



In This Guide

In this guide, you will find language arts and science lessons for the stories in the April issue of EXPLORER PIONEER.

Explorer Magazine

EXPLORER magazine is a classroom magazine specifically written for each grade, 2-5. Each grade's magazine contains a grade-appropriate reading experience, develops literacy skills and teaches standards-based science content. Great storytelling and stunning photographs teach your students about our planet and the people, plants, and animals that live on it. Use EXPLORER in your classroom to encourage students to explore our world and make it a better place.

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Looking at Eggs

LANGUAGE ARTS

Objectives

- Students will assess their familiarity with and knowledge of vocabulary words to strengthen their understanding of scientific terms.
- Students will examine how images add to and help explain a text.

Resources

- Vocabulary Assessment Master (page 6)
- Language Arts Assessment Master (page 7)

Summary

- The article “Looking at Eggs” introduces students to different properties of eggs, including color, texture, shape, and size.

BUILD VOCABULARY AND CONCEPTS

- **describe**
- **observe**
- **property**

Inform students that often it's easier to understand new vocabulary words if you think about what you already know.

Display the vocabulary words on a word wall or on the whiteboard. Give each student a copy of the **Vocabulary Assessment Master**. Instruct students to write each word on their papers. Then have them make checkmarks to show whether or not they've ever heard each word before. Invite students who have heard the words to share what they know.

Instruct students to use this information to write what they think each word means on their worksheets. Then display the Wordwise feature on page 9 of the projectable edition. Have students write those definitions on their worksheets and compare them with the definitions they wrote.

READ

Display pages 2-3 of the projectable magazine. Read aloud the headline. **Say:** *As this headline says, in this article we will be looking at eggs. When you look at eggs, you notice that they come in many different colors, textures, shapes, and sizes. These are properties of eggs, or things you can notice with your senses.*

As a class, brainstorm different examples of color, texture, shape, and size. Then, based on the article's headline, ask students which sense they will be using to observe the eggs in the article. [sight]

Encourage students to examine the photograph as you model how to use your sight to observe the properties of the eggs shown in this photograph. **Say:** *When I look at this photograph, I immediately notice the bright orange frog. Beside the frog, I can see small white circles. Those are the eggs. They have a clear, jelly-like circle covering them. These eggs look like they would be very soft and squishy. They look very different from other eggs I have seen.*

Give each student a copy of the **Language Arts Assessment Master**. Have students read the article on their own. As they read, tell students to select two photographs. Instruct them to compare the colors, textures, shape, and sizes of the eggs they see.

Looking at Eggs

LANGUAGE ARTS

TURN AND TALK

Have students turn and talk to discuss what they learned about the properties of eggs in the article.

Ask: *Which property can warn predators that eggs are poisonous? (color) Which property can you feel? (texture) Which property can keep eggs from cracking? (shape)* Invite students share what else they learned about the properties of eggs.

- **Strengthen Understanding** Inform students that it's essential for readers to understand scientific vocabulary when reading about science. **Say:** *Sometimes, words you've heard before have a different meaning when you're reading about science. It's important to understand that so you can follow along with the text. That also helps you can use the words correctly in new sentences of your own.* Challenge students to make accurate statements using each of the vocabulary words. Encourage them to use their **Vocabulary Assessment Masters** as resources. But remind them to be original. Students shouldn't restate sentences from the article. They should create new sentences of their own.

- **Interpreting Photographs** Remind students that interpreting images is a strategy to help them better understand what they read. Photographs tell more about the topic. They also help readers compare and contrast different types of things. Divide the class into small groups. Have students share the information they recorded on their **Language Arts Assessment Masters**. Based on their descriptions, challenge classmates to figure out which two eggs each student chose to compare. As a class, discuss how the images helped students learn about properties as they read the text.

WRITE AND ASSESS

You may want students to write about what they learned to assess understanding. Encourage students to reflect upon what they read and how it affected their ideas about the topic.

- *What is a property?*
- *What do you do when you describe something?*
- *What surprised you about what you read?*

Looking at Eggs

SCIENCE

Objectives

- Students will recognize that color, texture, shape, and size are properties of matter.
- Students will understand how matter can be described and classified by its observable properties.

Resources

- Content Assessment Master (page 8)
- Comprehension Check (page 9)
- "Looking at Eggs" Interactive Whiteboard (optional)

Science Background

Matter is anything that has mass and takes up space. Everything around you is made of matter. Water is made of matter, air is made of matter, eggs are made of matter, too.

People observe matter with their senses—sight, sound, smell, touch, and taste. This allows them to identify properties such as color, texture, size, and shape.

Once we identify the properties of matter, we can describe it. For example, a color might be blue, red, black, or green. Textures include soft, hard, fuzzy, and bumpy.

Based on those descriptions, objects can be classified into categories to show how they are alike and different. Sorting matter into categories like this helps people better understand the world around them.

ENGAGE

Tap Prior Knowledge

Describe balls used in two different sports. Tell them to raise their hands when they know which ball you are describing: orange with black stripes, slightly bumpy (basketball), round, medium-sized; white, dimpled, round, small (golf). Encourage students to describe other items based on color, texture, shape, and size.

