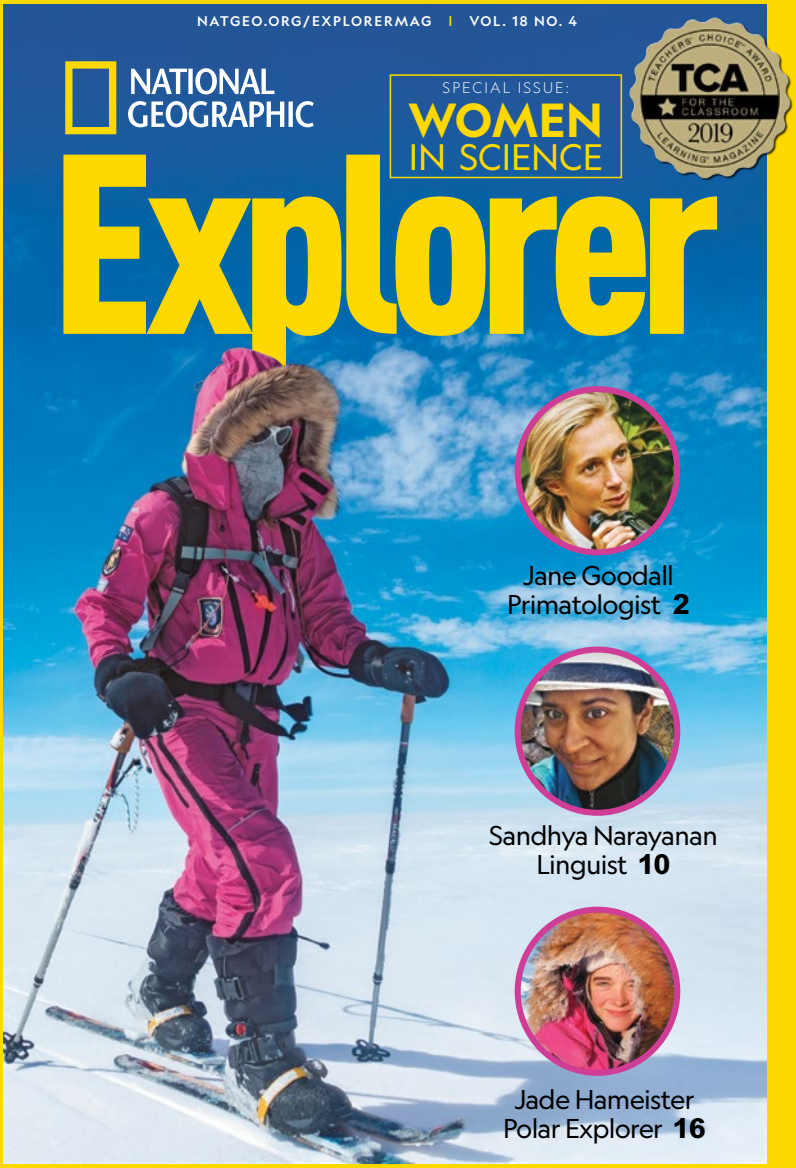

TEACHER'S GUIDE
Pathfinder and Adventurer
Vol. 18 No. 4

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

Pathfinder
Becoming Jane 830
Weaving Words..... 700
Frozen... South Pole: The Final Challenge..... 780

Adventurer
Becoming Jane 880
Weaving Words..... 820
Frozen... South Pole: The Final Challenge..... 860

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

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.

Fourth Grade Standard Supported

• **CCSS Reading Informational Text:** Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area. (4–4)

Fifth Grade Standard Supported

• **CCSS Reading Informational Text:** Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area. (5–4)

What You'll Need

- "Becoming Jane" (*Explorer*, pages 3–9)
- 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.

Say: *Does anyone know what it means to infer? Turn and talk about what you think it means to infer.*

Kids turn and talk. Some may have an idea about inferring; Others may not.

