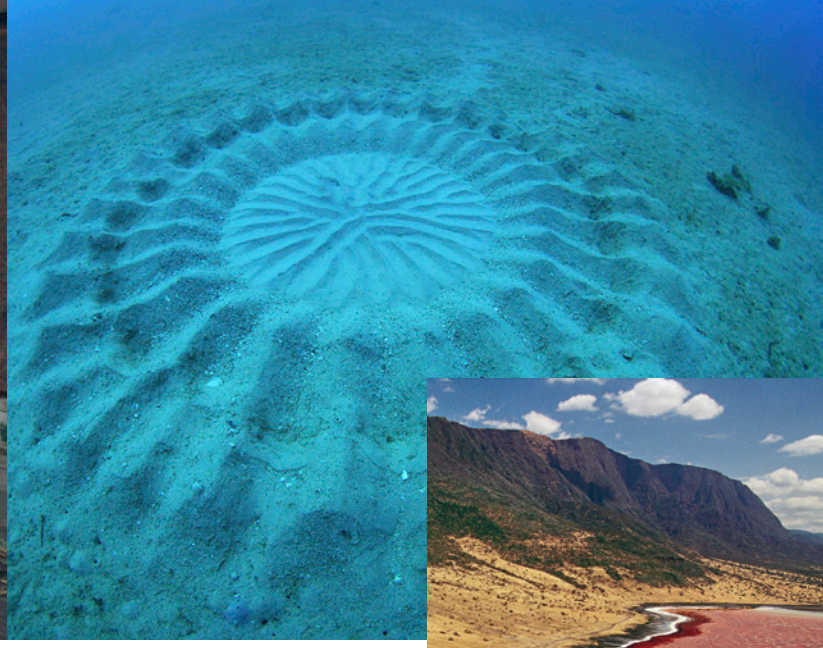
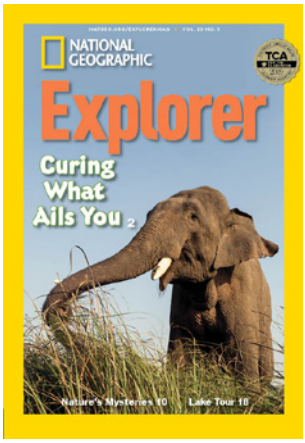


TEACHER'S GUIDE

PIONEER AND TRAILBLAZER | VOL. 20 NO. 5

IN THIS GUIDE:



LEXILE® FRAMEWORK LEVELS

PONEER

Curing What Ails You 530L

Nature's Mysteries. 520L

Lake Tour 500L

TRAILBLAZER

Curing What Ails You 690L

Nature's Mysteries. 560L

Lake Tour 570L

STANDARDS SUPPORTED

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

See each lesson for the specific standard covered.

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.

NATIONAL GEOGRAPHIC

Visit **EXPLORERMAG.ORG** to access digital issues of Explorer magazine in **English** and **Spanish**. Engage students with digital read-alouds, videos, and interactive activities.

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

ATTITUDES (A)

CURIOSITY An explorer remains curious about how the world works throughout his or her life. An explorer is adventurous, seeking out new and challenging experiences.

RESPONSIBILITY An explorer has concern for the welfare of other people, cultural resources, and the natural world. An explorer is respectful, considers multiple perspectives, and honors others regardless of differences.

EMPOWERMENT An explorer acts on curiosity, respect, responsibility, and adventurousness and persists in the face of challenges.

SKILLS (S)

OBSERVATION An explorer notices and documents the world around her or him and is able to make sense of those observations.

COMMUNICATION An explorer is a storyteller, communicating experiences and ideas effectively through language and media. An explorer has literacy skills, interpreting and creating new understanding from spoken language, writing, and a wide variety of visual and audio media.

COLLABORATION An explorer works effectively with others to achieve goals.

PROBLEM SOLVING An explorer is able to generate, evaluate, and implement solutions to problems. An explorer is a capable decision maker—able to identify alternatives and weigh trade-offs to make a well-reasoned decision.

