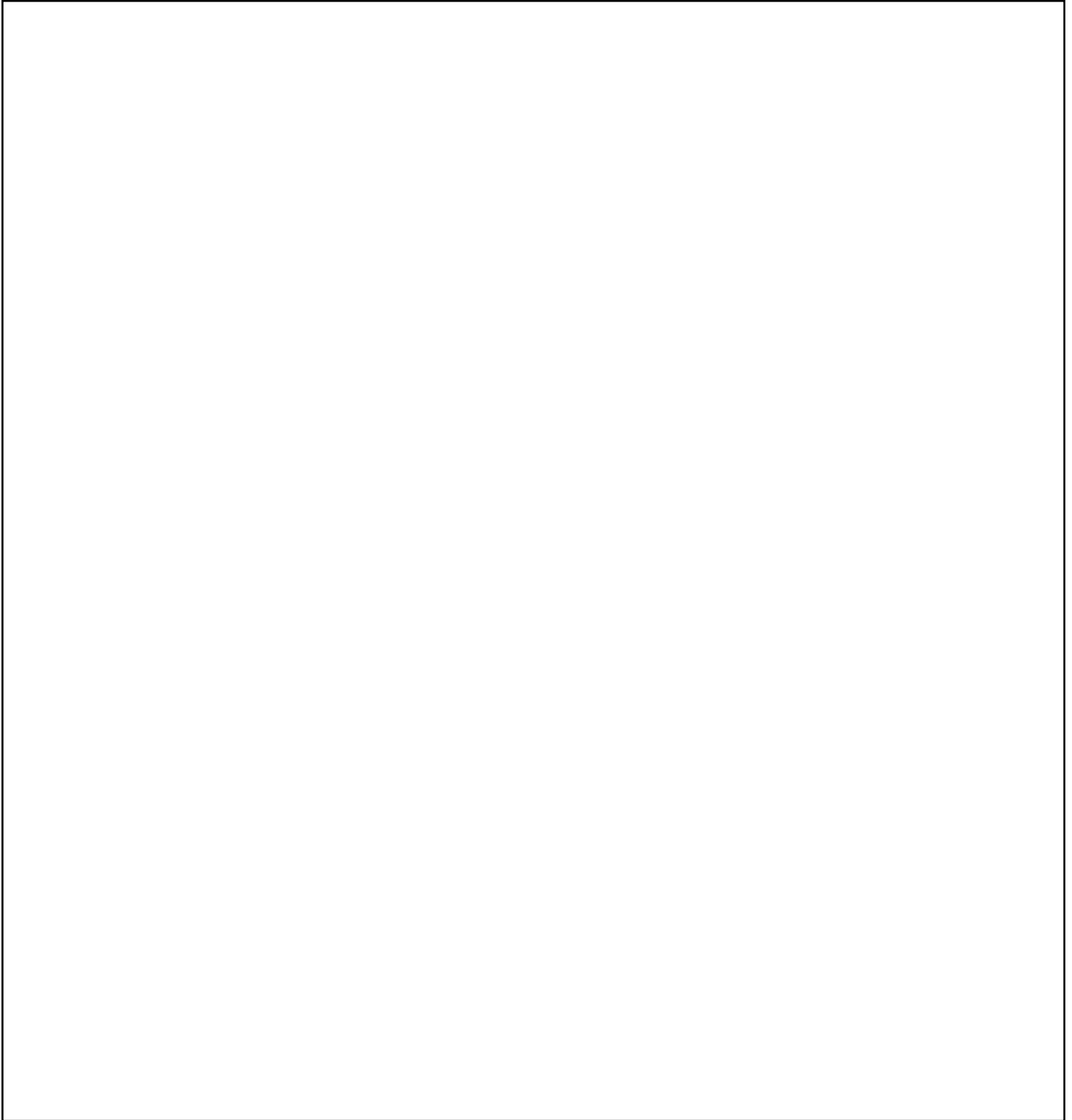
Four sets of horizontal writing lines for describing the life cycle. Each set consists of a solid top line, a dashed middle line, and a solid bottom line.