Say: *We infer when we try to figure out something we don't know for sure. One way we infer while reading is when we come across an unfamiliar word. There is a kind of equation you can use to help you infer the meaning of an unfamiliar word or phrase. You can think about what you already know—that's your background knowledge—and merge it with clues in the text to infer the meaning. A simple way to remember that equation is BK + TC = I (Background Knowledge + Text Clues = Inference).*

Say: *Another thing about inferring is that you have to think about whether or not your inference makes sense. If it doesn't, you can look for more clues or more information. By using the clues in the text and merging that with what you already know, you become someone who infers instead of guesses.*

MODEL (10 minutes)

Kids are in a group on the floor in front of you.

Say: *Today I'm going to model how I infer the meaning of an unfamiliar word by using clues in the text, or context clues.*

Have kids turn to page 3, the first page of the article "Becoming Jane."

Say: *As I read, I'm going to use a chart with four columns. I'll write any unfamiliar words I come across in the first column. In the second column, I'll write what I infer the word means.*

Say: *In the third column, I'll write the clues I used to help me infer the meaning. In the fourth column, when I have a good idea of what the word means, I'll write a short sentence that includes the word.*

Say: *Okay, now I'm ready to read and show you how I do this.*

Begin reading page 3.

Say: *On this page it says that Jane was an "untested" scientist. I'm not exactly sure what that means, so I'm going to look for some clues that might help me, but first I'll write down the word* untested *in the first column of my chart. Then I'm going to look for clues. As I read on, I do find some clues. I read that Jane was a young scientist who wanted to learn about chimpanzees, but she had no training or background in research. I'm going to use my background knowledge, which is that I know if you are tested on something, you can show what you know. I also know that* un *is a prefix that means* not. *I can merge that with the clues I got from the text and infer that* untested *means that Jane was new to this; she didn't know a lot about how to study or research chimpanzees. As a scientist, she hadn't been tested or proven yet. Jane did not have any experience in this field of science. I'm going to write that in the second column of my chart as my inference. In the third column, I'll write the clues I used. In the fourth column, I'll write this sentence: I hope my untested idea will prove to be a good one.*

Say: *Can you see how the context clues and my background knowledge helped me infer what* untested *means? Turn and talk about that.*

Kids turn and talk.

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: *You each have your own four-column chart on your Think Sheet. Now let's try this together. I'm going to keep reading. Let's look at page 4.*

> **TEACHER TIP:** There are different words, phrases, and ideas you might want to use for guiding students in this process. The word *fieldwork* appears in both Pathfinder (Grade 4) and Adventurer (Grade 5–6) Explorer magazines, so that's a good word to use for guiding students. Another reason *fieldwork* is a good choice is because the idea of fieldwork for Jane ended up being different from traditional fieldwork, since Jane, the "untested" scientist, eventually made up her own rules.

Read page 4 and stop when you get to the word *fieldwork.*

Say: *Hmmm, this idea of fieldwork is interesting. Turn to a partner and talk about what you infer this word means and your inferences about the idea of what fieldwork was for Jane, who we know was, at this point, an "untested" scientist. Any thoughts?*

Kids can share their thoughts with their partners and then with the class.

Say: *Text clues can help us infer meaning, but in nonfiction we have other features, such as photographs, that can give us additional clues. Take a look at the photos on pages 4 and 5 to see if they offer more clues about the idea of what fieldwork was for Jane. Turn and talk again.*

Kids turn and talk and further develop their inferences, based on the photos.

Say: *Great thinking and excellent inferences about the idea of fieldwork as it relates to Jane's experiences. Let's talk about what should go in the four-column chart. As we discuss this together, you can each fill in the chart on your own Think Sheet.*

With the class, go through the columns in the chart. Fill in the word *fieldwork* in column one and come up with an appropriate inference based on the discussions kids had with one another and with the class. Then spend some time fleshing out the clues they used from the text and photos to determine their inference.

Once the first three columns are filled in, work together as a class to write a sentence using the word *fieldwork.*

COLLABORATE (25 minutes)

Say: *Now it's time for you to work with a partner. Read pages 5–9. When you come across unfamiliar words, phrases, or ideas, stop and talk about them and practice using context clues to infer meaning. Remember that context clues can be found in pictures as well as in the text. Use your Think Sheet to record your thinking on the four-column chart. And don't forget the equation: BK +TC = I (Background Knowledge + Text Clues = Inference).*

Say: *If you finish early, read through the other articles in the magazine. There are many, many more inferences in your reading future!*

Partners work together. 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.