KNOWLEDGE (K)

THE HUMAN JOURNEY An explorer understands where we came from, how we live today, and where we may find ourselves tomorrow.

OUR CHANGING PLANET An explorer understands the amazing, intricate, and interconnected systems of the changing planet we live on.

WILDLIFE AND WILD PLACES An explorer reveals, celebrates, and helps to protect the amazing and diverse creatures we share our world with.

NATIONAL GEOGRAPHIC Explorer

Second Grade Standard Supported

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

Third Grade Standard Supported

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

What You Will Need

- "Curing What Ails You" (*Explorer*)
- Think Sheet (Teacher's Guide, pages 6–7)
- Pencils

CONNECT & ENGAGE (5 minutes)

Display the first page of "Curing What Ails You."

Say: Take a look at these pages. What do you notice? Turn to each other and talk.

Kids turn and talk about what they notice on the pages.

Say: The title of this article is "Curing What Ails You." Turn and talk about what you think the title means.

Kids turn and talk about what the title might mean. Some may have an idea; others may not.

Say: I am assuming this title means that the article has something to do with cures for illnesses or aches and pains. I'm curious about the picture of the elephant, though. I'm inferring that elephants have something to do with these cures, but what? That's a question I have. I'm anxious to find this out. It's like a mystery story! Let's read the text on the page.

Read the text aloud.

Say: Okay, so now we know a little bit more. We can infer from the text that elephants must be able to teach us something about medicinal plants. That's fascinating! Can you infer anything else from the photos or the text? Turn and talk about that.

Let a few kids share their thoughts and make sure they know that medicinal plants are plants that can be used as medicines.

MODEL (10 minutes)

Display the next page of "Curing What Ails You."

Say: This article by Alex Greene, who is an ethnobotanist and National Geographic Explorer, is nonfiction, which, includes real, true information.

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

Say: I am going to read through a bit of this article and show you my thinking. When I have a question about something, I'm going to write it on a sticky note. Let me show you how this works for me.

Read aloud the first two paragraphs on the page.

Say: *T*hese first two paragraphs let me know a lot of new information. I learn that mahouts are elephant caretakers and that they and Alex Greene are at a conservation center in Thailand. The mahouts are unloading a truck with vines that will be used to make a medicine for the elephants. I have a few questions about that. I'm going to write them down: What kind of medicine will be made from the vines, and why do the elephants need the medicine? I'm going to keep reading to see if there is more information.

Read on.

Say: As I read on, I'm not really seeing the answer to my question yet, but I am getting more information about the elephants and the people called the Karen who live and work with the elephants. And, I have some of the same questions that are in the text. If the elephants like sweet foods and do not like bitter foods, why do the elephants want to eat the bitter vines? Like the author, I want to find out. I'm going to write that question down, too.

Say: I haven't found the answers to my questions yet, but if I do as I read on, I'm going to put an "A" for "Answer" on my sticky note where I wrote my question.

Say: I know that sometimes questions are answered in the text, but sometimes they are not.

Say: Before we move on, though, let's look at the photos and the captions. I think it's so interesting how elephants use their trunks to grab and lift the grasses to their mouths. I also like seeing the photo of the author working in the field. Turn and talk with a partner to share any thoughts or questions you have.

Give kids time to turn and talk about any thoughts or questions they may have.

GUIDE (10 minutes)

Make sure kids have access to their own Think Sheets. Display the next section of "Curing What Ails You."

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

Kids talk and share out things such as "I noticed you asked questions as you were reading." " I noticed you write questions on sticky notes." "I noticed you said you would write an "A" for "Answer" on the sticky note when your question was answered in the text."

Say: Good thinking. I am going to read on. I'm thinking that this next part should give us some information about the work the author did while he was working with the Karen and the elephants, and I'm sure we'll have some new questions, too. What do you think?

Say: Now, it's your turn. As I read on, when you have a question, jot it down on your Think Sheet. Use those squares like I used my sticky notes.

Read aloud the first section, "Research Begins."

Say: Well, it looks like we are getting an idea of what kind of research the author was doing with the plants. He was making a list of the plants that were being used to treat sick elephants. He had many questions about the plants and what they cured. He collected samples, dried them, labeled them, and kept them in a library of plant samples called an herbarium.

