



Explorer

Birds 2



My Long Walk 10 Animal Migration 16

TEACHER'S GUIDE Pathfinder and Adventurer Vol. 18 No. 2

IN THIS GUIDE:

About the Learning Framework 2

Language Arts
Lesson and BLMs 3-8

Why Birds Matter
Science Lesson and BLM 9-10

Out of Eden
Social Studies Lesson and BLM.. 11-12

Animal Migration
Science Lesson and BLM 13-14

Rome Posters
Social Studies Lesson and BLM.. 15-16

Article and Poster Tests..... 17-20

Answer Key 21

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

Pathfinder

Why Birds Matter	730
Out of Eden	700
Animal Migration.....	750

Adventurer

Why Birds Matter	850
Out of Eden	830
Animal Migration.....	880

Standards Supported

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



Looking for a fun way to test your student's recall? Each story in this issue of Explorer has an accompanying Kahoot! quiz.

For additional resources to extend your students' learning, visit EXPLORER's website:

NATGEO.ORG/EXPLORERMAG-RESOURCES

INTRODUCTION

BACKGROUND

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

PURPOSE

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

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

IMPLEMENTATION

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

MINDSET OF AN EXPLORER

KEY FOCUS AREAS



Attitudes

National Geographic kids are:

CURIOS 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.



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.



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.

Fourth Grade Standard Supported

• **CCSS Reading Informational Text:** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. (4-1)

Fifth Grade Standard Supported

• **CCSS Reading Informational Text:** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-1)

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 of the magazine.

TEACHER TIP: The reason kids are bunched up on the floor is that the focus needs to be on the teacher. 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.

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 and discover answers. 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.

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.

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 down

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 skim the first paragraph.

Say: Before I even start reading the first paragraph, I see that the word migration is in bold type. I have a question about that. I’m going to write it down: What is migration? Now I’m going to start reading to see if there is some information about that.

Read the first paragraph.

Say: *There it is—the answer to my question. It says that a migration is an annual journey. Now I’m going to write the answer next to my question. But now I wonder why they migrate, or make this annual journey. Sometimes answers bring up new questions. I’m going to write that question down, too, and keep reading. Oh, and here’s the answer a little further down—they search for food or for places to breed.*

What is migration?
Migration is an annual journey.

Why do animals migrate?
They search for food and places to breed.

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 write the answer in the Answer column on your Think Sheet.*

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.*

A few kids share out.

Write the answer next to the question.

Say: *I’m going to write this answer next to my question. 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 down your questions.” “I noticed you wrote the answers to your questions.”

Say: *Good thinking. I am going to read on about the spiny lobster. I’m thinking that this part called “Marine March” 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 your Think Sheet.*

Read the first paragraph of “Marine March.”

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

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

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 red-sided garter snakes on page 19, Dall sheep in “Moving Up in the World on page 21,” red crabs in “Searching for the Sea on page 21,” Adelie penguins in “Over the Ice on page 22,” or whooping cranes in “The Great Glide on page 22.” As you read, jot down any questions you have on your Think Sheet.*

Say: *Remember, as you read, to ask questions and discover answers. Jot down any questions you have and any answers you find on your Think Sheet. If you finish the section you chose, feel free to read another section and practice the strategy with that section, too. Does this make sense? Any questions? Okay, Happy Reading!*

Partners read their chosen section, as they practice the ask questions and discover answers 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 question and answer from your Think Sheet that 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?*

