

NATIONAL GEOGRAPHIC

SPECIAL ISSUE:
**WOMEN
IN SCIENCE**



Explorer



Jane Goodall
Primatologist **2**



Sandhya Narayanan
Linguist **10**



Jade Hameister
Polar Explorer **16**

TEACHER'S GUIDE Pioneer and Trailblazer Vol. 18 No. 4

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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

Pioneer

Becoming Jane 540
Weaving Words..... 540
Frozen... South Pole: The Final Challenge..... 500

Trailblazer

Becoming Jane 760
Weaving Words..... 650
Frozen... South Pole: The Final Challenge..... 600

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

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:

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.

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.

Second Grade Standard Supported

• **CCSS Reading Informational Text:** Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area. (2–4)

Third 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 3 topic or subject area. (2–4)

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.*

Read the title and the paragraph between the title and the byline.

Say: *This first sentence 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 study and learn about chimpanzees, but she hadn't done that before; she didn't have any training to do that. 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 Pioneer (Grade 2) and Trailblazer (Grade 3) Explorer magazines, so that's the word we chose for this section of the lesson. 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 to discuss how these picture clues give you more information to use to infer.*

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.*

Say: *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.*

Say: *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!*

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!*

Standards Supported

- **NGSS Connections in Nature of Science: Scientific Knowledge is Based on Empirical Evidence:** Scientists look for patterns and order when making observations about the world. (2-LS4-1)
- **NGSS Science and Engineering Practices: Engaging in Argument from Evidence:** Construct an argument with evidence, data, and/or a model. (3-LS2-1)

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.

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 was not a trained scientist when she started studying chimpanzees. Because of that, she had to figure out for herself how to study chimpanzees. **Say:** *Jane sat and watched the chimps to see how they behaved. She got to know the chimps and gave them names.* **Ask:** *Why do you think she did this? (It helped her keep track of the chimps.) How do you think it affected her research? (Possible response: It personalized the chimps and made her compare the chimps' behaviors to humans.) What were Jane's first three big discoveries? (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 each example was an important discovery.

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 saw chimpanzees do.



Write a story about what Jane saw.

What does this teach you about chimps?

Standards Supported

- **C3: Human-Environment Interaction: Place, Regions, and Culture:** Identify some cultural and environmental characteristics of specific places. (D2.Geo.6.K-2)
- **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. Realizing that language is a central part of these traditions is encouraging some younger people to embrace indigenous languages once again.

Note: The author mentions drinking coca tea for altitude sickness. Tell students that while this is legal in Peru, it is illegal in the U.S.

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 different languages.

EXPLORE

Display pages 10-11 of the projectable magazine. Invite students to read aloud the headline and text. Brainstorm ideas about how someone could study languages.

EXPLAIN

After reading, ask questions to help students summarize what they learned from reading the article. **Ask:** *Why does the author study languages?* (She wants to know how languages change and how they connect people to others around them.) *Why did she go to Puno, Peru, to study languages?* (She thought the two local, or indigenous, languages might have mixed together to make something new.) Have students turn and talk as they discuss how the author conducted her field research. (She worked beside people and recorded what they said as she interviewed them.) **Ask:** *What did she learn?* (There was no new language in the area. **Ask:** *How do you think the people's culture or where they live could explain these results?* (Language is a huge part of their culture, so it is slow to change. Puno is an isolated town high in the mountains. That could also explain why their language hasn't changed.)

ELABORATE

Point out to students that where people live impacts every part of their lives. In small groups, have students examine the text and photos for examples of how living in an isolated town high in the mountains affects the people of Puno, Peru.

EVALUATE

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

CONTENT ASSESSMENT: Weaving Words

Write what you learned about the culture, environment, and languages in Puno, Peru.

Culture	Environment	Languages

How did the author study languages here?

What did she discover?

SCIENCE

Standards Supported

- **NGSS ETS1.B: Developing Possible Solutions:** Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. (K-2-ETS1-2)
- **NGSS LS4.C: Adaptation:** For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3)

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 temperature drops 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 would be her greatest challenge.

EXPLAIN

After reading, remind students that very few people have skied to the South Pole. **Ask:** *Why would Jade and her team want to make it extra challenging by taking a new route?* (Possible response: They wanted to go somewhere nobody had ever been before.) Have students turn and talk as they identify challenges the team faced along the way. (Possibilities include: heavy sleds; steep mountains; howling winds; deep ice pits; ridges of ice; freezing temperatures; etc.) Challenge students to explain how the team worked together to overcome each challenge.

ELABORATE

Display page 19 of the projectable magazine. Have students identify major landforms Jade and her team crossed as they completed their expedition. Challenge students reading *TRAILBLAZER* to find where those places are mentioned in the article. (South Pole, Kansas Glacier, Transantarctic Mountains, Stanford Plateau) As a class, discuss how explorers and their travels help us understand the world we live in.

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: Frozen... South Pole: The Final Challenge

Identify two problems Jade Hameister and her team faced as they skied to the South Pole. Describe each problem. Then explain the team's solutions.