Name _____

Date _____

SCIENCE: Parts of a Tree

Draw a tree. Label the roots, trunk, branches, and leaves.



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LANGUAGE ARTS



Objectives

- Students will identify reasons an author gives to support points in a text.
- Students will decode two-syllable words following basic patterns by breaking the words into syllables.

Resources

- Language Arts Master (page 8)

Summary

Joel Sartore is a photographer on a mission. He takes photos of animals in zoos. He shares his photos so people will care about the animals and help protect them from becoming extinct.

WORD WORK

Sight Words: *am, take, of, them, do, want, have, as, good, they, then, are, know, what, will, some, like, when, am, with, now, how*

High-Frequency Words: *animals, photos*

BUILD VOCABULARY AND CONCEPTS

- photos
- photographer
- camera
- lights
- zookeeper
- hyenas

The words above are used in the article and may be new to students. Pronounce the words for students. Have pictures available that will help students understand the meaning of the words, or use the picture in the article. Use student-friendly definitions to explain the meanings of the words.

Post the words along with pictures on a classroom word wall. Refer to the word wall throughout discussion of the article, and remind students to use these words as they talk about the article with each other and with the class.

READ AND DISCUSS

Read the article “My Animal Photos” aloud to students as they follow along. You may want to read the entire article first, and then reread the article, taking time to stop and discuss each two-page spread.

Pages 10-11 Have students look at the picture. Ask: **What do you see in this photo?** (*a man, a camera, and a bird*) Read the title and text aloud. Ask: **What is the man’s name?** (*Joel*) **Based on the title, what do you think Joel will do with the camera?** (*take a photo of the bird*) Let students know they will learn more about Joel and why he takes photos of animals.

Pages 12-13 Ask: **Why does Joel go to zoos?** (*There are many animals for him to photograph in zoos.*) Then ask students to look at the top photo on page 12. Read aloud the label. Repeat the word *leopard*, clapping to emphasize each syllable (*leop-ard*). Ask: **How many times did I clap?** (two) Say: **When you read, you can break words into parts. This word has two parts. The parts are called syllables. Sounding out syllables helps you read longer or more difficult words.** Ask students to clap as you sound out the words *cub, caiman, camel, and ducklings*. Guide them to recognize that each of these words has two syllables, too.

Pages 14-15 Ask: **Why does Joel use a tent?** (*It makes animals feel safe.*) **Why does he only take photos for a few minutes?** (*He does not want to scare the animals.*) Have students clap as you sound out the words *baby, tapir, bison, and peacock*. Ask: **What other two-syllable words do you hear on these pages?** (*photos, only, minutes*)

Pages 16-17 Ask: **Why does Joel share his photos?** (*He wants other people to see how wonderful the animals are.*) Then have students clap as you sound out the name of each animal shown. As a class, identify the number of syllables in each animal’s name.

TALK AND WRITE

Students can respond to the article by talking and writing. Use the following prompts to guide them. You might also want to use the Language Arts Master for this article.

- Talk about something new you learned about animals.
- Tell why Joel Sartore thinks it is important to take photos of animals.

Objectives

- Students will celebrate the amazing and diverse creatures we share this world with.
- Students will recognize how people can work together to teach others about animals.

Resources

- Photo Ark poster (Teacher's Edition)
- Science Master (page 9)

Science and Social Studies Background

Joel Sartore is a photographer for National Geographic. He specializes in taking photos of animals in captivity. To get the photos, he visits zoos and aquariums around the world. There are about 12,000 animals species in captivity. And Sartore wants to take photos of them all. After more than 10 years, he's about halfway there. To share his photos with others, Sartore created a project that he calls The Photo Ark. He hopes that after people see his photos they will want to learn more about the animals. And as they learn more, they will care enough to keep the endangered species from becoming extinct.

