TEACHER'S GUIDE
Pioneer and Trailblazer
Vol. 18 No. 2

IN THIS GUIDE:

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

Pioneer
Why Birds Matter 470
Out of Eden 500
Animal Migration.....490

Trailblazer
Why Birds Matter 720
Out of Eden 620
Animal Migration.....650

Standards Supported

- Common Core State Standards (CCSS)
- Next Generation Science Standards (NGSS)
- C3 Framework for Social Studies State Standards (C3)

For additional resources to extend your students' learning, visit Explorer's website:
NATGEO.ORG/EXPLORERMAG-RESOURCES

National Geographic Learning Framework

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

A — *Attitudes*

National Geographic kids are:

CURIOUS about how the world works, seeking out new and challenging experiences throughout their lives.

RESPONSIBLE, with concern for the welfare of other people, cultural resources, and the natural world. NG kids are respectful, considering multiple perspectives, and honoring others regardless of differences.

EMPOWERED to make a difference. NG kids act on curiosity, respect, and responsibility. They are adventurous and persist in the face of challenges.

S — *Skills*

National Geographic kids can:

OBSERVE and document the world around them and make sense of those observations.

COMMUNICATE experiences and ideas effectively through language and media. They are storytellers!

COLLABORATE with others to achieve goals.

SOLVE PROBLEMS by generating, evaluating, and implementing solutions after identifying alternatives, weighing trade-offs, and making well-reasoned decisions.

K — *Knowledge*

National Geographic kids understand:

THE HUMAN JOURNEY is all about where we have been, where we live now (and why), and where we are going.

OUR CHANGING PLANET encompasses all that coexists on our planet—interconnected through systems that generate and nurture each other.

WILDLIFE AND WILD PLACES inhabit our planet—from the butterflies in our backyards to the lions in Africa.

LANGUAGE ARTS Ask Questions As You Read

NATIONAL GEOGRAPHIC Explorer

Second Grade Standard Supported

• **CCSS Reading Informational Text:** Ask and answer such questions as *who, what, where, when, why,* and *how* to demonstrate understanding of key details in a text. (2-1)

Third Grade Standard Supported

• **CCSS Reading Informational Text:** Ask and answer such questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-1)

What You'll Need

- "The Magic Behind Their Movement" (*Explorer*, pages 16–23)
- Think Sheet (Teacher's Guide, page 6)
- Clipboards and 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 16–17 in the magazine.

> **TEACHER TIP:** The reason kids are grouped on the floor is that the focus needs to be on the teacher's instruction. However, the whole point of "Connect and Engage" is to get kids fired up, and there will be plenty of interaction throughout this segment and the entire lesson.

Say: *Take a look at all of these animals! What do you notice about them? Turn to each other and talk.*

Kids turn and talk about the animals.

Say: *The title of this article is "The Magic Behind Their Movement." Turn and talk about what you think the title means.*

Kids turn and talk about what the title might mean. Some have an idea; others aren't so sure.

Say: *I think this title is talking about animals and their movement. I am inferring this because the pictures are showing all different kinds of animals. I'm curious about the word magic though. I'm wondering what is the magic behind their movement. Take a minute and preview pages 16 and 17 and see what you find out.*

Kids peruse the photos and read the introduction on page 17.

Say: *Is anyone getting a better idea of what movement the title is talking about? Does anyone want to share what you think?*

A few kids share out.

Say: *Look! The word migrate is used on page 17 in that section labeled "Wildlife." Let's find out more.*

MODEL (10 minutes)

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

> **TEACHER TIP:** While this segment of the lesson is about the teacher modeling for students, be careful not to go on and on. This has to be interactive. Kids should be turning and talking a lot.

Say: *This article is nonfiction, which, as you know, includes real, true information. Nonfiction writers write nonfiction to give us information, to teach us something. Nonfiction readers read to learn new information. One of the most important nonfiction reading strategies is to ask questions as you read. Sometimes we have questions when we read. If we stop to talk about our questions and read on to see if we find the answers, it can help us understand what we are reading and learning.*

Say: *I am going to read through a bit of this article and show you my thinking. When I have a question about something, I'm going to write it on a Post-it note.*

Say: *Turn to each other and talk. Have you ever read any nonfiction and had questions about what you were reading?*

Kids turn and talk. A few share out their ideas.

Say: *Okay, let me show you how it works for me.*

Move to page 18 and read the first paragraph.

Say: *In this first paragraph is the word migration. I have a question about that. I'm going to write it down: What is migration? But I'm going to keep reading to see if there is more information.*

Read on.

Say: *There it is—the answer to my question. It says that many animals migrate, or move from one place to another. Now I know that migration is when animals move from one place to another. I'm going to put an "A" on my note, so I know this question was answered. But now I wonder why they migrate, or move from one place to another. Sometimes answers bring up new questions. I'm going to write that question down, too, and keep reading. Oh, and here's the answer right away—they search for food or for places to have babies.*

Mark the Post-it with an A.

Say: *I'm going to mark my note with an A so I know my question is answered in the text. But remember that sometimes questions are answered, and sometimes they are not.*

GUIDE (10 minutes)

Hand out Think Sheets and have kids attach them to their clipboards. Kids remain in a group in front of you on the floor.