EXPLORE

Preview the Lesson

Instruct students to scan the article's images in their magazines. **Ask:** *How are all of these photos alike?* (They all show eggs.) *How are they different?* (No two eggs are alike.) Tell students that they will learn about these differences as they read the article.

Set a Purpose and Read

Have students read the article in order to recognize that color, texture, shape, and size are properties of matter and that matter can be described and classified by its observable properties.

EXPLAIN

Recognizing Properties of Matter

Display the Wordwise feature on page 9 of the projectable magazine. Review what a property is and what it means to describe and observe something. Discuss the properties of color, texture, shape, and size. Then point out to students that eight of the animals that laid the eggs they see in the article are identified in the text. Review the article as a class to find them. (snail, goose, frog, swan, turtle, seabirds, octopus, butterfly) Give each student a copy of the **Content Assessment Master**. In small groups, have students observe and describe the color, texture, shape, and size of these eight types of eggs in the article.

Looking at Eggs

SCIENCE

EXPLAIN

(continued)

Classifying Matter

As a class, have students share the information they recorded on their **Content Assessment Masters**. Point out that several of their answers are the same. For example, snail eggs, frog eggs, and turtle eggs are all round. Many of the eggs are white. **Say:** *When you find similarities like these, you can sort eggs into categories. Scientists often classify matter based on properties like these.* Guide students as they identify other ways to classify the eggs in the article. Then remind students that they did not observe and describe three of the eggs in the article, the eggs at the bottom of page 4 and the two eggs in the photo on page 8. Encourage students to add these eggs to different categories of eggs.

ELABORATE

Find Out More

Point out to students that color, texture, shape, and size are only four properties of matter. As a class, conduct research to identify other properties that could be used to describe eggs. Challenge the class to classify the eggs in the article based on these new properties.

Extend Your Thinking About Eggs

Inform students that when people think of eggs, the first animal they typically think of is a bird. But, as this article shows, many different types of animals grow inside eggs. As a class, conduct research to find examples of other baby animals that come from eggs.

EVALUATE

Have students record their answers to the assessment questions in their science notebooks or on a separate sheet of paper.

- *What do you do when you describe something?* (tell what it is like)
- *Which property describes how something feels when you touch it?* (texture)
- *What does a goose egg feel like?* (solid)

If you wish, have students complete the **Comprehension Check** to assess their knowledge of concepts mentioned in the article. You may also wish to examine the optional **Interactive Whiteboard** lesson that accompanies this article.

Name _____

Date _____

VOCABULARY ASSESSMENT: Looking at Eggs

Use this organizer to examine each vocabulary word.

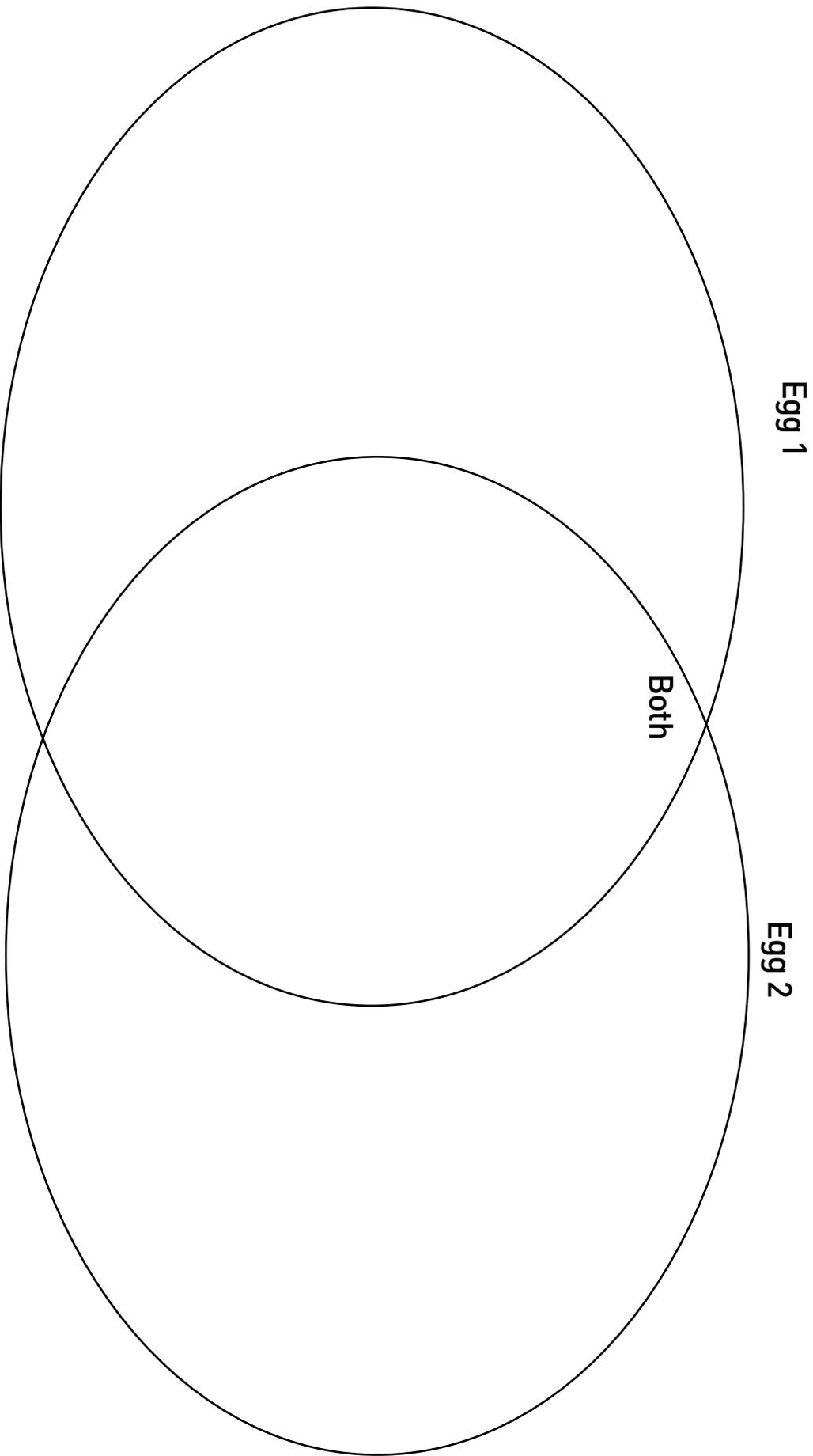
What is the word?	Do you know the word?		What you think the word means?	How does the article define the word?
	Yes	No		