ENGAGE

Engage students in a discussion about animals. Ask:

What is your favorite animal? What makes this animal special? Guide students to recognize that animals are amazing and diverse creatures. Discuss reasons why animals are an important part of the world.

EXPLORE

Explore how photos reveal information about a subject. Show students photos of a variety of different animals commonly found in your community. Have them identify the animals they see. Then show them a photo of an animal they are unlikely to recognize. You may wish to select one of the species featured on the Photo Ark poster. Let students know that photographer Joel Sartore takes photos of animals like this. He wants to introduce people to animals they don't know about. Explain that he wants people to learn about these animals so they care about the animals and want to protect them.

EXPLAIN

Read the article to students.

After reading, have students explain how photographer Joel Sartore works with zookeepers to teach people about different types of animals. Have them describe how and why Joel takes the photographs.

- Joel uses a camera and lights.
- He puts small animals in a tent so they feel safe.
- He takes photos of big animals in a pen or a room.
- He doesn't want the animals to get scared, so he only takes photos for a few minutes.
- He takes photos at zoos because they have lots of different kinds of animals.
- The zookeepers help him. They bring the animals to him.
- Joel never knows what the animals will do. Some fall asleep. Some move around. Others make a mess.
- Joel shares his photographs with people so they can see how wonderful the animals are, too.

Have students look at the photos of animals in the article. Read aloud the labels to identify each one. Then have students describe each animal, based on what they see in the photos.

ELABORATE

Explain to students that some of the animals Joel Sartore photographs are endangered species. Discuss what this means. Let students know that Joel created a project called The Photo Ark so people can see and learn about the animals in his photos. Use the Photo Ark poster to show students more of Joel's photographs. Have students describe the animal they see in each photo. To learn more about The Photo Ark, go to www.NatGeoPhotoArk.org.

EVALUATE

Assess students' understanding with the Science and Social Studies Master for this article. You might also use the following prompts.

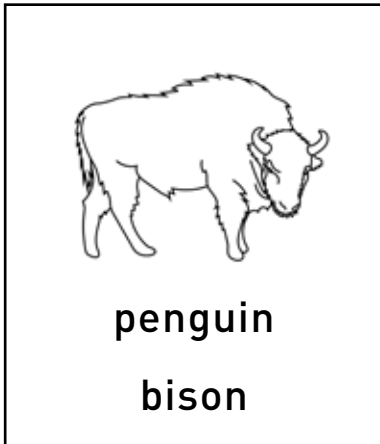
- **How does Joel Sartore take photographs of animals?**
- **Describe two of the animals Joel took photos of for this article.**

LANGUAGE ARTS: Two-syllable Words

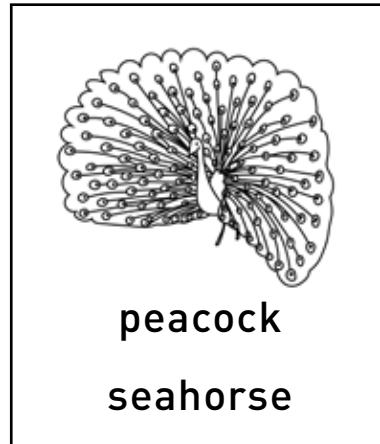
Draw a line to divide each word into two syllables.

Circle the words that name the animals you see.

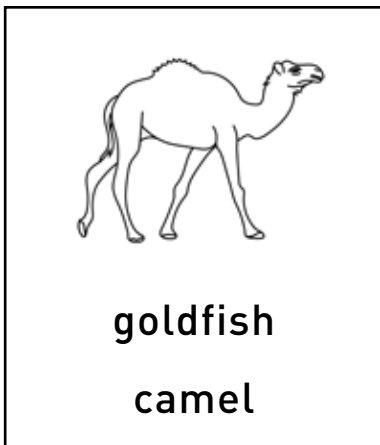
1.