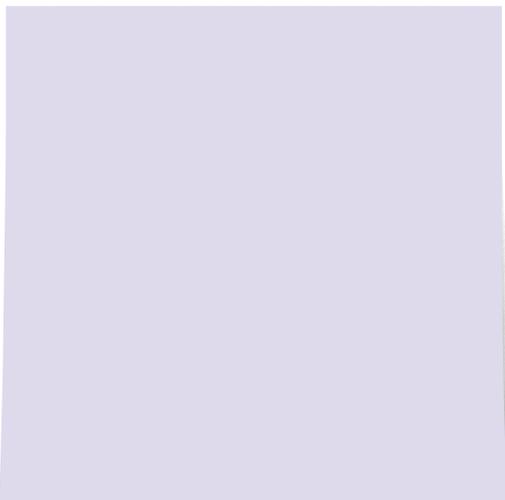
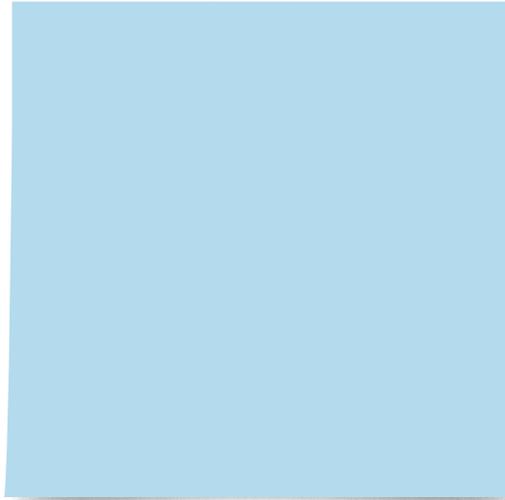
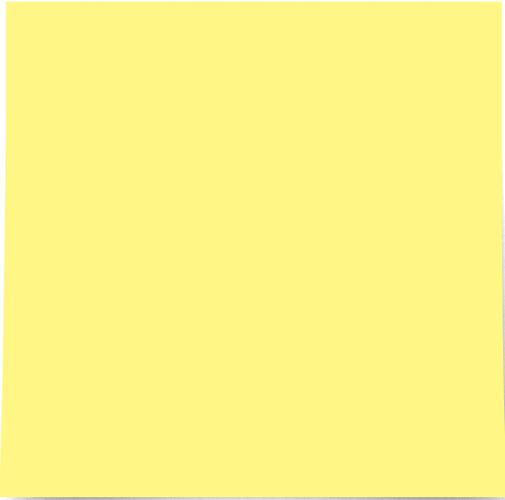
Some kids may nod.

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 and discover answers, jotting down your questions and noting when you find an answer. Nonfiction is all about reading to learn and actively thinking about the text, asking questions when we have them, and discovering answers to some of the questions we have. Great job today all of you!*

THINK SHEET

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



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 and discover answers. 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 down.

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. 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'm going to write the answer next to my question. But now I wonder _____. Sometimes answers bring up new questions. I'm going to write that question down, too, and keep reading. When I find the answer, I'm going to write it next to my question. 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 down your questions.” “I noticed you wrote the answers to your questions”

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.*

Read on.

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

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 write the answer in the Answer column on your Think Sheet.*

Say: *Okay, turn to the person next to you and share questions you had and if they were answered in the text.*

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.*

Remember, as you read, to ask questions and discover answers. Jot down any questions you and any questions you find on your Think Sheet. 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 question and answer from your Think Sheet that 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, 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 _____. Who has an idea of why _____ is the title of the article? What do you still wonder about the information in this article? Turn and talk about that.*

Several kids share out.

Say: *We had lots of questions answered about _____. Can you believe all the new information that we learned? My favorite thing was _____. How about you? What was your favorite thing?*

Say: *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.*

Say: *Remember when you read nonfiction, it is important to ask questions and discover answers, 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, and discovering answers to some of the questions we have.*

SCIENCE

Standards Supported

- **NGSS LS1.A: Structure and Function:** Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)
- **NGSS Crosscutting Concepts: Systems and System Models:** A system can be described in terms of its components and their interactions. (5-LS2-1)

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. Encourage students to compare and contrast the birds they see. Brainstorm ideas about how other types of birds would look different.

EXPLAIN

After reading, remind students that all animals have special structures that help them survive where they live. **Ask:** *What special parts do all birds have?* (wings, feathers, a beak) Brainstorm ideas about how these parts help birds survive. (Possible responses: Wings and feathers can help birds fly; Beaks help them get food.) Have students turn and talk as they review the article in pairs. Encourage partners to identify the special structures of different types of birds. Then have them discuss how these structures help the birds survive in unique ways.

ELABORATE

Point out the metal leg bands that can be seen on many of the birds in the article's photos. Inform 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 in these ways can help people keep birds safe. Discuss reasons why the leg bands prove that birds really do matter to people.

EVALUATE

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



Click here for the Kahoot! quiz:

<https://play.kahoot.it/#/k/>

9ff9f68c-5395-4bad-89b2-fd71bd7624d9

Name _____

Date _____

CONTENT ASSESSMENT: Why Birds Matter

Name and draw five birds in the article. Identify each birds' special parts. Explain how the parts help the bird survive.