Name _____

Date _____

LANGUAGE ARTS ASSESSMENT: Looking at Eggs

Use this diagram to compare and contrast the colors, textures, shapes, and sizes of two eggs shown in the article.



CONTENT ASSESSMENT: Looking at Eggs

Observe and describe the properties of the eggs in the article.

Animal	Egg Color	Egg Texture	Egg Shape	Egg Size
Snail				
Goose				
Frog				
Swan				
Turtle				
Seabird				
Octopus				
Butterfly				

COMPREHENSION CHECK: Looking at Eggs

Read each question. Fill in the circle next to the correct answer or write your response on the lines.

1. Which of these words describes an egg's shape?
A white
B round
C hard

2. Which of these words describes an egg's color?
A blue
B oval
C soft

3. Which of these words describes an egg's texture?
A clear
B smooth
C pointed

4. Which of these words describes an egg's size?
A see-through
B measure
C big

5. What is a property?

Compost

LANGUAGE ARTS

Objectives

- Students will predict definitions and then write sentences to better understand unfamiliar words.
- Students will describe how the author uses reasons to support specific point in the text.

Resources

- Vocabulary Assessment Master (page 14)
- Language Arts Assessment Master (page 15)

Summary

- The article “Compost” explains how to make compost, how composting helps our planet, and how it helps our gardens grow.

BUILD VOCABULARY AND CONCEPTS

- **compost**
- **decay**
- **environment**
- **microorganism**
- **nutrient**

Give each student a copy of the **Vocabulary Assessment Master**. Invite students to share what they know about each vocabulary word.

Divide the class into pairs. Using what they already know as a base, instruct pairs to write a definition for each word. Then have them write a sentence for each word, based on the definitions they wrote.

Display the Wordwise feature on page 15 of the projectable magazine. Review the definitions as a class. Have students add these definitions to their worksheets. Instruct pairs to write new sentences, using each word as it is defined in the article.

Invite volunteers to read aloud the before and after sentences they wrote for each word. As a class, examine how new knowledge expanded students' understanding of each word.

READ

Display pages 10-11 of the projectable magazine. Have students examine the image. Invite a volunteer to read aloud the headline and text. **Then ask:** *Why do people recycle things?* (to turn them into something new) *Why does the photo show fruit and vegetable scraps?* (These things are going to be turned into compost.) *Why does that headline contain a banana peel?* (That can be turned into compost, too!)

Point out to students that every answer they gave was a reason. One thing happened because of another. **Say:** *When people write, they have a main topic supported by key points. Each one of these key points needs something to support it, too. That's where reasons come in. Reasons tell why the writer thinks each of these points is important. They help readers understand what the writer is trying to say.*

Give each student a copy of the **Language Arts Assessment Master**. Instruct them to read the article on their own. As they do, have them record what they think is the main point of each section. Have them record reasons from each section that support those main points.

LANGUAGE ARTS

TURN AND TALK

Have students turn and talk to discuss what they learned about how a composting. **Ask:** *What is a nutrient?* (a substance that plants, animals, and people need to live and grow) *How do worms help create compost?* (They eat through decaying matter.) *What else does this in a compost pile?* (insects and microorganisms) Encourage students to share other interesting facts they learned about compost.

- **Identifying Reasons** After reading the article, remind students that reasons tell why something happened. Evidence explains how. Invite students to share their **Language Arts Assessment Masters** in small groups. Challenge them to examine one another's results to determine that the main points students identified make sense and the reasons they recorded are valid.

WRITE AND ASSESS

You may want students to write about what they learned to assess understanding. Encourage students to reflect upon what they read and how it affected their ideas about the topic.

- *What is compost?*
- *What does composting do?*
- *What surprised you about what you read?*

Compost

SCIENCE

Objectives

- Students will understand how composting breaks matter down into smaller pieces.
- Students will recognize the importance of Earth Day.