Say: One question I have is how long did all of this take? It seems like a lot of hard work. If you have other questions, write them down on your Think Sheet.

Read the next section, "Analyzing Data."

Say: Well, I got the answer to my question, so I'm going to write an "A" for "Answer" next to my question about how long this process took.

The text says the Karen and the author worked together for months to find 34 plants used for elephant medicine.

Say: There is some other amazing information here, too. If you have a question about anything, 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: Great stuff! And remember, if your question was answered, you can write an "A," so you know the text has answered this question.

Say: Now, let's take some time to look at, read, and talk about the photos, captions, map, and diagrams.

Give kids time to really look at and study these.

Say: Turn and talk about these features and any new thoughts or questions you have.

COLLABORATE (25 minutes)

Say: Now, it's time for you to read the rest of the article with a partner.

Say: Remember to jot down any questions you have on your Think Sheet. Questioning is the strategy that keeps us reading. Our curiosity drives us to find answers. If you find the answer to a question, mark your Think Sheet with an "A" for "Answer" next to the question.

Partners read and practice the "ask questions as you read" strategy. Move around the room, conferring with partners.

SHARE THE LEARNING (10 minutes)

Say: Okay, now let's share any questions you had, answers you found, or any new learning you gained. Choose a Think Sheet square with a question you would like to share. I am going to invite someone to start. Then, when finished sharing, that person can pick another person to share. Remember to always use respectful sharing language—calling on people by name, saying "thank you," and paying close attention when others are sharing.

Kids share out and invite others to share, always using the respectful sharing language that was modeled.

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

Name _____ Date _____

THINK SHEET

Use these note squares to write questions you have as you read. When you find an answer, write "A" next to the question.

Nombre _____ Fecha _____

HOJA DE PENSAR

Mientras lees, anota tus preguntas en estos recuadros. Cuando encuentres una respuesta, escribe "R" junto a la pregunta.

This frame is a template of the language arts lesson. 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.

What You Will Need
- Nonfiction text
- Think Sheet template
- Pencils

CONNECT & ENGAGE (5 minutes)

Display the first page(s) of the article.

Say: Take a look at these pages. What do you notice? Turn to each other and talk.

Kids turn and talk about what they notice on the pages.

Say: The title of this article is "_____." Turn and talk about what you think the title means.

Kids turn and talk about what the title might mean. Some may have an idea; others may not.

Say: I think this title has something to do with _____. I am inferring this because _____. I'm curious about _____. That's a question I have. I'm anxious to find this out. Let's read the text on page ____.

Read the text aloud and then have kids turn and talk about the title and the text.

Let a few kids share their thoughts with the class.

MODEL (10 minutes)

Display the next page(s) of the article.

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

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

Say: Let me show you how this works for me.

Read aloud a few paragraphs on page ____.

Say: These paragraphs let me know that _____. I have a question about that. 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 _____. I'm going to put an "A" for "Answer" on my sticky note where I wrote my question.

Mark the sticky note with an "A."

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

Say: Now I wonder about _____. I'll write the question "_____?" on another sticky note.

Give kids time to turn and talk to understand the process. Talk about any questions they may have. Remind them that all of their questions may not be answered. However, they will learn lots of new information in the process and may have some interesting things to research on their own because of their questions.

GUIDE (10 minutes)

Make sure kids have access to their own Think Sheets. Display the next page(s) of the article.

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

Kids talk and share out things such as "I noticed you asked questions as you were reading." " I noticed you write questions on sticky notes." "I noticed you wrote an "A" for "Answer" on the sticky note when your question was answered in the text."

Say: Good thinking. I am going to read on. I'm thinking that this next part should give us some information about _____, and I'm sure we'll have some new questions, too. What do you think?

Say: Now, it's your turn. As I read page ____, when you have a question, jot it down on a Think Sheet square. Use those squares like I used my sticky notes.

Read aloud page ____.

Say: Well, it looks like we have an answer. I'm going to put an "A" on my sticky note. If you have other questions, write them down on your Think Sheet squares.