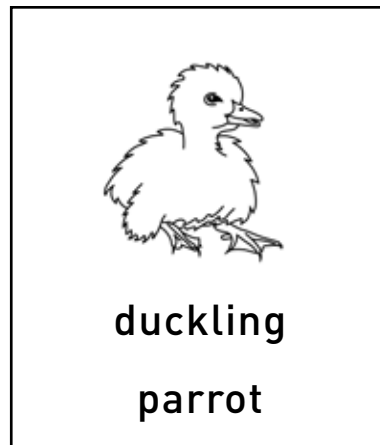
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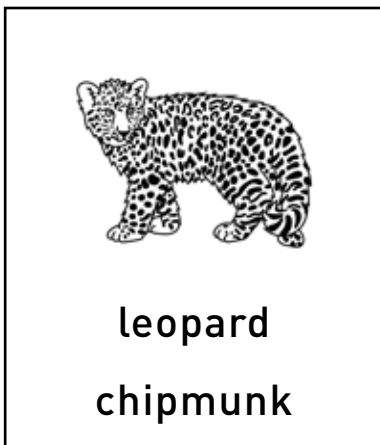
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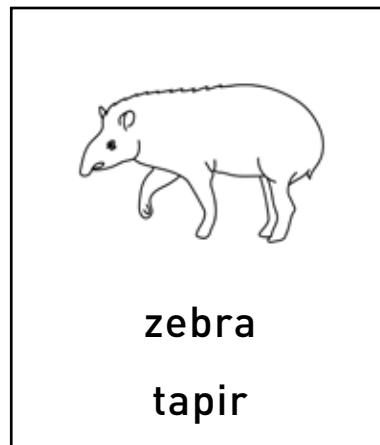
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3.



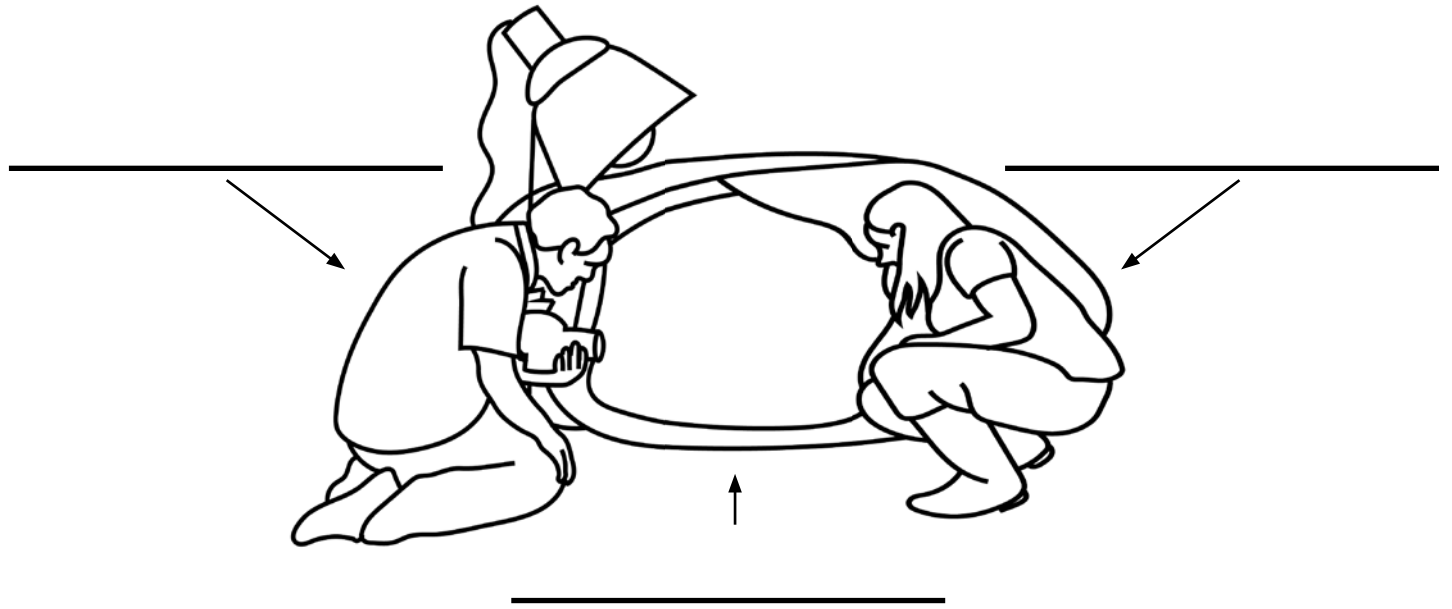
6.