Resources

- Content Assessment Master (page 16)
- "Composting is Caring" poster (Teacher's Edition)
- "Make Every Day Earth Day" poster (Teacher's Edition)
- Comprehension Check (page 17)

Science Background

Compost is a mixture of decayed organic material that is used to improve the soil in a garden. When people compost, they recycle items such as kitchen and yard waste. They also create a rich material that, when mixed with soil, helps more plants grow.

Many different types of organic waste can be added to a compost pile. Some, like grass clippings and fruit and vegetable peelings, are high in nitrogen. This activates heat within the pile and promotes decomposition.

Brown materials, such as dead leaves and cardboard, are high in carbon. This provides fuel to the pile, giving the heat ample material to burn.

Compost piles also need the right amount of air and water for material to break down. To get more air, turn the pile periodically. To keep the pile as moist as a sponge, it helps to have a cover that will keep the moisture in.

ENGAGE

Tap Prior Knowledge

Ask students if they've ever seen a rotting log. If so, encourage them to describe what they saw. Discuss how the log looked different from the branches on a tree. Discuss reasons why this change might have happened. Brainstorm ideas for what will happen to the rotting log next.

EXPLORE

Preview the Lesson

Display pages 10-11 of the projectable magazine. Instruct student to examine the photo. **Ask:** *What is the first thing you see?* (food scraps) Tell students to look closer. **Ask:** *What can you see at the bottom of this photo?* (soil) Brainstorm ideas about why the soil is there. Inform students that they'll know the answer after they read the article.

Set a Purpose and Read

Have students read the article in order to understand how composting breaks matter down into smaller pieces and to recognize the importance of Earth Day.

EXPLAIN

Understanding Composting

Display pages 10-11 of the projectable magazine. Have students take another look at the image. **Say:** *When you look at this photo, you see food scraps and soil. But you are also looking at different stages of the composting process.* Tell students that to understand how that is possible, they need to understand how composting works. Display the **"Composting is Caring" poster**. Give each student a copy of the **Content Assessment Master**. Have students record information about the composting as the class examines the process. When you're finished, discuss in detail how worms, insects, and microorganisms eat decaying matter and turn it into compost. **Then ask:** *Where do you find food scraps in the composting process?* (beginning) *What about soil?* (middle) *What happens during the final stage of this process?* (New fruits and vegetables grow.).

SCIENCE

EXPLAIN

(continued)

Recognizing Earth Day

Point out to students that many people have compost bins. Many more recycle plastics and paper. Discuss how doing these things protects the environment. Inform students each year people celebrate nature on a day called "Earth Day." The purpose of this day is to show how even one person's actions can make a difference. Display the "**Make Every Day Earth Day**" poster. Discuss reasons why everyday actions are important. Then give each student a copy of plain white paper. Encourage students to make their own Earth Day posters.

ELABORATE

Find Out More

Display page 14 of the projectable edition. Zoom in on the photo of the compost box. Point out to the class that compost bins don't have to be elaborate and they don't have to take up a lot of space. As a class, conduct research to learn how to build a compost bin.

Extend Your Thinking About Composting

Instruct students to examine the images in the article. Compile a list of every food they recognize that is being recycled to create compost. Brainstorm additional foods that could be added to that list.

EVALUATE

Have students record their answers to the assessment questions in their science notebooks or on a separate sheet of paper.

- *What is a microorganism?* (a tiny, living thing)
- *What do microorganisms help do?* (They break down the decaying material.)
- *What happens after you mix compost with soil?* (New plants can grow.)

If you wish, have students complete the **Comprehension Check** to assess their knowledge of concepts mentioned in the article.

Name _____

Date _____

VOCABULARY ASSESSMENT: Compost

Use this organizer to study each vocabulary word in the article.

Word					
My Definition					
Sentence					
Definition from the Article					
Sentence					

Name _____

Date _____

LANGUAGE ARTS ASSESSMENT: Compost

Record the main point from each section in the article.
Record reasons that support each main point.