Problem 1:	Problem 2:
Describe	Explain

SOCIAL STUDIES

Standard 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

- Mesoamerica poster (Teacher's edition)
- Life in Mesoamerica poster (Teacher's edition)
- Content Assessment Master (page 16)
- Poster 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 Mesoamerica.

EXPLORE

Display the **Mesoamerica poster**. Invite students to examine the two maps. **Ask:** *Where is the Mesoamerican region located?* (Mexico and Central America) Brainstorm ideas about why ancient people might have wanted to settle in these places.

EXPLAIN

Invite students to examine the **Mesoamerica poster**. Point out the timeline at the bottom. **Ask:** *Which group of people were the first to settle in Mesoamerica?* (Olmec) *Which were the last?* (Aztec) *What are two ways the Aztec were different from the other Mesoamerican groups?* (Possible responses: The Aztec were hunters and the others farmed. The Aztec empire didn't exist as long because it was conquered by Spanish invaders shortly after it reached its peak.) 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 identify ways ancient Mesoamerican civilizations influenced people who live in the region today.

ELABORATE

Remind students that the **Life in Mesoamerica poster** compares aspects of the Olmec, Maya, and Aztec civilizations to how people in the region live today. As a class, brainstorm reasons why some of these traditions might have remained the same and why some have changed.

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

Draw a picture of the most interesting thing you learned about each Mesoamerican civilization.
Write a caption that tells about each picture.

Olmec

Maya

Aztec

Caption		

Picture		

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. Where did Jane Goodall go to study chimpanzees?
Ⓐ Africa
Ⓑ Asia
Ⓒ Antarctica

2. What did she discover that chimps ate?
Ⓐ leaves
Ⓑ meat
Ⓒ twigs

3. What did she discover that chimps made?
Ⓐ fish
Ⓑ termites
Ⓒ tools

4. Why were other scientists unsure about Goodall's discoveries?
Ⓐ They didn't think she had studied chimps long enough.
Ⓑ They didn't think she was a "real" scientist.
Ⓒ They thought she had taught the chimps to do tricks.

5. What are two other discoveries Jane Goodall made about chimps?

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. What kind of scientist is Sandhya Narayanan?
Ⓐ archaeologist
Ⓑ linguist
Ⓒ biologist
2. Where did she go to do her fieldwork for this study?
Ⓐ Tanzania
Ⓑ Antarctica
Ⓒ Peru
3. What local or indigenous languages did the people there speak?
Ⓐ Spanish and Aymara
Ⓑ Spanish and Quechua
Ⓒ Aymara and Quechua
4. What did she collect when she did her fieldwork?
Ⓐ pictures
Ⓑ interviews
Ⓒ objects
5. What are two things Narayanan did to hear people speak for her study?

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. How many parts were there in Jade Hameister's Polar Hat Trick?
Ⓐ one
Ⓑ two
Ⓒ three

2. Where is the South Pole?
Ⓐ Arctic Circle
Ⓑ Antarctica
Ⓒ Australia

3. Which mountains did Jade have to cross?
Ⓐ Transantarctic Mountains
Ⓑ Rocky Mountains
Ⓒ Appalachian Mountains

4. Which of these statements is true?
Ⓐ Jade fell into a deep crack in the ice.
Ⓑ Jade had dogs to pull her heavy sled.
Ⓒ Jade's team took a new route to the South Pole.

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

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 in Mesoamerica?
Ⓐ Olmec
Ⓑ Aztec
Ⓒ Maya

2. Which Mesoamerican empire did Spanish invaders conquer?
Ⓐ Olmec
Ⓑ Aztec
Ⓒ Maya

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

4. What is El Castillo?
Ⓐ a calendar
Ⓑ a pyramid
Ⓒ a religion

5. What is one way ancient Mesoamerica still influences people in the region today?

Pioneer and Trailblazer

ANSWER KEY

Becoming Jane

Assess Content, page 10

Answers will vary depending on which discovery students choose to illustrate. Students should write a narrative description of their picture. Then they should give an insightful response explaining what the example teaches them about chimps.

Article Test, page 17

1. A; 2. B; 3. C; 4. B; 5: Answers will vary, but students should identify two discoveries described in the article.

Weaving Words

Assess Content, page 12

List of facts: Examples will vary but should all be taken from the article.

Question 1: Students should note that the author worked alongside people doing actual field work. She spoke to them, interviewed them, and took notes with a recorder.

Question 2: Students reading PIONEER should note that the author did not discover any new languages, but she learned about their languages and how they lived. Students reading TRAILBLAZER should also mention that older generations are worried that younger people are learning Spanish but not their indigenous languages.

Article Test, page 18

1. B; 2. C; 3. C; 4: B; 5: Possible responses include: herd sheep and alpacas; plant and harvest crops; or went to a play.

Frozen... South Pole: The Final Challenge

Assess Content, page 14

Answers will vary depending on which problems students identify. However, students should identify specific examples from the article, describe each problem, and explain each solution.

Article Test, page 19

1. C; 2. B; 3. A; 4: C; 5: Options include: Youngest person to ski coast-to-South Pole without outside help; the first woman to set a new route 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 draw pictures showing one fact related to each Mesoamerican civilization. They should use information from the posters to write accurate captions for each picture.

Poster Test, page 20

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