Name	Draw	Identify	Explain

Standards Supported

- **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. Point out that the deck describes Paul Salopek's journey as a "really long" walk? **Ask:** *Based on the rest of the information in the deck, do you think this is an appropriate description? Why or why not?* Invite students to share their ideas.

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 those people have modified and adapted to survive in their environments.

ELABORATE

Divide the class into pairs. Have pairs conduct research on National Geographic sites to learn more about Paul Salopek's Out of Eden Walk. Instruct them to take notes on other people and places Salopek has encountered and 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.



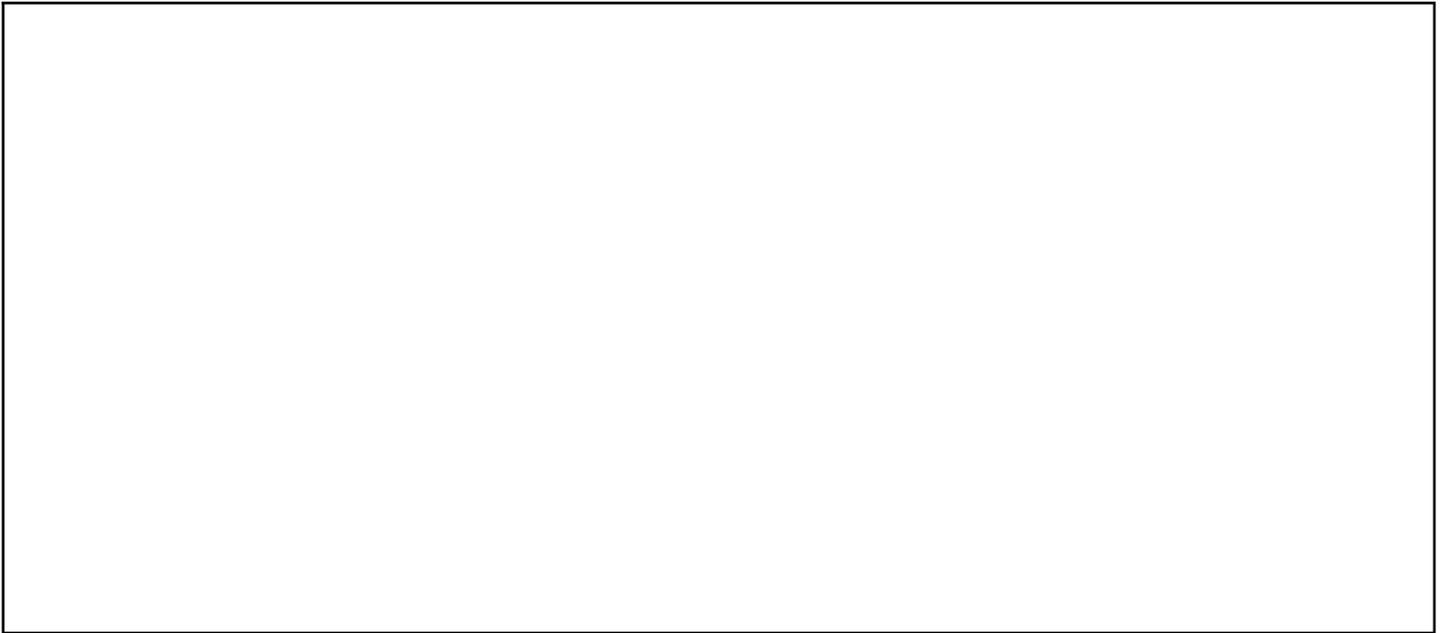
Click here for the Kahoot! quiz:

[https://play.kahoot.it/#/k/](https://play.kahoot.it/#/k/f392227a-1989-43b6-bcde-c823670cd0c6)

[f392227a-1989-43b6-bcde-c823670cd0c6](https://play.kahoot.it/#/k/f392227a-1989-43b6-bcde-c823670cd0c6)

CONTENT ASSESSMENT: Out of Eden

Conduct research to learn more about Paul Salopek's Out of Eden Walk. Pick one place he has visited that isn't in the article. Draw a picture that shows what he learned in this place.



Write a journal entry from Paul Salopek's perspective that tells about this part of his trip.

Animal Migration

SCIENCE

Standards Supported

- **NGSS LS1.D: Information Processing:** Different sense receptors are specialized for particular kinds of information, which may then be processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions. (4-LS1-2)
- **NGSS Connections to the Nature of Science: Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena:** Science explanations describe the mechanisms for natural events. (5-LS2-1)

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.