SCIENCE AND SOCIAL STUDIES: Helping Animals

Write the correct word on each blank. Draw a picture of an animal in the tent. Tell what kind of animal it is.

zookeeper	photographer
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Write about taking the animal's photo. Use the words from the Word Bank.

zookeeper	photographer	camera	lights	tent
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Objectives

- Students will describe the connection between two ideas in a text.
- Students will read grade-level text with purpose and understanding.

Resources

- Language Arts Master (page 12)

Summary

Wind is produced when the sun warms land and water. Heat from the Earth's surface warms the air above it. The warm air rises, and cooler air rushes in. Wind is energy. Wind can move things.

WORD WORK

Sight Words: *what, do, with, too, that, some, fly, as, they, into*

High-Frequency Word: *wind*

BUILD VOCABULARY AND CONCEPTS

- wind
- sun
- land
- water
- energy

You may want students to work in pairs to expand their knowledge of the vocabulary words. Let students know that each pair will become an expert on one of the words. Assign a word to each pair. Have students draw lines or fold a piece of paper to create four boxes. Ask pairs to label and fill in each box as shown in the example. After pairs are finished, ask them to share their word and their work with another pair or with the class. If pairs have the same word, have the class discuss how the examples are alike and different. Afterward, have students place their work on the classroom word wall.

Word wind	Picture (picture of wind)
Sentence The wind blows.	Definition Wind is air on the move.

READ AND DISCUSS

Read the article "Wind Power" aloud to students as they follow along. You may want to read the entire article first, and then reread the article, taking time to stop and discuss each two-page spread.

Pages 18-19 Read the title to students. Ask them what wind is and what it's like. Then discuss the word *power*. Say: **Wind is invisible. You can't see it. But you can see that wind has power. You can see what wind can do.** Ask students to examine the photos on pages 18-19. Ask: **What does wind have the power to do in these photos?** (*blow dandelion seeds, blow leaves off trees, make the dog's ears move, and keep the hang gliders in the sky*) If your classroom has a window, ask students to look outside. Have them describe what wind has the power to do right now where you live.

Pages 20-21 Ask: **What can we learn about wind on these pages?** (*how wind starts; how wind can be fun*) Ask students if they've ever flown a kite. If so, ask them to describe how the kite moved in the wind. Then ask students to name other fun things they can do when it's windy outside.

Pages 22-23 Read aloud the text on these pages. Point out that it takes power to push things or make things spin. Say: **When wind pushes a sailboat, the sailboat moves. When wind blows on a windmill, the windmill spins.** Ask: **What would happen to the sailboat if the wind stopped?** (*The sailboat would stop moving.*) **What would happen to the windmill if the wind stopped?** (*The windmill would stop spinning.*) As a class, make a list of other things wind can do. Guide students to understand that each of these actions would stop if air stopped moving and there was no wind.

TALK AND WRITE

Students can respond to the article by talking and writing. Use the following prompts to guide them. You might also want to use the Language Arts Master for this article.

- **Talk about something new you learned about wind.**
- **Make a pinwheel. Blow on it. Talk about how air can make things move.**

Wind Power

SCIENCE

Objective

- Students will understand how heat from the sun causes air to move, creating wind.