Say: *Okay, flip through the article and consult your Think Sheet and choose a word that you didn't understand and describe how you inferred the meaning. I am going to invite _____ to share new learning. We are going to share using respectful language. So when I ask: "_____, would you like to share your new learning?" You need to say: "Yes thank you." Then you can share your learning.*

Say: *After you share, ask if anyone has any comments or questions. Then 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. Also, everyone likes to be listened to when they share out, so remember to pay attention to the person who is sharing.*

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: *You learned so much today about inferring the meaning of unfamiliar words and ideas. Turn and talk about some of the important information you learned.*

Several kids share out.

Say: *Great work and great thinking today!*

Name _____ Date _____

THINK SHEET

Use this chart when you come across unfamiliar words, phrases, or ideas.

Word/Phrase/Idea	Inference	Text Clues	Sentence

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.

Say: *Does anyone know what it means to infer? Turn and talk about what you think it means to infer.*

Kids turn and talk. Some may have an idea about inferring; others may not.

Say: *We infer when we try to figure out something we don't know for sure. One way we infer while reading is when we come across an unfamiliar word. There is a kind of equation you can use to help you infer the meaning of an unfamiliar word or phrase. You can think about what you already know—that's your background knowledge—and merge it with clues in the text to infer the meaning. A simple way to remember the equation is BK + TC = I (Background Knowledge + Text Clues = Inference).*

Say: *Another thing about inferring is that you have to think about whether or not your inference makes sense. If it doesn't, you can look for more clues or more information. By using the clues in the text and merging that with what you already know, you become someone who infers instead of guesses.*

MODEL (10 minutes)

Kids are in a group on the floor in front of you.

Say: *Today I'm going to model how I infer the meaning of an unfamiliar word by using clues in the text, or context clues.*

Have kids turn to page ___.

What You'll Need

- Nonfiction text
- Think Sheet template
- Clipboards and pencils

Say: *As I read, I'm going to use a chart with four columns. I'll write any unfamiliar words I come across in the first column. In the second column, I'll write what I infer the word means. In the third column, I'll write the clues I used to help me infer the meaning. In the fourth column, when I have a good idea of what the word means, I'll write a short sentence that includes the word.*

Say: *Okay, now I'm ready to read and show you how I do this.* (Read and stop at an unfamiliar word.) *Here's a word I'm not sure of, so I'm going to look for some clues that might help me, but first I'll write the word in the first column of my chart. Then I'm going to look for clues.*

Read and think aloud as you find clues in the text. Also let kids know any background knowledge you have that might help infer the meaning. Merge that with the clues to make an inference.

Say: *Now I'm going to write my inference in the second column of my chart, and in the third column I'll write the clues I used. In the fourth column, I'll write this sentence: _____.*

Say: *Can you see how the context clues and my background knowledge helped me infer the meaning? Turn and talk about that.*

Kids turn and talk.

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: *You each have your own four-column chart on your Think Sheet. Now let's try this together. I'm going to keep reading. Let's look at page ____.*

Read page ___ and stop when you get to the word _____.

Say: *Hmmm, I'm not sure about this word. Turn to a partner and talk about what you infer this word means.* (Kids can share their thoughts with their partners and then with the class.)

Say: *Text clues can help us infer meaning, but in nonfiction we have other features, such as photographs, that can give us additional clues. Take a look at the photo(s) on page _____ to see if you find more clues about the word. Turn and talk again to discuss how the picture clues give you more information to use to infer.* (Kids turn and talk and further develop their inferences, based on the photo(s).)

Say: *Great thinking and excellent inferences about _____. Let's talk about what should go in the four-column chart. As we discuss this together, you can each fill in the chart on your own Think Sheet.*

With the class, go through the columns in the chart. Fill in the word _____ in column one and come up with an appropriate inference based on the discussions kids had with one another and with the class. Then spend some time fleshing out the clues they used from the text and photo(s) to determine their inference.