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.

vGreat stuff! And remember, if your question was answered, you can write an "A," so you know the text has answered this question.

COLLABORATE (25 Minutes)

Say: *Now, it's time for you to read the rest of the article with a partner.*

Say: Remember to jot down any questions you have on your Think Sheet squares. Questioning is the strategy that keeps us reading.

Say: Our curiosity drives us to find answers. If you find the answer to a question, mark your Think Sheet square with an "A" for "Answer" next to the question.

Partners read and practice the "ask questions as you read" strategy. Move around the room, conferring with partners.

SHARE THE LEARNING (10 minutes)

Say: Okay, now it's time to share any questions you had, answers you found, and any new learning. Choose a Think Sheet square with a question you would like to share. I am going to invite someone to start. Then, when finished sharing, that person can pick another person to share. Remember to always use respectful sharing language—calling on people by name, saying "thank you," and paying close attention when others are sharing.

Kids share out and invite others to share, always using the respectful sharing language that was modeled.

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

CURING WHAT AILS YOU

SCIENCE

Standards Supported

- **NGSS Connections to 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 Crosscutting Concepts: Cause and Effect:** Cause and effect relationships are routinely identified and used to explain change. (3-LS4-2), (3-LS4-3)

What You Will Need

- Interactive Digital Magazine
- Content Assessment (English and Spanish) (pages 11-12)
- Article Test (English and Spanish) (pages 19-20)

SCIENCE BACKGROUND

The Thai Elephant Conservation Center, (TECC) established in 1993, is Thailand's only state-owned elephant sanctuary. Caretakers at the center, known as mahouts, treat sick or injured elephants. Scientists and specialists conduct research to find better ways to look after elephants.

Alex Greene is an ethnobotanist, or a scientist who studies how communities traditionally use plants. Greene went to TECC in northern Thailand to understand how caretakers used traditional herbal remedies to care for captive wild Asian elephants. Through his studies, he discovered that many plants were used to treat the same illnesses in elephants and people.

ENGAGE

Encourage students to review the article and turn and talk with a partner to discuss what they see. Invite students to ask questions or share what they know about elephants.

EXPLORE

Display the **"Curing What Ails You" article** with the interactive digital magazine. As a class, brainstorm ideas about what elephants can teach people about medicinal plants.

EXPLAIN

After reading, invite students to share what they learned about elephants and medicinal plants. **Ask:** *What was one of the first things Alex Greene noticed about the elephants at the Thai Elephant Conservation Center (TECC)?* (They like to eat sweet foods.) *Why was he surprised that the elephants wanted to eat the spiky vines?* (The vines are bitter.) *What did that make him wonder?* (He wondered if the elephants knew the vines were medicine.) As a class, discuss how Alex Greene conducted research and analyzed data. **Ask:** *What new question did the results make him ask?* (Where did the knowledge about plant medicines come from?) *What conclusion did he reach?* (People and elephants learned from each other.)

ELABORATE

Remind students elephants seek out these plants on their own in the forest. Over time, people have learned from elephants how to use the plants as medicine. Encourage students to identify other things people have learned from animals. Challenge them to describe ways people have applied that knowledge to improve their everyday lives.

EVALUATE

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

Name _____ Date _____

CONTENT ASSESSMENT: CURING WHAT AILS YOU

Describe how Alex Greene observed, collected, and analyzed information about plants used as medicine for elephants. Summarize what he discovered.

Observe	Collect
Analyze	**Discover**

Nombre _____ Fecha _____

EVALUACIÓN DE CONTENIDO: SABIDURÍA ANIMAL

Describe cómo Alex Greene observó, registró y analizó la información sobre las plantas usadas como medicina para elefantes. Resume qué descubrió.