Resources

- Science Master (page 13)

Science Background

Wind is moving air. It is a part of weather. You can't see wind. But during certain types of weather, you definitely know that wind is there. Wind starts when the sun heats Earth's surface. Because landscapes vary, Earth's surface is heated unevenly. Heat from the Earth's surface warms the air above it. Hot air is less dense, so it rises. Cool air is more dense, so it sinks. This creates differences in atmospheric pressure. Air constantly moves from high-pressure areas to low-pressure areas. The bigger the difference in air pressure is, the stronger the winds will blow.

ENGAGE

To engage students, spend some time gathering pictures of things that move because of wind. Post the pictures around the room and give students time to examine them. Challenge students to describe what all of the photos have in common. If necessary, guide them to recognize that each photo shows something blowing in the wind.

EXPLORE

Before reading the article, explore the concept of moving air with the class. Ask students to place their hands in front of their mouths and blow. Ask: **What do you see?** (*nothing*) **What do you feel?** (*moving air*) Let students know that you are going to read an article about wind, which is the movement of air outside. As they read, they will find out how wind is created.

EXPLAIN

Read the article to students.

After reading, ask: **What is wind?** (*moving air*) **Where does wind start?** (*with the sun*) Have students refer to the diagram on page 20 as you ask the following questions about the process in which wind is created.

- **What does heat from the sun do?** (*It warms the land and water.*)
- **What happens next?** (*Air above the land and water warms up.*)
- **What happens when air warms up?** (*It rises.*)
- **And what happens when warm air rises?** (*Cooler air rushes in.*)

After reviewing the diagram, have students examine the article's photos. Point out that you cannot see wind in any of the photos. But you can see what happens because of wind. Have students explain to a partner how each photo shows that wind has power and can move things.

ELABORATE

Remind students that cool air rushes in as warm air rises. Then explain that as the warm air rises, it cools off and falls back down. Tell students that this causes air to keep moving. That is why wind is constantly changing.