Say: *So what did you see me do as I was reading about migration? Turn and talk about what you noticed me doing.*

Kids talk and share out things such as "I noticed you asked questions as you were reading." " I noticed you write questions on your Post-it." "I noticed you wrote an A for Answer on your Post-it."

Say: *Good thinking. I am going to read on about another migrating animal. I'm thinking that this part on the red-sided garter snakes may bring up some questions, too. What do you think?*

Say: *Now it's your turn. As I read this part, when you have a question, jot it down on a Think Sheet square.*

Read the first paragraph of "Slow Slither."

Say: *Wow! Some amazing information here! If you have a question, write it down on your Think Sheet square.*

Say: *Okay, now turn and talk, sharing what you learned and any questions you had.*

Kids turn and talk.

Say: *Who would like to share their new learning and any questions they had?*

Several kids share out.

Say: *Great, now I'll read on. And remember, if your question is answered in this part, let's stop and talk about it, and then you can underline your question on your Think Sheet square and write an A so you know the text has answered this question.*

Say: *Okay, go ahead and turn to the person next to you and share what questions you had and if they were answered in the text. You might even want to sketch the answer to your question on your Think Sheet square.*

A few kids share out.

COLLABORATE (25 minutes)

TEACHER TIP: Kids will partner up and use the jigsaw method to read the rest of the article. Each partner team will read one section of their choosing. When students share out to the class, they will learn about the other sections in the article. When partners finish their chosen section, they are free to read another, if there is time.

Say: *Now it's time for you to read with a partner. Choose one of the sections to read. You can read about Dall sheep in "Moving Up in the World," red crabs in "Searching for the Sea," Adelie penguins in "Over the Ice," or whooping cranes in "The Great Glide." As you read, jot down any questions you have on your Think Sheet squares. Remember to ask questions as you read and jot down any questions you have on your Think Sheet squares. Questioning is the strategy that keeps us reading. Our curiosity drives us to find answers. If you find the answer to a question, mark your Think Sheet with an A for Answer next to the question. If you finish the section you chose, feel free to read another section and practice the strategy with that section, too. Any questions? Okay, Happy Reading!*

Partners read their chosen section, as they practice the ask questions as you read strategy. Move around the room, conferring with partners.

SHARE THE LEARNING (10 minutes)

Kids join a sharing circle with you and share out, using respectful language.

> **TEACHER TIP:** The sharing phase is done in a circle, so that the focus is on one another rather than the teacher. During the instruction phase, kids are bunched up in front of the teacher, so that the focus is on the instruction.

Say: *Okay, now it's time to share any questions you had, answers you found, and any new learning. Choose a Think Sheet square with a question you would like to share. I am going to invite [student name] to share. We are going to share using respectful language. So when I ask: "[student name] would you like to share your new learning?" You can say: "Yes, thank you." Then you can share your question, answer, and new learning. After you share, you can invite someone else to share. To do that, you need to call on the person by name and use the same language we just practiced. When we use polite, respectful sharing language, everyone pays closer attention to the important information being shared.*

Kids share out and invite others to share, always using the respectful sharing language that was modeled. There should be time for about 3 or 4 kids to share out with the whole group. Once they are finished, have everyone turn and share with the person next to them, so that all have a chance to be heard.

Say: *We learned so much today about animals on the move. Who has an idea of why "The Magic Behind Their Movement" is the title of the article? What do you still wonder about these animals and their migration? Turn and talk about that.*

Several kids share out.

Say: *This is really kind of magical, isn't it! Now I understand why the writer used the word magic in the title.*

Say: *We had lots of questions answered about when, why, and how some animals migrate. Can you believe all the awesome new information about migration that we learned? My favorite was the spiny lobster and how they link together in a long chain. I'd love to see that! How about you? What was your favorite?*

Say: *But some of you had questions you didn't get answered—right?*

Some kids nod.