Observar	Registrar
Analizar	**Descubrir**

NATURE'S MYSTERIES

SCIENCE

Standards Supported

- **NGSS Crosscutting Concepts: Patterns:** Patterns in the natural world can be observed. (2-ESS2-2_, (2-ESS2-3)
- **NGSS Science and Engineering Practices: Engaging in Argument from Evidence:** Construct an argument with evidence. (3-LS4-3)

What You Will Need

- Interactive Digital Magazine
- Content Assessment (English and Spanish) (pages 14-15)
- Article Test (English and Spanish) (pages 21-22)

SCIENCE BACKGROUND

Nature is full of mysteries that scientists are eager to solve. To do that, they must form a hypothesis, search for clues, and conduct investigations. It is not uncommon for scientists to reach different conclusions about what caused a phenomenon to occur.

One mystery that scientists have studied strange circles of bare soil surrounded by grass in Africa's Namib Desert. After extensive research, biologists Norbert Juergens believes he has discovered the cause: sand termites.

One mystery scientists have solved without a doubt are circles that appeared on the seafloor off the coast of Japan. It turns out, these are underwater nests, created by male pufferfish.

Still unsolved is the mystery of "Racetrack Playa," a place in Death Valley where large rocks slide along the desert floor. There are several theories, but scientists have never been able to prove why this happens.

ENGAGE

Encourage students to review the article and turn and talk with a partner to discuss what they see. Invite students to ask questions or share what they know about mysterious things that happen in nature.

EXPLORE

Display the **"Nature's Mysteries" article** with the interactive digital magazine. As a class, brainstorm ideas about how a stone would be able to move on its own.

EXPLAIN

After reading, display the photo showing circles in the sand with the interactive digital magazine. **Ask:** *What would you think if you saw thousands of circles like these in a desert?* Invite students to share their ideas. **Ask:** *What does biologist Norbert Juergens think caused these circles?* (sand termites). *What clues did he find that led him to that conclusion?* (He discovered wet sand, grass, and sand termites in the circles) As a class, discuss how these clues helped Juergens solve the mystery. In small groups, have students explore the other mysteries introduced in the article in this same way. Challenge them to identify clues that led scientists to each logical conclusion.

ELABORATE

After reading, point out to the class that there are lots of things in nature that people don't understand. As a class, identify a natural mystery in the area where you live. Encourage students to share stories they've heard that explain the mystery. Discuss how you could conduct a scientific study to learn its true cause.

EVALUATE

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

Name _____ Date _____

CONTENT ASSESSMENT: NATURE'S MYSTERIES

Draw one of nature's mysteries described in the article. Tell what it is, what people thought it was, and how scientists solved the mystery.

Draw
What is it?
What did people think it was?
How did scientists solve the mystery?

Nombre _____ Fecha _____

EVALUACIÓN DE CONTENIDO: MISTERIOS DE LA NATURALEZA

Dibuja uno de los misterios de la naturaleza descritos en el artículo. Di en qué consiste el misterio, lo que la gente creía que era y cómo los científicos lo resolvieron.

Dibuja
¿Cuál es el misterio?
¿Qué creía la gente que era?
¿Cómo lo resolvieron los científicos?

LAKE TOUR

SCIENCE

Standards Supported

- **NGSS ESS2.A: Earth Materials and Systems:** Wind and water can change the shape of the land. (2-ESS2-1)
- **NGSS Science and Engineering Practices: Obtaining, Evaluating, and Communicating Information:** Obtain and combine information from books and other reliable media to explain phenomena. (3-ESS2-2)

What You Will Need

- Interactive Digital Magazine
- Content Assessment (English and Spanish) (pages 17-18)
- Article Test (English and Spanish) (pages 23-24)

SCIENCE BACKGROUND

A lake is a body of water surrounded by land. There are millions of lakes on Earth. Lakes are found on every continent and in every type of environment.

Lakes come in all shapes and sizes. And they can have staggering depths. Lake Baikal in Russia is more than 1,000 meters (almost a mile) deep. It is the deepest lake on Earth.

Lakes form in different ways. Some were formed by glaciers. Others were formed by the movement of tectonic plates. Some even lie at the top of collapsed volcanic cones .

Lakes also have different characteristics. Some contain freshwater. The water in others is salty. Some are filled with cool water. The water in others is boiling.

ENGAGE

Encourage students to review the article and turn and talk with a partner to discuss what they see. Invite students to ask questions or share what they know about lakes.