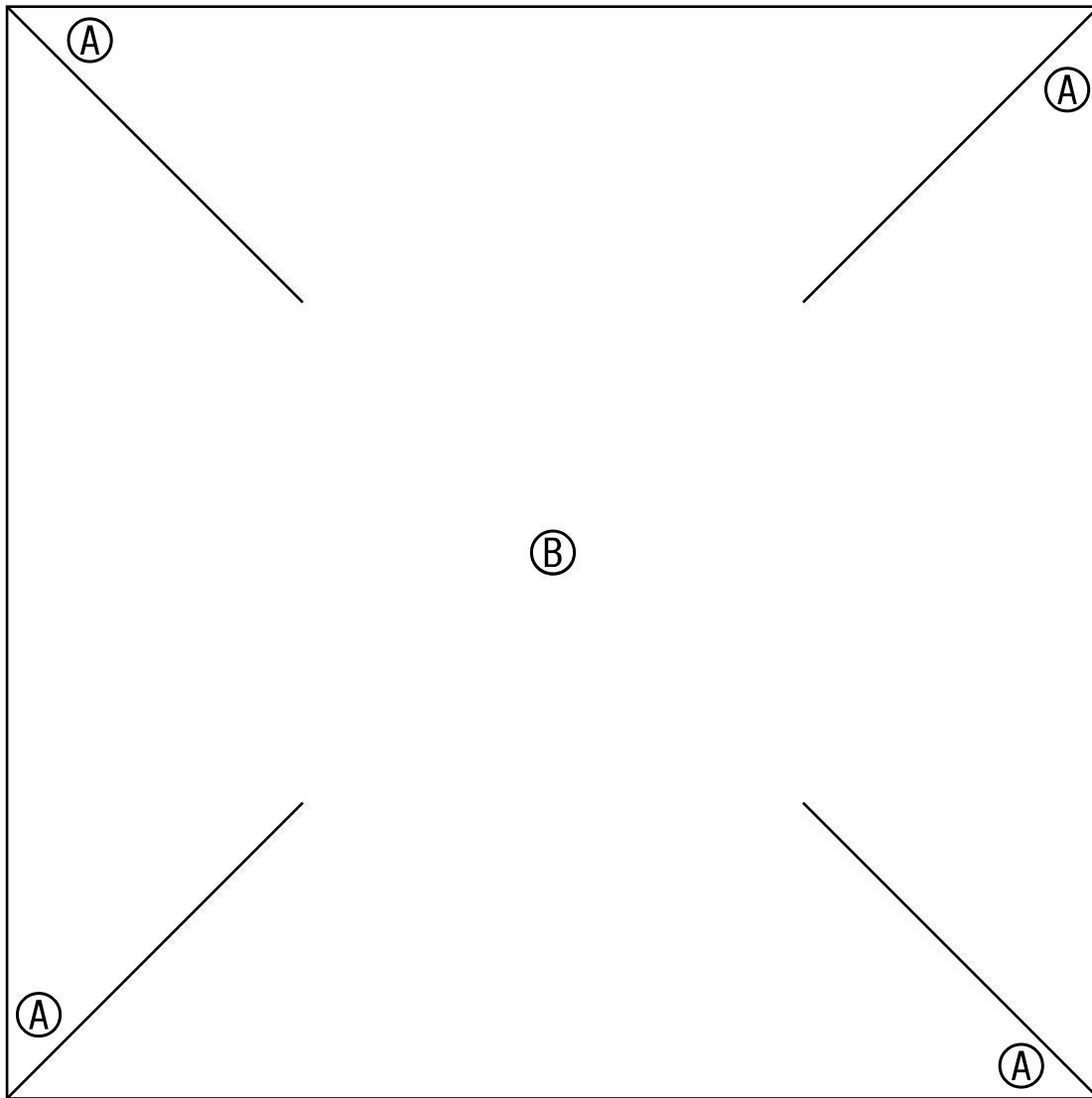
EVALUATE

Assess students' understanding with the Science Master for this article. You might also use the following prompts.

- **How does wind form?**
- **What does wind have the power to do?**

LANGUAGE ARTS: Make a Pinwheel

Follow the directions. Then talk about how air can make things move.