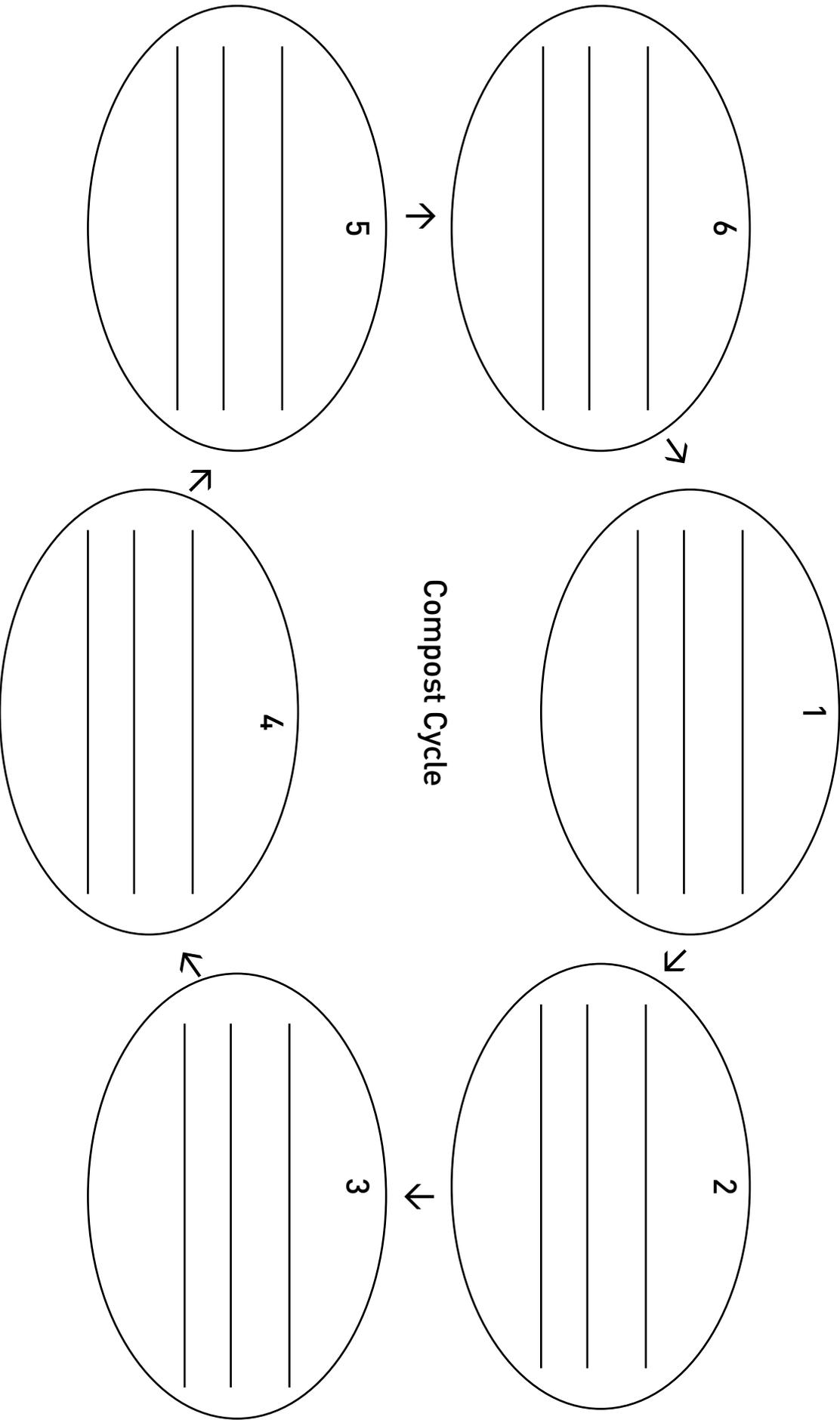
	Main Point	Reasons
A Person's Job		
Nature's Job		
Good for Plants		
Good for Earth		

Name _____

Date _____

CONTENT ASSESSMENT: Compost

Record information about each stage of the composting cycle.



COMPREHENSION CHECK: Compost

Read each question. Fill in the circle next to the correct answer or write your response on the lines.

1. What is in compost?
A plastic
B organic material
C aluminum cans

2. Which two words describe a microorganism?
A small, living
B big, dead
C organic, material

3. How do people help create compost?
A They pile it up.
B They break it down.
C They grow it.

4. What must nature do to create compost?
A Pile it up.
B Break it down.
C Grow it.

5. What is compost?

Fantastic Flier

LANGUAGE ARTS

Objectives

- Students will identify the main topic of the text and of specific paragraphs within the text.
- Students will explain concepts based on information in the text.

Resources

- Vocabulary Assessment Master (page 6)
- Language Arts Assessment Master (page 7)

Summary

- The article “Fantastic Flier” introduces students to the rufous hummingbird, a tiny bird that makes one of the longest migratory journeys of any bird in the world, as measured by body size.

BUILD VOCABULARY AND CONCEPTS

- **adaptation**
- **migration**
- **torpor**

Display the vocabulary words on a word wall or on the whiteboard. Point out to students that when they read they will come across words they don't know. Remind them that using context clues such as the sentences before and after an unknown word and photographs on the page can help them figure out what the unfamiliar word means.

Invite a volunteer to read the definition of *adaptation* in the Wordwise feature on page 23 of the article. Examine this word in context. Then give each student a copy of the **Vocabulary Assessment Master**. Instruct students to write the word's definition and create a detailed sketch showing what it means. Inform students that their drawings won't all be the same. The point is for students to draw the word in a way that will help them remember its definition. Examine the other words in this way, too.

READ

Give students a few minutes to scan the article in their magazines. **Ask:** *What do you think this article is about? Why?* Encourage students to share their ideas with the class.

Explain to students that what they just attempted to identify was the main idea of the article. Tell students that the main idea is the main topic. Everything in the article is connected to the main idea. Point out that paragraphs have a main idea, too. Everything in a paragraph is connected to its main idea.

Display pages 18-19 of the projectable magazine. Model how to identify the main idea of the article.

Say: *When I look at these pages, I notice two things right away: the photo and the headline. The photo tells me that this article is about hummingbirds. The headline tells me that this bird is a fantastic flier. If I read the subhead, I get another clue. Apparently this little bird goes on an amazing journey. That is the main idea of the article!*

Have students read the article in small groups. As students read, encourage them to search for details that support the main idea of the article.

LANGUAGE ARTS

TURN AND TALK

Have students turn and talk to discuss what they learned about the rufous hummingbird's migration.