Once the first three columns are filled in, work together as a class to write a sentence using the word _____.

COLLABORATE (25 Minutes)

Say: *Now it's time for you to work with a partner. Read pages _____. When you come across unfamiliar words, phrases, or ideas, stop and talk about them and practice using context clues to infer meaning. Remember that context clues can be found in pictures as well as in the text. Use your Think Sheet to record your thinking on the four-column chart. And don't forget the equation: BK +TC = I (Background Knowledge + Text Clues = Inference).*

Say: *If you finish early, read through the other articles in the magazine. There are many, many more inferences in your reading future!*

Partners work together. 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, flip through the article and consult your Think Sheet and choose a word that you didn't understand and describe how you inferred the meaning. I am going to invite _____ to share new learning. We are going to share using respectful language. So when I ask: "_____, would you like to share your new learning?" You need to say: "Yes thank you." Then you can share your learning. After you share, ask if anyone has any comments or questions. Then 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. Also, everyone likes to be listened to when they share out, so remember to pay attention to the person who is sharing.*

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: *You learned so much today about inferring the meaning of unfamiliar words and ideas. Turn and talk about some of the important information you learned.*

Several kids share out.

Say: *Great work and great thinking today!*

Becoming Jane

SCIENCE

Standards Supported

- **NGSS Science and Engineering Practices: Engaging in Argument from Evidence:** Construct an argument with evidence, data, and/or a model. (4-LS1-1)
- **NGSS Science and Engineering Practices: Engaging in Argument from Evidence:** Support an argument with evidence, data, or a model. (5-LS1-1)

Resources

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

Science Background

Valerie Jane Morris-Goodall wasn't the most likely person to become one of the best-known scientists in the Western world. Born in 1934, she grew up at a time when women had few career options. Working as a scientist most certainly was not on that list.

Luckily, that didn't stop Goodall. At 23, she sailed to Kenya to pursue her dream of studying animals in Africa. There, she met the famed paleoanthropologist Louis S. B. Leakey.

Leakey, who studied early humans, thought that observing primates would help scientists understand how our earliest ancestors lived. He asked Goodall to conduct the study.

Goodall patiently worked her way closer to the chimps. Eventually they accepted her into their group. She was able to see how chimps lived and understand their complex social system.

Over the years, Goodall has shared her findings through lectures, articles, and movies. She has started organizations and spearheaded movements to protect and conserve animals in the wild and in captivity. Goodall has become a voice for animals and the natural world.

Click here for the Kahoot! quiz:
https://play.kahoot.it/#/k/d362fedc-7044-454c-8478-2027dd77d122

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 Jane Goodall.

EXPLORE

Display pages 2-3 of the projectable magazine. Invite students to examine the photo, headline, and text. Encourage students to brainstorm ideas about why this headline is fitting for an article about Jane Goodall's life and career.

EXPLAIN

After reading, remind students that Jane Goodall had no scientific background when she started studying chimpanzees. Because of that, her methods were different from those of other scientists at that time. **Say:** *Jane sat and watched the chimps to see how they behaved. She gradually worked her way closer to the group.* **Ask:** *Why do you think she did this and how do you think it affected her research?* (Possible response: She let the chimps get used to her in hopes that they would eventually accept her as part of the group. Then she could observe them more closely.) *What were the first three key discoveries Jane made using this approach?* (Chimps eat meat, use tools, and make tools.) As a class, discuss why these discoveries were so important.

ELABORATE

Display the section "Jane Goodall's Research Revealed" on pages 8-9 of the projectable magazine. Have students review the examples of Jane's key discoveries in small groups. Rejoin as a class. Discuss reasons why these discoveries support Jane's position that chimpanzees are "almost human creatures."

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: Becoming Jane

Draw a picture of one thing Jane Goodall observed when she first studied chimpanzees.

Describe what happened like Jane would have early in her career.

Write a more technical, scientific account of the same incident.