Click here for the Kahoot! quiz:

[https://play.kahoot.it/#/k/](https://play.kahoot.it/#/k/e8e981fc-2f8a-48cc-a06d-3e2e671963f7)

[e8e981fc-2f8a-48cc-a06d-3e2e671963f7](https://play.kahoot.it/#/k/e8e981fc-2f8a-48cc-a06d-3e2e671963f7)

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 is an example of animal migration.) Brainstorm ideas about how the animals know where and when to migrate and 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 breed) *What prompts Caribbean spiny lobsters to begin migrating?* (changing seasons) *Why?* (When seasons change, so do temperatures. When temperatures fall, the lobsters migrate to warmer, deeper waters where food is more plentiful.) Have students turn and talk as they review the article for details that explain how lobsters know where to go. (They know the underwater landscape. They are also guided by Earth's magnetic field.) Challenge them to summarize how other animals featured in the article know where and when to migrate and how to get there.

ELABORATE

Divide the class into pairs. Instruct partners 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.

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. Caribbean spiny lobsters use their sense of smell to migrate to cooler waters.			
2. Red-sided garter snakes migrate to different dens each winter.			
3. Dall sheep teach their young how, when, and where to migrate.			
4. One of the best times to see red crabs migrate on Christmas Island is during the last quarter of the moon in October.			
5. Adelie penguins always follow the sun when they migrate.			
6. Because whooping cranes nearly became extinct, they can only migrate now if people help them.			

SOCIAL STUDIES

Standards Supported

- **C3: History: Change, Continuity, and Context:** Generate questions about individuals and groups who have shaped significant historical changes and continuities. (D2.His.3.3-5)

Resources

- Ancient Rome poster (Teacher's edition)
- Life in the Roman Empire poster (Teacher's edition)
- Content Assessment Master (page 16)
- Poster Test (page 20)

Social Studies Background

Asking questions is the first step in acquiring historical knowledge. But to fully understand history, students must know which questions to ask, how to evaluate the answers, and how to use those answers to create accurate arguments about the past. Historical thinking is a process that 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 ancient Rome.

EXPLORE

Display the **Ancient Rome 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 parts of three continents.

EXPLAIN

Invite students to examine the **Ancient Greece poster**. **Ask:** *How did the Romans take advantage of geography to protect their empire? (The empire was bordered by natural defensive barriers including mountains, oceans, and seas.) What sparked the beginning of the Roman Empire? (Julius Caesar's assassination)* Have students turn and talk as they discuss the how the Roman Empire grew over time. Encourage them to compare and contrast three of Rome's charismatic leaders. Then display the **Life in the Roman Empire poster**. Have students review the poster to learn more about life in the Roman Empire. Challenge them to identify and describe various ways ancient Romans made lasting contributions to the world.

ELABORATE

Remind students that ancient Romans were master builders. Their projects included roads, aqueducts, and sewer systems. Brainstorm ideas about how these projects helped hold the Roman Empire together. Then have students conduct research to learn about other public works projects in ancient Rome. Discuss how these projects affected people living in the Roman Empire.

EVALUATE

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

CONTENT ASSESSMENT: Rome Posters

Explain how ancient Rome was different before and after Julius Caesar.

Before	After

Put these events in ancient Roman history in the correct order.

- _____ The Roman empire falls.
- _____ Constantine grants all people religious freedom.
- _____ The Colosseum is completed.
- _____ Julius Caesar is murdered.
- _____ Rome begins a period of peace called *Pax Romana*.

What do you think was the Roman Empire's greatest influence on the Western world today? Explain.

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. How do you know an animal is a bird?
Ⓐ It has wings.
Ⓑ It has feathers.
Ⓒ It has a beak.