EXPLORE

Display the **"Lake Tour" article** with the interactive digital magazine. As a class, share ideas about characteristics that might make a lake seem peculiar.

EXPLAIN

After reading, encourage students to think about what they learned from the article. Challenge the class to write a definition for the word lake. (Possible response: a large body of water surrounded by land.) Discuss how lakes are different from other bodies of water, such as rivers, oceans, and streams. **Say:** *Because lakes are surrounded by land, they are often filled by rain or melting snow. But, that's not always the case.* In small groups, have students discuss the different lakes introduced in the article. Encourage them to identify the unique characteristics of each.

ELABORATE

Point out to students that each of the lakes they read about in the article is weird for a reason. For example, Spotted Lake has polka dots because the water in evaporates, leaving pools of minerals behind. Boiling lake is so hot because the island where it is located sits on top of a volcano. Water in the lake is heated by melted rock in the ground. As a class, brainstorm a list of other reasons—natural or man-made—that a lake could be peculiar. Have students share their theories about how each cause might affect the water in a lake.

EVALUATE

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

Name _____ Date _____

CONTENT ASSESSMENT: LAKE TOUR

Make a checkmark to show if you think each sentence is true or false.
Use information from the article to explain your answers.

Description	True	False	Explain
1. Spotted Lake is full of chemicals.			
2. The water in Lake Natron will burn your skin.			
3. It is safe to swim in both "Jellyfish Central" and in Boiling Lake.			
4. Lake Baikal is very old.			
5. Some lakes in Greenland disappear in winter.			

Nombre _____ Fecha _____

EVALUACIÓN DE CONTENIDO: LAGOS SIN IGUAL

Indica con una marca si cada enunciado es verdadero o falso.
Usa la información del artículo para explicar tus respuestas.

Descripción	Verdadero	Falso	Explica
1. El lago Spotted tiene vertidos contaminantes.			
2. El agua del lago Natrón te abrasará la piel.			
3. Es seguro nadar tanto en el lago de las medusas como en el lago Boiling.			
4. El lago Baikal es muy antiguo.			
5. Algunos lagos de Groenlandia desaparecen en invierno.			

Name _____ Date _____

ARTICLE TEST: CURING WHAT AILS YOU

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 Alex Greene?

Ⓐ ethnobotanist
Ⓑ archaeologist
Ⓒ chemist

2. What does he keep in an herbarium?

Ⓐ plant samples
Ⓑ elephants
Ⓒ medicines

3. Which plant part was most often used for elephant medicine?

Ⓐ seeds
Ⓑ leaves
Ⓒ bark

4. What was the most common medical treatment he discovered?

Ⓐ a skin cream
Ⓑ a treatment for broken bones
Ⓒ a health tonic

5. How has seeing which plants elephants eat helped people?

_____

_____

_____

_____

Nombre _____ Fecha _____

PRUEBA DEL ARTÍCULO: SABIDURÍA ANIMAL

Lee cada pregunta. Llena el círculo de cada opción correcta y responde a la última pregunta en los espacios en blanco.

1. ¿Qué clase de científico es Alex Greene?

Ⓐ un etnobotánico

Ⓑ un arqueólogo

Ⓒ un químico

2. ¿Qué se guarda en un herbario?

Ⓐ plantas secas

Ⓑ elefantes

Ⓒ medicinas

3. ¿Qué parte de planta se usa más a menudo como medicina para elefantes?

Ⓐ las semillas

Ⓑ las hojas

Ⓒ la corteza

4. Según Alex Greene, ¿qué problema es el más tratado con las plantas medicinales?

Ⓐ los problemas de piel

Ⓑ los huesos rotos

Ⓒ la debilidad

5. ¿Cómo ha ayudado a las personas ver qué plantas comen los elefantes?

_____

_____

_____

_____

Name _____ Date _____

ARTICLE TEST: NATURE'S MYSTERIES

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

1. What made the sand circles in the Namib Desert ?

Ⓐ dragons

Ⓑ poisonous gas

Ⓒ sand termites

2. What makes circles the ocean floor near Japan?

Ⓐ aliens

Ⓑ male pufferfish

Ⓒ ocean currents

3. What is strange about the big rocks in Death Valley?

Ⓐ They are magical.