Weaving Words

SOCIAL STUDIES

Standards Supported

- **C3: Human-Environment Interaction: Place, Regions, and Culture:** Explain how the cultural and environmental characteristics of places change over time. (D2.Geo.5.3-5)

Resources

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

Social Studies Background

Peru is the third largest country in South America. About half of the country's residents live in a narrow strip of desert along the Pacific coast. Puno, the town featured in the article, sits high in the Andes Mountains on the edge of Lake Titicaca.

National Geographic Young Explorer Sandhya Narayanan went to Puno to study languages. The people of Puno speak two indigenous languages—Quechua and Aymara—as well as Spanish. Narayanan wanted to see how the languages connected to the larger social and political contexts of the community.

Narayanan discovered what she called a "generational gap" in language use. Younger people only speak Spanish, which is seen as the language of success. This makes it difficult for them to speak with their elders, who may only speak the indigenous languages.

Loss of indigenous languages also threatens the area's rich culture and traditions. The realization that language is a central part of these traditions is encouraging some younger people to embrace indigenous languages again.

Note: In the article, the author talks about drinking coca tea for altitude sickness. Point out to students that while this is legal in Peru, it is illegal in the U.S.

Click here for the Kahoot! quiz:
https://play.kahoot.it/#/k/8dd635ed-0149-4834-90eb-ba339f93b118

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 studying languages.

EXPLORE

Display pages 10-11 of the projectable magazine. Invite students to read aloud the headline and text. Point out that the writer went to Peru to study languages. **Ask:** *What do you think she means when she says she had to do a lot more than collect words?* Invite students to share their ideas.

EXPLAIN

After reading, challenge students to summarize what they learned about the writer's quest to study languages. **Ask:** *Why did she go to the Puno region of Peru?* (She thought the region's two indigenous languages might have melded to become something new.) *How did she study the languages?* (She recorded what people said as they went about their everyday activities. She conducted interviews) Have students turn and talk as they discuss what the writer learned. (People speak different varieties of the two local languages, but there is no new language in the area.) **Ask:** *How might environmental and cultural factors explain these results?* (Language is a huge part of culture and the location is relatively isolated. Both of these reasons explain the slow change.)

ELABORATE

Remind students that even though the indigenous languages in the Puno region haven't really changed yet, older generations are worried. Many younger people only speak Spanish. Challenge students to explain how this could have happened and how it could affect the people's culture in the future.

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: Weaving Words

Use the organizer to record information about the article.

Identify the research objective:

Explain why this particular study area was selected:

Describe how the research was conducted:

Summarize the results:

Give a reason why further study may be needed in the future:

Frozen...South Pole: The Final Challenge

SCIENCE

Standards Supported

- **NGSS ETS1.B: Developing Possible Solutions:** Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions. (3-5-ETS1-2)

Resources

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

Science Background

The South Pole, located on Antarctica, is the southernmost point on Earth. Sitting atop an ice sheet that is about 2,700 meters (9,000 feet) thick, it is also the coldest place on the planet. The highest temperature ever recorded at the South Pole was -12.3 degrees Celsius (9.9 degrees Fahrenheit).

On January 10, 2018, 16-year-old Australian Jade Hameister became the youngest person to ski from the Antarctic coast to the South Pole without support or assistance. She and her team, which set out along a new route, battled harsh winds and extreme temperatures along the way.

This expedition was the third and final leg of Hameister's Polar Hat Trick. On April 4, 2016, she completed her trek to the North Pole, and on June 4, 2017, she successfully skied across Greenland's icecap. By completing this latest journey, Hameister became the youngest person to ski to both the North and South poles and the youngest person to ever complete the Polar Hat Trick.

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 the South Pole.

EXPLORE

Display pages 16-17 of the projectable magazine. Invite students to examine the photos, headline, and deck. Point out that Jade Hameister had already skied to the North Pole and across Greenland. Brainstorm a list of reasons why skiing to the South Pole was her greatest challenge.