2. What kind of bird beak helps birds slice open fruit?
Ⓐ a tiny, pointed beak
Ⓑ a scoop-shaped beak
Ⓒ a razor-sharp beak

3. Why do some birds have brightly colored feathers?
Ⓐ to attract mates
Ⓑ to attract predators
Ⓒ to attract prey

4. How many bird species are there?
Ⓐ about 1,000
Ⓑ about 10,000
Ⓒ about 100,000

5. What are three reasons that people consider birds to be valuable?

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 the first humans migrate from?
 Ⓐ Africa
 Ⓑ Asia
 Ⓒ North America
2. When did the first humans begin to migrate around the world?
 Ⓐ around 10,000 years ago
 Ⓑ around 6,000 years ago
 Ⓒ around 60,000 years ago
3. What did Paul Salopek learn about evaporation in Saudi Arabia?
 Ⓐ It can create water.
 Ⓑ It can be used to keep water cool.
 Ⓒ It can make water easier to carry.
4. Where did Salopek meet farmers living in mountain villages?
 Ⓐ Umlajj, Saudi Arabia
 Ⓑ near Siverek, Turkey
 Ⓒ near Khurramabad, Pakistan
5. What do you think is the most important thing Salopek has learned so far on his trip?

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. How might Earth's magnetic field help lobsters during their migration?
Ⓐ It might tell them when to go.
Ⓑ It might tell them where to go to.
Ⓒ It might help them find their way.

2. Which sense guides red-sided garter snakes when they migrate?
Ⓐ sight
Ⓑ touch
Ⓒ smell

3. What kind of migration do Dall sheep have?
Ⓐ horizontal
Ⓑ vertical
Ⓒ circular

4. Which of these animals migrates to find a place it can breed?
Ⓐ Caribbean spiny lobster
Ⓑ Dall sheep
Ⓒ red crabs

5. How, where, and why do Adelie penguins migrate in the summer? What about in winter?

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. Who was the first Roman emperor?
Ⓐ Constantine
Ⓑ Augustus
Ⓒ Julius Caesar

2. What were soldiers in the Roman Empire called?
Ⓐ gladiators
Ⓑ senators
Ⓒ legionnaires

3. At its height, the Roman Empire included parts of which continents?
Ⓐ Asia, Africa, Australia
Ⓑ Europe, North America, Asia
Ⓒ Europe, Asia, Africa

4. What did Horace, Ovid, Livy, and Virgil have in common?
Ⓐ They were great Roman writers.
Ⓑ They were Roman gods.
Ⓒ They designed the Colosseum.

5. How did Roman builders provide for the people and help maintain the Roman Empire?

Pathfinder and Adventurer

ANSWER KEY

Why Birds Matter

Assess Content, page 10

Answers will vary depending on which birds students select. However, students should identify and draw five birds, identify special parts of each, and explain how those parts help each bird survive.

Article Test, page 17

1. B; 2. C; 3. A; 4. B; 5: Possible response: People consider birds valuable because they can eat birds, some birds eat insects and rodents, and many birds pollinate plants and spread seeds.

Out of Eden

Assess Content, page 12

Answers will vary depending on which location students select. Journal entries should focus on people, places, or things and lessons learned.

Article Test, page 18

1. A; 2. C; 3. B; 4: C; 5: Answers will vary.

Animal Migration

Assess Content, page 14

1. False: Caribbean spiny lobsters are guided by Earth's magnetic field and they migrate to warmer waters.
2. False: Red-sided garter snakes migrate to the same den each winter.
3. True: Dall sheep pass knowledge of their mountain path from generation to generation.
4. True: The crabs migrate during the wet season, which begins in October. They go during the last quarter of the moon at the turn of high tide so most of the female's eggs will reach deep water.
5. False: During winter, the sun doesn't rise south of the Antarctic Circle, so the penguins chase the ice.
6. False: People only showed whooping cranes how to migrate once. After that, the birds were able to return on their own.

Article Test, page 19

1. C; 2. C; 3. B; 4: C; 5: In summer Adelie penguins follow the sun to coastal beaches where they can build nests. In winter, they move to live at the edge of the ice so they have access to open water.

Rome Posters

Assess Content, page 16

Before: Possible responses: Rome was a republic. Leaders, such as senators, were elected officials. Rome had a complex government with written laws, a constitution, and a balance of powers. There was not professional army. Romans didn't rule over such a vast territory.

After: Possible Responses: The Roman Empire began. It was ruled by an emperor. The army was transformed into a full-time, professional fighting force. Those soldiers conquered many lands, creating a strong, vast empire. Rome became the economics, political, and cultural capital of the entire Western world.

Sequence: 5, 4, 3, 1, 2

Explain: Answers will vary.

Poster Test, page 20

1. B; 2. C; 3. C; 4: A; 5: Possible response: Roman builders built temples, roads, aqueducts, public baths, sewer systems, and other public works that people used. Their network of roads helped move the army and made it easier to communicate and trade goods.