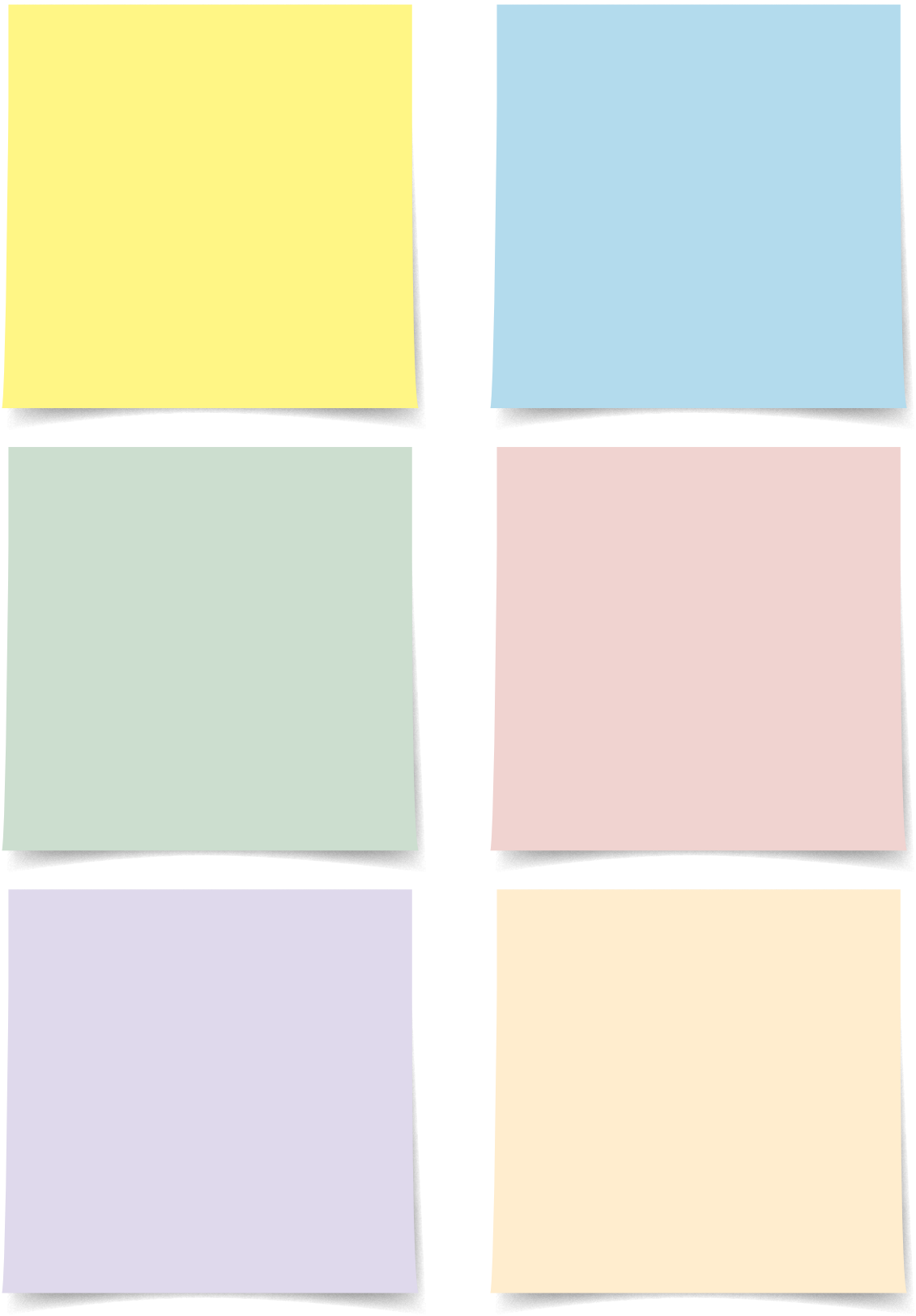
Say: *So, those unanswered questions offer a great opportunity to do further research to find out more information and maybe get your questions answered.*

Say: *Remember when you read nonfiction, it is important to ask questions as you read, jotting down your questions and noting when you find an answer. Nonfiction is all about reading to learn and actively thinking about the text and asking questions when we have them. Great job today all of you!*

Name _____ Date _____

THINK SHEET

Use these note squares to draw or write about things you learned.



LESSON FRAME Ask Questions As You Read

NATIONAL GEOGRAPHIC Explorer

You can use this lesson frame with all Explorer articles and any nonfiction text. When students are curious and asking questions as they read, they are engaging with the text to seek out information and expand understanding.

What You'll Need
- Nonfiction text
- Think Sheet template
- Clipboards and pencils

This frame is a kind of template of the lesson we just worked on. 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.

CONNECT & ENGAGE (5 minutes)

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

Say: *Take a look at these photos! What do you notice about them? Turn to each other and talk.*

Kids turn and talk, and a few share out.

Say: *Let's read the title: _____ Turn and talk about what you think the title means.*

Kids turn and talk about what the title might mean. Some have an idea; others aren't so sure.

Say: *Good thinking! Titles are important. They usually give us a sense of what the article is mostly about. I'm wondering about _____. That's a question I have about the title and the article. Take a minute and preview a few pages and see what you find out.*

Kids preview a few pages and share out.

Say: *Let's read on and find out more.*

MODEL (10 minutes)

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

Say: *This article is nonfiction, which, as you know, includes real, true information.*

Say: *Nonfiction writers write nonfiction to give us information, to teach us something. Nonfiction readers read to learn new information. One of the most important nonfiction reading strategies is to ask questions as you read. Sometimes we have questions when we read. If we stop to talk about our questions and read on to see if we find the answers, it can help us understand what we are reading and learning.*

Say: *I am going to read through a bit of this article and show you my thinking. When I have a question about something, I'm going to write it on a Post-it note.*

Say: *Turn to each other and talk. Have you ever read any nonfiction and had questions about what you were reading?*

Kids turn and talk. A few share out their ideas.

Say: *Okay, let me show you how it works for me.*

Say: *I am going to read through this article and stop when I have a question. Then I'm going to write it down: _____? But I'm going to keep reading to see if there is more information.*

Read on.