Ask: *Where did the bird's journey start?* (Alaska) *Where did it end?* (Mexico) *Why is this migration so amazing?* (It is more than 5,600 kilometers long.)

Invite students to identify specific things the bird did along the way.

- **Identify Main Ideas** Remind students that the article has a main idea. But paragraphs have main ideas, too. Explain that they can find the main idea of a paragraph the same way they found the main idea of the article. They must search for important clues. Give each student a copy of the **Language Arts Assessment Master**. Instruct students to write the main idea of the article in the middle circle. Then have them select four more paragraphs in the article. Challenge them to write the main idea of each. Encourage students to turn and talk to analyze and compare results. Challenge them to recognize how the main idea of each paragraph ultimately supports the main idea of the text.

- **Explain Concepts** After reading the article, **say:** *One way to see if you understand information is to try to tell someone else about the topic. If you can't explain the concept, you might need to read the article again.* Have students turn and talk to explain to a partner how why the rufous hummingbird completes this lengthy migration. Prompt discussion with questions such as: *Why do these birds fly to Alaska in the summertime?* (There's plenty of food to eat.) *Why do they fly to Mexico for the winter?* (That's when the flowers are blooming there.) *What is amazing about his bird's migration?* (It's one of the longest migrations of any bird on Earth.)

WRITE AND ASSESS

You may want students to write about what they learned to assess understanding. Encourage students to reflect upon what they read and how it affected their ideas about the topic.

- *What is a migration?*
- *What does the rufous hummingbird do before it leaves for Mexico?*
- *What surprised you about what you read?*

Fantastic Flier

SCIENCE

Objectives

- Students will understand how hummingbirds move to different places to survive.
- Students will understand how the rufous hummingbird's wings allow it to fly in many different ways.

Resources

- Content Assessment Master (page 8)
- Comprehension Check (page 9)

Science Background

Rufous hummingbirds are brightly colored birds. The male has brilliant orange feathers. Females are green and orange. They have been described as the feistiest hummingbirds in North America.

These slender, little birds—which measure between 8-9 cm (3.2 - 3.7 in) long—don't hesitate to fight off other birds twice their size. They will even chase away a curious chipmunk.

It takes bravado like that to accomplish everything this little bird does. The rufous hummingbird can beat its wings up to 62 wing beats a second. And it has an amazing memory.

But its biggest achievement, by far, is the annual solo migration it completes from Alaska to Mexico. The one-way journey is 5,600 kilometers (3,900 miles) long. If you break that down by body lengths, the rufous hummingbird has the longest migration of any bird on Earth.

Once a female arrives at the desired location, she starts building a nest. When finished, the nest will be 5 cm (2 in) wide. She builds it out of soft plants held together with spider webs. As a final touch, she decorates her nest with lichen, moss, and bark. This camouflages the nest and keeps it hidden from predators.

ENGAGE

Tap Prior Knowledge

Ask students if they've ever seen a hummingbird. Have them describe what the hummingbird looked like and what it was doing. Guide students as they compare hummingbirds to other birds they've seen.

EXPLORE

Preview the Lesson

Display pages 18-19 of the projectable magazine. Tell students to examine the photo and describe the hummingbird. Invite a volunteer to read aloud the headline and subhead. **Ask:** *According to the headline, this hummingbird is fantastic flier. What about the picture helps you see that?* (Students may note that the wings are blurred, which indicates that they are beating very quickly.) *Based on the subhead, why does this hummingbird need to be a fantastic flier?* (It completes a long-distance journey.) As a class, brainstorm ideas about where the hummingbird might be traveling and why.

Set a Purpose and Read

Have students read the article in order to understand how hummingbirds move to different places to survive and how the hummingbird's wings allow it to fly in many different ways.

EXPLAIN

How Hummingbirds Survive Migration

Instruct students to examine the article in their magazines. **Ask:** *Where does this hummingbird's journey start?* (Alaska) *Where does it end?* (Mexico) Find these two places on a map. As a class, examine all of the territory this hummingbird must fly over to complete its annual migration. Discuss reasons why the bird would take such a long trip. Then give each student a copy of the **Content Assessment Master**. Tell students that the article is divided into four parts: an introduction and three sections. Challenge students to find one example in each part that tells about something the hummingbird does that helps it survive its migration. Tell students to record this information on their worksheets.

SCIENCE

EXPLAIN

(continued)

Understanding How Hummingbirds Fly

Display the diagram at the bottom of pages 6-7 in the projectable magazine. Explain to the class that hummingbirds are such amazing fliers because their wings can move in many different ways. Point out that people do this same thing with their arms when they swim. Zoom in on the first illustration. Discuss how the bird is moving its wings. Invite a volunteer to move his or her arms to demonstrate. Examine the other illustrations in this same way. Discuss how being able to rotate the wings 180° helps hummingbirds survive when they migrate.

ELABORATE

Find Out More

Remind students that the article describes the rufous hummingbird's migration from Alaska to Mexico. Point out, however, that this is an annual trip. Each spring, the hummingbird flies from Mexico to Alaska to reach its breeding grounds. Instruct students to conduct research to learn about this trip. What happens along the way, and what happens when the hummingbird reaches its destination?