EXPLAIN

After reading, remind students that very few people have skied to the South Pole. **Ask:** *What did Jade and her team do to make the trip extra challenging?* (They traveled unassisted and they took a new route that no one had ever taken before.) Have students turn and talk as they identify challenges the team faced along the way. (Possibilities include: heavy sleds; steep hills; howling winds; blowing ice crystals; freezing temperatures; slick, blue ice; the Transantarctic Mountains; sastrugi; hidden crevasses; etc.) Challenge students to explain how the team worked together to overcome each challenge.

ELABORATE

Display page 19 of the projectable magazine. Challenge students to find on the map each place mentioned in the article. (South Pole, Kansas Glacier, Transantarctic Mountains, Stanford Plateau) Have students identify the part of the trip they think would be most difficult to tackle. Challenge them to explain why.

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/061426d5-744b-4889-be16-04cac3754e23

Name _____ Date _____

CONTENT ASSESSMENT: Frozen... South Pole: The Final Challenge

Identify three challenges Jade Hameister and her team faced. Explain how planning, preparation, and execution helped them overcome the challenges and achieve their goal.

	Planning	Preparation	Execution
Challenge 1			
Challenge 2			
Challenge 3			

Mesoamerica Posters

SOCIAL STUDIES

Standard 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

- Mesoamerica poster (Teacher's edition)
- Life in Mesoamerica 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 culture. 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 Mesoamerica.

EXPLORE

Display the **Mesoamerica poster**. Instruct students to examine the large and small maps. Challenge them to identify where Mesoamerica was located (North and Central America) and the large bodies of water that it bordered (Pacific Ocean, Gulf of Mexico, Caribbean Sea).

EXPLAIN

Invite students to examine the **Mesoamerica poster**. Point out the timeline at the bottom. **Ask:** *Which two Mesoamerican civilizations coexisted for hundreds of years?* (Olmec and Maya) *Why doesn't the poster mention great wars between these two groups?* (Possible response: They lived in different areas.) *Why weren't there conflicts with the Aztec, who shared territory with both?* (The Aztec appeared hundreds of years after both were gone.) Encourage students to review the poster for more information about the history of each Mesoamerican group. Then display the **Life in Mesoamerica poster.** Invite students to compare and contrast the art, religion, written language and calendars used by the three groups.

ELABORATE

Point out to students that the **Life in Mesoamerica** poster compares Olmec, Maya, and Aztec cultures in several different areas. Encourage students to conduct research to identify more ways these Mesoamerican civilizations were alike and different.

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: Mesoamerica Posters

Record three facts about the history and culture of each Mesoamerican civilization.

	Olmec	Maya	Aztec
History			
Culture			

What was the most surprising thing you learned about each group? Why?

Olmec	
Maya	
Aztec	

Name _____ Date _____

ARTICLE TEST: Becoming Jane

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

1. In which country did Jane Goodall study chimpanzees?
   - Ⓐ England
   - Ⓑ Kenya
   - Ⓒ Tanzania

2. What was her first great discovery about chimpanzees?
   - Ⓐ They eat meat.
   - Ⓑ They use tools.
   - Ⓒ They make tools.

3. What convinced people that her discoveries were accurate?
   - Ⓐ She published her field research.
   - Ⓑ She started Roots and Shoots.
   - Ⓒ *National Geographic* took pictures.

4. What is the focus of Goodall's work today?
   - Ⓐ observation
   - Ⓑ fieldwork
   - Ⓒ conservation

5. Explain how David Greybeard made a tool to catch termites.

_____

_____

_____

_____

Name _____ Date _____

ARTICLE TEST: Weaving Words

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

1. Where did Sandhya Narayanan go to study languages?
   - Ⓐ North America
   - Ⓑ South America
   - Ⓒ Africa

2. What kind of scientist is she?
   - Ⓐ paleoanthropologist
   - Ⓑ linguistic anthropologist
   - Ⓒ sociologist

3. What indigenous languages did the people she studied speak?
   - Ⓐ Spanish and Aymara
   - Ⓑ Spanish and Quechua
   - Ⓒ Aymara and Quechua