Say: *There it is, the answer to my question. It says _____. Now I know the answer, and I'm going to put an "A" on my note, so I know this question was answered. But now I wonder _____. Sometimes answers bring up new questions. I'm going to write that question down, too, and keep reading.*

Say: *When I find the answer, I'm going to mark my note with an A so I know my question is answered in the text. But remember that sometimes questions are answered, and sometimes they are not.*

GUIDE (10 minutes)

Hand out Think Sheets and have kids attach them to their clipboards. Kids remain in a group in front of you.

Say: *What did you see me do as I was reading about _____? Turn and talk about what you noticed me doing.*

Kids talk and share out things such as "I noticed you asked questions as you were reading." " I noticed you write questions on your Post-it." "I noticed you wrote an A for Answer on your Post-it."

Say: *Good thinking. I am going to read on about _____. I'm thinking that this part may bring up some questions, too. What do you think?*

Say: *Now it's your turn. As I read this part, when you have a question, jot it down on a Think Sheet square.*

Read on.

Say: *Wow! Some amazing information here! If you have a question, write it down on your Think Sheet square.*

Say: *Okay, now turn and talk, sharing what you learned and any questions you had.*

Kids turn and talk.

Say: *Who would like to share their new learning and any questions they had?*

Several kids share out.

Say: *Now I'll read on. Remember, if your question is answered in this part, let's stop and talk about it, and then you can underline your question on your Think Sheet square and write an A so you know the text has answered this question.*

Say: *Okay, turn to the person next to you and share questions you had and if they were answered in the text. You might even want to sketch the answer to your question on your Think Sheet square.*

A few kids share out.

COLLABORATE (25 Minutes)

Say: *Now it's time for you to read with a partner. As you read, jot down any questions on your Think Sheet.*

Say: *Remember to ask questions as you read, and jot down any questions you have on your Think Sheet squares. Questioning is the strategy that keeps us reading. Our curiosity drives us to find the answers. If you find the answer to a question, mark your Think Sheet with an A for Answer next to the question. Does this make sense? Any questions? Okay, Happy Reading!*

Partners read, as they practice the strategy. Move around the room, conferring with partners.

SHARE THE LEARNING (10 minutes)

Kids join a sharing circle with you and share out, using respectful language.

Say: *Okay, now it's time to share any questions you had, answers you found, and any new learning. Choose a Think Sheet square with a question you would like to share. I am going to invite [student name] to share. We are going to share using respectful language. So when I ask: "[student name] would you like to share your new learning?" You can say: "Yes, thank you." Then you can share your question, answer, or new learning. After you share, invite someone else to share. To do that, you need to call on the person by name and use the same language we just practiced. When we use polite, respectful sharing language, everyone pays closer attention to the important information being shared.*

Kids share and invite others to share, always using the respectful sharing language that was modeled. There should be time for about 3 or 4 kids to share out with the whole group. Once they are finished, have everyone turn and share with the person next to them, so that all have a chance to be heard.

Say: *We learned so much today about _____. Who has an idea of why _____ is the title of the article? What do you still wonder about in this article? Turn and talk about that. We had lots of questions answered about _____. Can you believe all the new information that we learned? My favorite thing was_____. What was your favorite thing?*

But some of you had questions you didn't get answered—right? Those unanswered questions offer a great opportunity to do further research to find out more and maybe get your questions answered.

So remember when you read nonfiction, it is important to ask questions as you read, jotting down your questions and noting when you find an answer. Nonfiction is all about reading to learn and actively thinking about the text and asking questions when we have them. Great Job today all of you!

Why Birds Matter

SCIENCE

Standards Supported

- **NGSS LS4.D: Biodiversity and Humans:** There are many different kinds of living things in an area, and they exist in different places on land and in water. (2-LS4-1)
- **NGSS LS4.D: Biodiversity and Humans:** Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)

Resources

- Content Assessment Master (page 10)
- Article Test (page 17)

Science Background

Birds are warm-blooded vertebrates with wings, feathers, and a beak. They are found all over the world in every kind of habitat .

Birds' bodies are adapted for flight. Their wings are shaped to create lift. Their bones are hollow so their bodies are light. Their flight muscles are strong. Even their tail feathers help them steer.

The size and shape of a bird's wings affect how it moves. Some birds fly great distances. Others can hover, swim, or dive. Penguins are one of the few birds that have lost their ability to fly.

Birds are the only animals with feathers. Feathers are lightweight and durable. If a feather is broken, it cannot be repaired. The bird must grow a new one instead.

A bird's beak is also know as a bill. The main job of a beak is to gather or capture food. But birds also use their beaks to pick up things, build nests, for defense, to drink, feed their young, and even clean their feathers.

ENGAGE

Encourage students to flip through the article and turn and talk with a partner to discuss what they see. Invite students to ask questions or share what they already know about birds.

EXPLORE

Display pages 2-3 of the projectable magazine. Point out that all of the birds in this photo are Australian finches. As a class, compare and contrast the birds. Encourage students to brainstorm ideas about how other types of birds would look different.

EXPLAIN

After reading, point out to students that there are many different kinds of animals. And even among animals of the same type, like birds, there can be huge differences. **Ask:** *How do you know all of the animals in this article are birds?* (They have wings, feathers, and a beak.) *What are some ways the birds you read about are different from each other?* (Students may note differences in size, shape, color, habitat, etc.) Have students turn and talk as they review the article to learn more about the diversity among birds. Then remind students that humans are changing the places birds live. Have students discuss reasons why people should protect birds. Brainstorm ideas about how this could be done.