Extend Your Thinking About Hummingbirds

Display page 9 of the projectable magazine. Remind students that there are many different kinds of hummingbirds. Invite volunteers to read aloud the information to learn about the four species shown here. Discuss how adaptations help each bird survive. Then instruct students to conduct research to find out if these hummingbirds migrate. If so, where do they go and how long is the trip?

EVALUATE

Have students record their answers to the assessment questions in their science notebooks or on a separate sheet of paper.

- *What do rufous hummingbirds do when they hover?* (They drink nectar from flowers.)
- *Why do they go into torpor?* (to save energy)
- *Why do they do after they get to Mexico?* (make a nest, find a mate, eat, and rest)

If you wish, have students complete the **Comprehension Check** to assess their knowledge of concepts mentioned in the article.

VOCABULARY ASSESSMENT: Fantastic Flier

Record the definition of each vocabulary word. Draw a picture to help you remember what each word means.

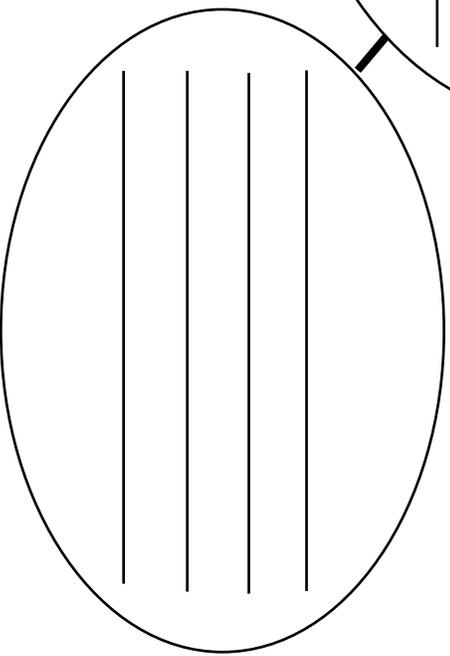
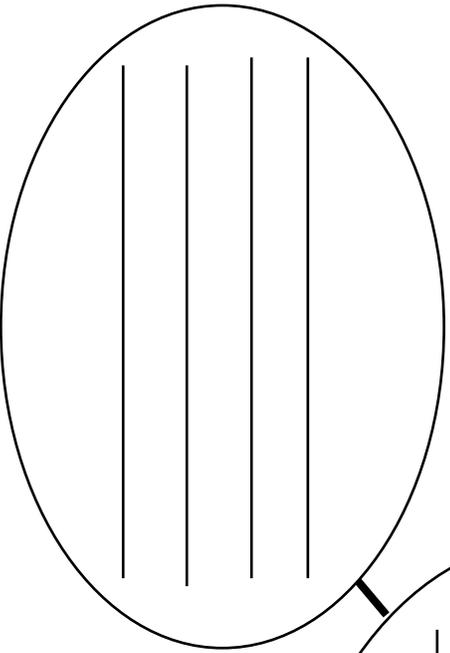
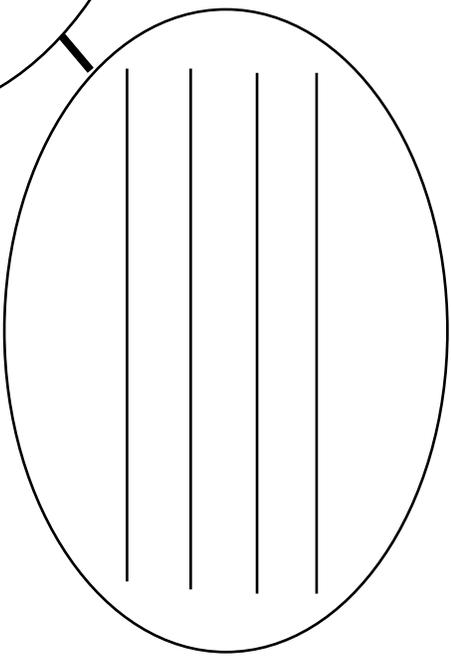
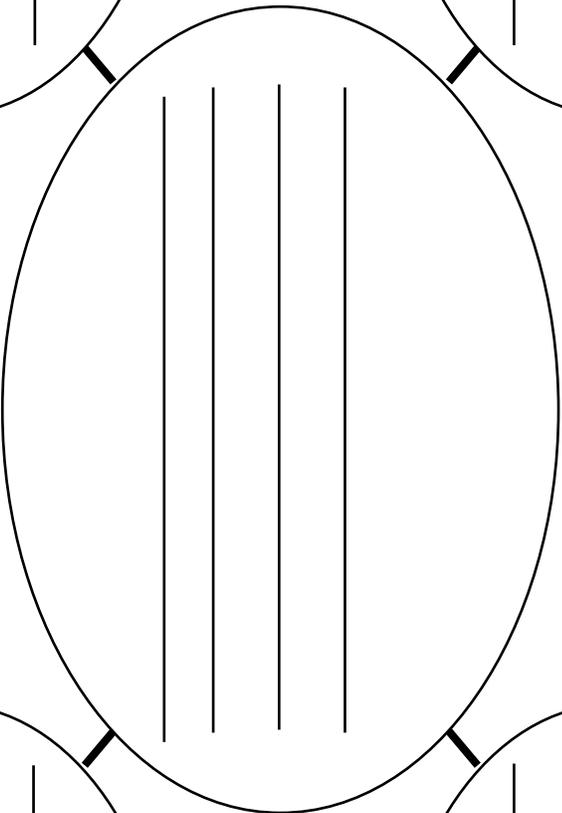
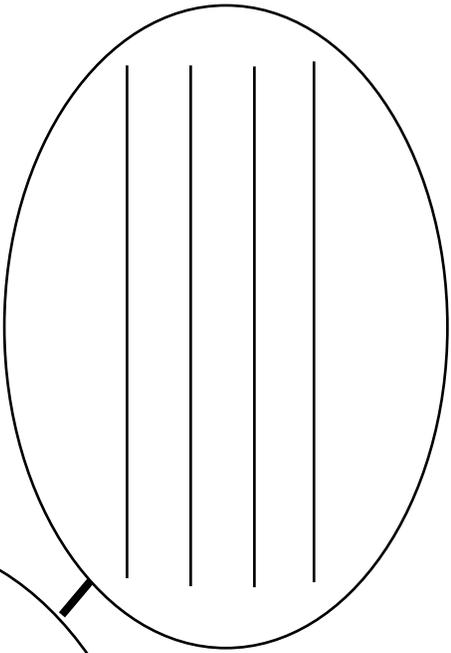
Word	Definition	Sketch
adaptation		
migration		
torpor		