4. Where did she conduct her fieldwork?
   - Ⓐ in factories
   - Ⓑ in laboratories
   - Ⓒ in fields

5. What do people talk to Narayanan about when she interviews them?

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_____

Name _____ Date _____

ARTICLE TEST: Frozen... South Pole: The Final Challenge

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

1. Which part of the Polar Hat Trick was Jade Hameister's South Pole journey?
   - Ⓐ first
   - Ⓑ second
   - Ⓒ third

2. Which landform did Jade climb across first?
   - Ⓐ Transantarctic Mountains
   - Ⓑ Kansas Glacier
   - Ⓒ Stanford Plateau

3. What is notable about the Transantarctic Mountains?
   - Ⓐ They divide east and west Antarctica.
   - Ⓑ They almost double in size in winter.
   - Ⓒ They are the fifth largest mountain chain in the world.

4. What are sastrugi?
   - Ⓐ bottomless ice pits
   - Ⓑ steep hills
   - Ⓒ wave-like ridges of ice

5. What are two of the records Jade Hameister set after arriving at the South Pole?

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Name _____ Date _____

POSTER TEST: Mesoamerica Posters

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

1. What was the first civilization to evolve in Mesoamerica?
   - Ⓐ Olmec
   - Ⓑ Aztec
   - Ⓒ Maya

2. Which Mesoamerican civilization settled in the Yucatan Peninsula?
   - Ⓐ Olmec
   - Ⓑ Aztec
   - Ⓒ Maya

3. What is a glyph?
   - Ⓐ a type of ballgame
   - Ⓑ a symbol used in writing
   - Ⓒ a calendar

4. What did the Mayans and Aztec both believe about time?
   - Ⓐ Time stopped when the gods were mad.
   - Ⓑ Time could be tracked according to one calendar.
   - Ⓒ Time moved in a circle.

5. What do historians think brought about the downfall of each Mesoamerican civilization?

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_____

_____

_____

ANSWER KEY

Becoming Jane

Assess Content, page 10

Answers will vary depending on which discovery students choose to illustrate. Their initial description should be a narrative describing what happened. The second should reword the observation using scientific terms in a more technical format.

Article Test, page 17

1. C; 2. A; 3. C; 4: C; 5: Possible response: David Greybeard picked up a twig, stripped it of its leaves and used it to fish for termites. He poked the twig into the termite to pull termites out.

Weaving Words

Assess Content, page 12

Objective: to discover if the area's indigenous languages had melded to become something new
Explain: Possible response: The people speak two indigenous languages. Spanish is also spoken here. The area is remote.
Describe: The researcher conducted fieldwork, speaking to people as they went about their everyday activities. She interviewed them, asking them to say specific words and phrases. She also did free-form interviews so they could talk about anything they wanted to.
Summarize: The people speak varieties of the indigenous languages, but there is no new language.
Give Reasons: Possible response: Younger people only speak Spanish. They do not speak the indigenous languages. This could result in linguistic changes in the future.

Article Test, page 18

1. B; 2. B; 3. C; 4: C; 5: Possible response: People talk about their lives, tell her local folktales, or talk about the news. Some comment on changes in the region and in their languages.

Frozen... South Pole: The Final Challenge

Assess Content, page 14

Answers will vary depending on which challenges students identify. However, students should identify specific examples from the article showing how the team's planning, preparation, and execution helped them overcome each challenge.

Article Test, page 19

1. C; 2. B; 3. A; 4: C; 5: Options include: Youngest person to ski coast-to-South Pole unsupported and unassisted; the first woman—and part of the first all-Australian team—to set a new route from the coast to the South Pole; the youngest person to ski to both the North and South poles; the youngest person to complete the Polar Hat Trick.

Mesoamerica Posters

Assess Content, page 16

Students should record three facts about the history and culture of each Mesoamerican civilization. They should identify the one thing that surprised them the most about each civilization and give a valid reason supporting their opinions.

Poster Test, page 20

1. A; 2. C; 3. B; 4: C; 5: Olmec: Wars and climate change may have led to their undoing; Maya: Historians suspect civil war between royal families made farming difficult and many people died from hunger and disease; Aztec: The empire was taken over by the Spanish and millions of Aztecs died of European diseases.