ELABORATE

Point out the metal leg bands that can be seen on many of the birds in the article's photos. Tell students that people put these leg bands on birds so they can understand how the birds move, behave, and survive. Brainstorm ideas about how studying birds like this can help people keep birds safe.

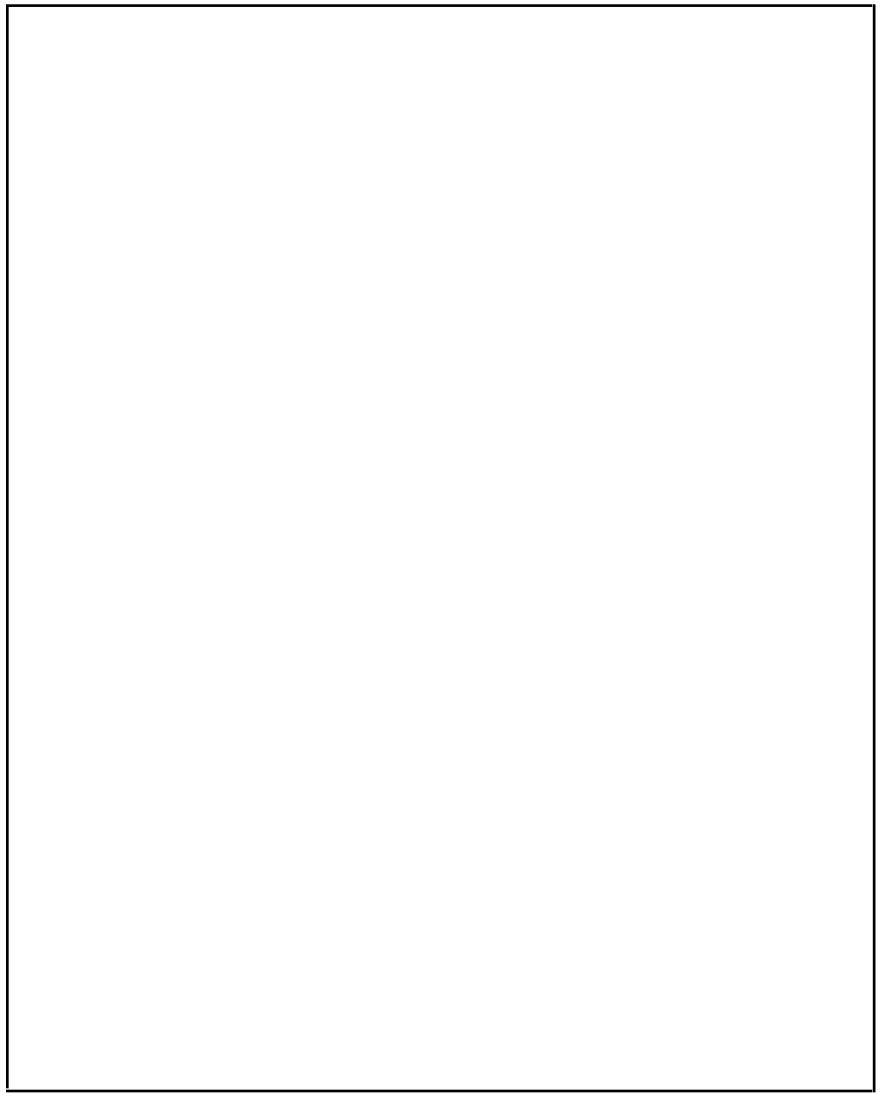
EVALUATE

Have students complete the **Content Assessment** for this lesson. Encourage them to share and compare their results in small groups.

Name _____ Date _____

CONTENT ASSESSMENT: Why Birds Matter

Draw and color one bird from the article. Identify the bird. Describe its wings, feathers, and beak. Explain why you think this bird matters.



Identify: _____

Describe: _____

_____

_____

_____

_____

_____

_____

Explain: _____

_____

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_____

_____

_____

Out of Eden

SOCIAL STUDIES

Standards Supported

- **C3: Human-Environment Interaction: Place, Regions, and Culture:** Explain how weather, climate, and other environmental characteristics affect people's lives in a place or region. (D2.Geo.4.K-2)
- **C3: Human-Environment Interaction: Place, Regions, and Culture:** Explain how culture influences the way people modify and adapt to their environments. (D2.Geo.4.3-5)

Resources

- Content Assessment Master (page 12)
- Article Test (page 18)

Social Studies Background

In January 2013, Pulitzer Prize-winning journalist and National Geographic Fellow Paul Salopek began what could be one of the longest and slowest journalistic assignments of all time. He is on a quest to retrace the footsteps of our ancient ancestors.

Salopek's trek is a 33,796-kilometer journey that began in Ethiopia and will eventually end at the tip of South America. At this point, he has finished climbing the snow-covered ridges of Central Asia and is making his way through the maze of river-fed plains that covers South Asia.