Name _____

Date _____

LANGUAGE ARTS ASSESSMENT : Fantastic Flier

Write the main idea of the article in the middle circle. Pick four paragraphs. Write the main idea of each.



CONTENT ASSESSMENT: Fantastic Flier

Record examples that tell how the hummingbird survives on its migration.

<p>Introduction</p>	<p>Fueling Up</p>
<p>Tiny but Tough</p>	<p>Touching Down</p>

COMPREHENSION CHECK: Fantastic Flier

Read each question. Fill in the circle next to the correct answer or write your response on the lines.

1. What is an adaptation?
A a behavior or body part that helps an animal survive
B a regular move from one region or climate to another
C a deep sleep
2. What is torpor?
A the ability to fly backward
B a deep sleep
C a sweet flower
3. Where does the rufous hummingbird spend the summer?
A Canada
B Alaska
C Mexico
4. Where does the rufous hummingbird spend the winter?
A Canada
B Alaska
C Mexico

5. Tell how a hummingbird's wings move when it hovers:

ANSWER KEY

Looking at Eggs

Assess Vocabulary, page 6

Students should record the vocabulary words from the Wordwise feature on page 9, make checkmarks to show if they've heard each word before, and write definitions in their own words. Then they should record the definitions from the article.

describe: to tell what something is like

observe: to see and/or notice something

property: something about an object you can observe with your senses

Assess Language Arts, page 7

Answers will vary depending on which eggs students choose to compare.

Assess Content, page 8

Possible responses include: Snail: pink/smooth/round/small; Goose: white/hard/oval/medium; Frog: clear/soft/round/small; Swan: white/had/oval/large; Turtle: white/smooth/round/small; Seabird: blue and black/hard/pointed/medium; Octopus: clear/soft/pointed/small; Butterfly: white/fringed/round/small

Comprehension Check, page 9

1. B; 2. A; 3. B; 4. C; 5. A property is something you can observe with your senses.

Compost

Assess Vocabulary, page 14

Students' definitions and the sentences they write will vary. They should record the words and definitions from the Wordwise feature on page 15.

compost: a mixture of decayed organic material that is used to improve the soil in a garden

decay: to slowly break down by a natural process

environment: the natural world

microorganism: a tiny, living thing

nutrient: a substance that plants, animals, and people need to live and grow.

Assess Language Arts, page 15

Students' answers may vary, but they should be logical and directly connected to the content of each section.

Assess Content page, 16

Students' diagrams will vary but should contain the following steps: 1. Organic material is put into a pile. 2. Air and water help the pile rot. 3. Worms, insects, and microorganisms eat the rotting pile. 4. Over time, the pile breaks down into compost. 5. Compost is mixed with soil. 6. Plants grow in the soil.

Comprehension Check, page 17

1. B; 2. A; 3. A; 4. B; 5. Compost is a mixture of decayed organic material that is used to improve the soil in a garden.

Fantastic Flier

Assess Vocabulary, page 22

Students should record the words and definitions from the Wordwise feature on page 8.

adaptation: a behavior or body part that helps an animal survive

migration: to move regularly from one region or climate to another

torpor: a deep sleep

Sketches should accurately reflect the meaning of each word and how the terms are connected. Students should label all three terms in the larger drawing. Evaluate each response for accuracy.

Assess Language Arts, page 23

Students should record the main idea of the article. (Rufous hummingbirds go on an amazing journey.) Additional answers will vary, depending on which paragraphs students choose to investigate.

Assess Content, page 24

Introduction: The hummingbird fuels up on nectar; Fueling Up: It eats along the way; Tiny but Tough; It hovers as it drinks nectar; Touching Down: It goes into torpor, which is a deep sleep, to save energy.

Comprehension Check, page 25

1. A; 2. B; 3. B; 4. C; 5. The hummingbirds wings move forward and backward in a repeated figure-eight.