**What you need:**

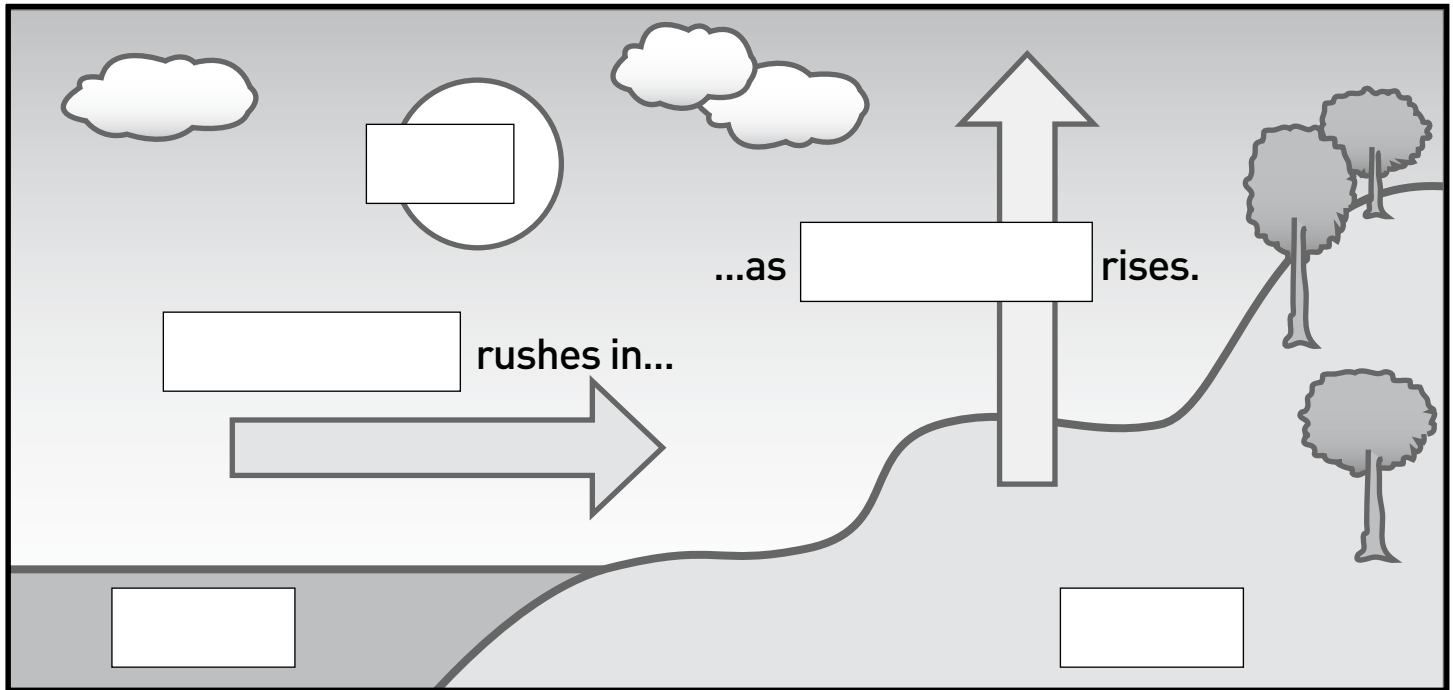
- crayons
- scissors
- a push pin
- a pencil with an eraser

1. Cut out the square. Color both sides of it.
2. Cut the other lines.
3. Fold each Ⓐ to Ⓑ.
4. Push the pin through Ⓑ. Get all four corners!
5. Push the pin into the eraser—not too tight!
6. Blow! What happens?

SCIENCE: What Makes Air Move?

Write the words to complete the diagram. Tell how wind forms.

sun	land	water	cool air	Warm air
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Draw what wind can do.



ANSWER KEY

From Seed to Tree

Language Arts: The Life Cycle of a Tree, page 4

Students should draw a seed, seedling, young tree, and adult tree of one tree species. They should write about how the tree progresses from one stage to the next during its life cycle.

Science: Parts of a Tree, page 5

Students should draw a picture of a tree and accurately label its roots, trunk, branches, and leaves.

My Animal Photos

Language Arts: Two-Syllable Words, page 8

Students should divide each word into two syllables and circle the words that identify the animals in the illustrations.

1. pen/guin; **bi/son**
2. gold/fish; **cam/el**
3. **leop/ard**; chip/munk
4. **pea/cock**; sea/horse
5. **duck/ling**; par/rot
6. ze/bra; **ta/pir**

Science and Social Studies: Helping Animals, page 9

On the top half of the worksheet, students should write “photographer” to identify the person on the left and “zookeeper” to identify the person on the right. They should draw a picture of an animal in the tent and write the animal’s name on the line at the bottom of the illustration.

On the bottom half of the worksheet, students should write about taking the animal’s photo. They should use all of the words in the Word Box: *zookeeper*, *photographer*, *camera*, *lights*, and *tent*

Wind Power

Science: Make a Pinwheel, page 12

Students should follow the directions to make a pinwheel. They should recognize that the pinwheel moves when they blow on it. They should discuss how moving air can make things move.

Science: What Makes Air Move?, page 13

On the top half of the worksheet, students should accurately label the following:

sun → circle

water → area on lower left side of illustration

land → area on lower right side

(Cool air) rushes in...

as (warm air) rises.

On the bottom half of the worksheet, students should draw a picture showing something made possible because the wind blows, such as flying a kite or sailing a sailboat.