Throughout his journey, Salopek is capturing the stories of people he meets along the way. By sharing what he learns with others, he hopes to deepen people's understanding of global stories. He also hopes to help people realize that more meaning—rather than more information—is the key to understanding our increasingly complicated world.

ENGAGE

Encourage students to flip through the article and turn and talk with a partner to discuss what they see. Invite students to ask questions or share what they already know about how people have adapted to live in different types of environments.

EXPLORE

Display and review pages 10-11 of the projectable magazine. Read aloud the deck. Brainstorm ideas about where Paul Salopek is going, why he is walking, and what kinds of adventures he might encounter along the way.

EXPLAIN

After reading, display the map on page 13 of the projectable magazine. Point out that it took Paul Salopek five years to travel from Ethiopia to Pakistan. He could have traveled much quicker if he had taken a boat across the Arabian Sea. **Ask:** *Why did he take such a long route?* (He was following the routes of the first humans who migrated out of Africa.) Have students turn and talk as they match each of Salopek's journal entries with a location on the map. Have them describe the people he met in each place and discuss how the content of each entry reflects a way that the environment has affected how people live in each place.

ELABORATE

Divide the class into small groups. Have groups visit National Geographic's site about Paul Salopek's Out of Eden Walk *https://www.nationalgeographic.org/projects/out-of-eden-walk/*. Encourage students to take notes on other people and places Salopek encountered along the way. Invite them to share what they learned with the class.

EVALUATE

Have students complete the **Content Assessment** for this lesson. Encourage them to share and compare their results in small groups.

Name _____ Date _____

CONTENT ASSESSMENT: Out of Eden

Imagine that Paul Salopek walked to where you live. Draw a picture of someone or something important he would see.

Answer each question with a complete sentence.

1. Who or what did you draw? _____

2. Why is it important? _____

3. What could Paul Salopek learn if he visited the area where you live? _____

Animal Migration

SCIENCE

Standards Supported

- **NGSS Crosscutting Concepts: Cause and Effect:** Events have causes that generate observable patterns. (2-LS2-2)
- **NGSS LS2.C: Ecosystem Dynamics, Functioning, and Resilience:** When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (secondary to 3-LS4-4)

Resources

- Content Assessment Master (page 14)
- Article Test (page 19)

Science Background

Migration is the regular movement of an animal population from one area to another. Migration is usually seasonal, and animals that migrate typically follow a well-defined route.

Many different types of animals—including birds, fish, mammals, insects, and reptiles—migrate. Typically animals do this to find food, better seasonal living conditions, or to breed.

Migrations vary in length. Many freshwater fish, for example, just move up and down in a pond as temperature and oxygen levels change with the seasons. Other migrations are long. The Arctic tern has one of the longest. This bird migrates back and forth from its summer breeding grounds in the Arctic to its winter home in Antarctica. That's about 70,800 kilometers a year.

Changes in day length, temperature, or even moon phases, can prompt animals to migrate. Animals may rely on instinct, memories, or their senses to get where they want to go.

ENGAGE

Encourage students to flip through the article and turn and talk with a partner to discuss what they see. Invite students to ask questions or share what they already know about animal migration.

EXPLORE

Display pages 16-17 of the projectable magazine. **Ask:** *How are all of these photos alike?* (Each one shows a group of animals.) Read the headline and text. As a class, brainstorm ideas about where the animals are going, why, and how they know how to get there.

EXPLAIN

After reading, review the definition of "migration" with the class. **Ask:** *Why do animals migrate from one place to another?* (to search for food or a place to have babies) *When do Caribbean spiny lobsters migrate?* (fall) *How do they know when to go and how to get there?* (They leave when the water gets colder. They are guided by Earth's magnetic field.) Have students turn and talk as they review the article for more details about animal migrations. Brainstorm ideas about why animals migrate in groups. Then challenge students to summarize how the other animals featured in the article know where and when to migrate and how to get there.

ELABORATE

Divide the class into small groups. Instruct groups to conduct research to identify an animal, other than those featured in the article, that migrates. Challenge them to explain where and when the animal migrates and how it knows how to get to its destination.

EVALUATE

Have students complete the **Content Assessment** for this lesson. Encourage them to share and compare their results in small groups.

Name _____ Date _____

CONTENT ASSESSMENT: Animal Migration

Make a checkmark to show if you think each sentence is true or false.
If a statement is false, use information from the article to explain why.

Sentence	True	False	Explanation
1. Earth's magnetic pull helps Caribbean spiny lobsters migrate to cooler waters.			
2. Red-sided garter snakes migrate in the winter.			
3. Both Dall sheep and whooping cranes teach their young how to migrate.			
4. Red crabs migrate to find a place to lay their eggs.			
5. Adelie penguins always follow the sun when they migrate.			

Rome Posters

SOCIAL STUDIES

Standards Supported

- **C3: History: Change, Continuity, and Context:** Compare life in the past to life today. (D2.His.2.K-2)
- **C3: History: Change, Continuity, and Context:** Compare life in specific historical time periods to life today. (D2.His.2.3-5)

Resources

- Roman Empire poster (Teacher's edition)
- Rome Then and Now poster (Teacher's edition)
- Content Assessment Master (page 16)
- Article Test (page 20)

Social Studies Background

Making comparisons is the first step toward understanding how a place has changed over time. To fully appreciate these changes, students must be able to evaluate them from different perspectives: political, economic, social, cultural, etc. This process takes time to develop. Recognizing that, each month *Explorer* magazine will introduce students to a different ancient civilization. Use the accompanying lessons to guide students as they develop these skills.

ENGAGE

Encourage students to examine the maps and turn and talk with a partner to discuss what they see. Invite students to ask questions or share what they already know about Rome.

EXPLORE

Display the **Roman Empire poster**. **Ask:** *Where is Rome?* (Italy) *Is it a city or a country?* (city) As a class, brainstorm ideas about how one city could become powerful enough to rule such a large area.

EXPLAIN

Display the **Roman Empire poster**. Draw students' attention to the small map in the top right corner of the poster. Point out that the Roman Empire contained parts of three continents. **Ask:** *Which continents were they?* (Europe, Asia, Africa) Have students turn and talk as they review the timeline for details about the rise and fall of the Roman Empire. Challenge them to identifies countries today that would be part of the Roman Empire if it still existed. Then display the **Rome Then and Now poster**. Review the information as a class. Challenge students to identify similarities and differences between ancient Roman culture and Roman culture today.

ELABORATE

Remind students that after ancient Romans discovered how to make concrete from volcanic ash they could build stable, flexible buildings with rounded arches and domes. Divide the class into small groups. Encourage groups to conduct research to find examples of buildings with these features around the world. Discuss how ancient Roman ideas still influence architecture today.

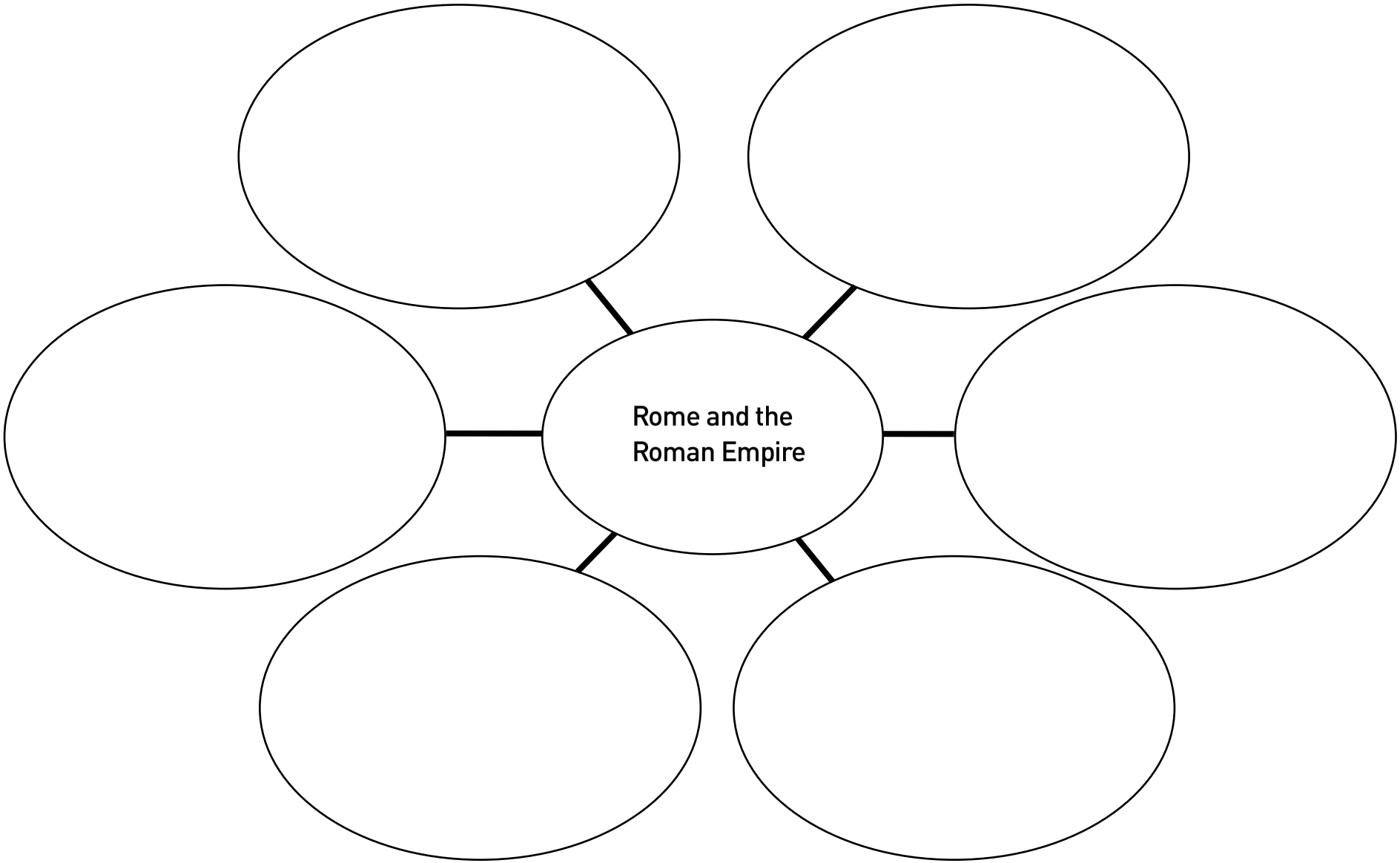
EVALUATE

Have students complete the **Content Assessment** for this lesson. Encourage them to share and compare their results in small groups.

Name _____ Date _____

CONTENT ASSESSMENT: Rome Posters

Write or draw the most interesting things you learned about Rome and the Roman Empire.



Name _____ Date _____

ARTICLE TEST: Why Birds Matter

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

1. What body parts do all birds have?

   Ⓐ arms, legs, and feet

   Ⓑ wings, feathers, and a beak

   Ⓒ fins, flippers, and a tail

2. What do American flamingos and purple herons have in common?

   Ⓐ long necks

   Ⓑ pink feathers

   Ⓒ short beaks

3. What do bright colors help some birds do?

   Ⓐ attract mates

   Ⓑ attract predators

   Ⓒ attract prey

4. How many kinds of birds are there?

   Ⓐ about 1,000

   Ⓑ about 10,000

   Ⓒ about 100,000

5. What are three reasons that birds are important?

_____

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Name _____ Date _____

ARTICLE TEST: Out of Eden

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

1. Where did Paul Salopek begin his long walk?
   - Ⓐ Africa
   - Ⓑ Asia
   - Ⓒ North America

2. Why did he start his walk there?
   - Ⓐ It was easy to get to.
   - Ⓑ Humans first migrated out of there.
   - Ⓒ The weather was good there when he left.

3. Why do many people in Ethiopia wear the same kind of sandals?
   - Ⓐ The sandals are cheap.
   - Ⓑ The sandals are comfortable.
   - Ⓒ The sandals are made of leather.

4. What did Salopek learn to do in Saudi Arabia?
   - Ⓐ make water
   - Ⓑ find water
   - Ⓒ keep water cool

5. Which animal helped Salopek in Turkey? How could it help farmers he met in Pakistan?

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Name _____ Date _____

ARTICLE TEST: Animal Migration

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

1. What do all animals do when they migrate?
   - Ⓐ move from one place to another
   - Ⓑ sleep or rest during the winter
   - Ⓒ follow the sun

2. Which guides a red-sided garter snake when it hibernates?
   - Ⓐ sight
   - Ⓑ smell
   - Ⓒ magnets

3. Which animal migrates up and down a mountain?
   - Ⓐ red crab
   - Ⓑ whooping crane
   - Ⓒ Dall sheep

4. Why do red crabs migrate?
   - Ⓐ to find food on lower ground
   - Ⓑ to lay their eggs in the ocean
   - Ⓒ to find ice-free land to build nests

5. How do Dall sheep know where to go when they migrate?

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Name _____ Date _____

POSTER TEST: Rome Posters

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

1. Where is Rome?
   - Ⓐ Italy
   - Ⓑ France
   - Ⓒ Spain

2. Who was the Roman Empire's first emperor?
   - Ⓐ Julius Caesar
   - Ⓑ Augustus
   - Ⓒ Constantine

3. Which of these is a famous Roman building?
   - Ⓐ the Colosseum
   - Ⓑ the Appian Way
   - Ⓒ Milan

4. What is a toga?
   - Ⓐ a kind of food
   - Ⓑ a kind of clothing
   - Ⓒ a kind of architecture

5. Identify two things that were different in ancient Rome than they are in Rome today.

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Pioneer and Trailblazer

ANSWER KEY

Why Birds Matter

Assess Content, page 10

Students should select one bird featured in the article. They should provide accurate descriptions of the bird's wings, feathers, and beak along with an insightful answer as to why they think this bird matters.

Article Test, page 17

1. B; 2. A; 3. A; 4: B; 5: Possible response: Birds are important because people eat some birds, some birds eat insects and rodents, and many birds spread seeds.

Out of Eden

Assess Content, page 12

Answers will vary but should pertain to the area where you live.

Article Test, page 18

1. A; 2. B; 3. A; 4: C; 5: A mule helped him carry his supplies. It could help the farmers carry their hay.

Animal Migration

Assess Content, page 14

1. False: Earth's magnetic pull helps Caribbean spiny lobsters migrate to warmer waters.
2. False: Red-sided garter snakes migrate in spring.
3. True: Both of these animals teach their young how, where, and when to migrate.
4. True: The crabs migrate to the ocean, where they lay their eggs.
5. False: During winter, the sun can be hard to find so the penguins follow the ice. They migrate so they can live at the edge of the ice near the ocean.

Article Test, page 19

1. A; 2. B; 3. C; 4: B; 5: Scientists think the oldest sheep teaches the younger ones.

Rome Posters

Assess Content, page 16

Students may write or draw. Their answers should reflect content presented on the posters.

Poster Test, page 20

1. A; 2. B; 3. A; 4: B; 5: Answers will vary, but student may note differences in architecture, food, clothing, types of sporting events, government, or even how much area falls under Roman rule.