Ⓑ People see them move.

Ⓒ They slide uphill.

4. During what time of year do the rocks in Death Valley move?

Ⓐ summer

Ⓑ spring

Ⓒ winter

5. How did scientists solve the mystery of circles on the seafloor near Japan?

_____

_____

_____

_____

Nombre _____ Fecha _____

PRUEBA DEL ARTÍCULO: MISTERIOS DE LA NATURALEZA

Lee cada pregunta. Llena el círculo de cada opción correcta y responde a la última pregunta en los espacios en blanco.

1. **¿Qué formó los círculos de arena en el desierto del Namib?**
   - Ⓐ dragones
   - Ⓑ gases venenosos
   - Ⓒ termitas

2. **¿Qué formó el círculo en el lecho marino en Japón?**
   - Ⓐ los extraterrestres
   - Ⓑ un pez globo macho
   - Ⓒ las corrientes marinas

3. **¿Qué tienen de especial las rocas gigantes del Valle de la Muerte?**
   - Ⓐ Son mágicas.
   - Ⓑ La gente las ve moverse.
   - Ⓒ Se deslizan hacia arriba.

4. **¿Durante qué época del año se mueven las rocas en el Valle de la Muerte?**
   - Ⓐ verano
   - Ⓑ primavera
   - Ⓒ invierno

5. **¿Cómo resolvieron los científicos el misterio de los círculos submarinos de Japón?**

_____

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_____

_____

Name _____ Date _____

ARTICLE TEST: LAKE TOUR

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

1. Which weird lake is red because of bacteria?

Ⓐ Lake Natron
Ⓑ "Jellyfish Central"
Ⓒ Boiling Lake

2. What kind of water is in Lake Baikal?

Ⓐ salty water
Ⓑ meltwater
Ⓒ freshwater

3. When does Spotted Lake become spotted?

Ⓐ after the salt burns
Ⓑ after the water dries up
Ⓒ after the rock melts

4. Which of these lakes has the hottest water?

Ⓐ Lake Baikal
Ⓑ Boiling Lake
Ⓒ Spotted Lake

5. Compare and contrast two of the weird lakes from the article.

_____

_____

_____

_____

Nombre _____ Fecha _____

PRUEBA DEL ARTÍCULO: LAGOS SIN IGUAL

Lee cada pregunta. Llena el círculo de cada opción correcta y responde a la última pregunta en los espacios en blanco.

1. ¿Qué extraño lago es rojo a causa de las bacterias?

Ⓐ el lago Natrón
Ⓑ el lago de las medusas
Ⓒ el lago Boiling

2. ¿Qué tipo de agua hay en el lago Baikal?

Ⓐ salada
Ⓑ de deshielo
Ⓒ dulce

3. ¿Cuándo se volvió moteado el lago Spotted?

Ⓐ cuando lo quemó la sal
Ⓑ cuando el agua se secó
Ⓒ cuando la roca se derritió

4. ¿Cuál de estos lagos tiene el agua más caliente?

Ⓐ el lago Baikal
Ⓑ el lago Boiling
Ⓒ el lago Spotted

5. Compara y contrasta dos de los extraños lagos del artículo.

_____

_____

_____

_____

PIONEER AND TRAILBLAZER

ANSWER KEY

CURING WHAT AILS YOU

Content: pages 11-12
Observe: He observed which plants elephants wanted to eat.
Collect: He collected samples of plants in the forest and kept them in a herbarium. He collected information from people so he knew which plants to get.
Analyze: He identified the plants most often used in elephant medicine. He learned which part of the plant the medicines came from, how the medicines were made, and which problems they treated..
Discover: He discovered that people used many of the same plants for medicine, but some plants were only used to treat elephants. Many of the plants used came from people first. Some came from elephants. He couldn't trace where some plants were first used for medicine.

Article Test: page 19-20
1. A; 2. A; 3. C; 4. C; 5. People saw which plants elephants used for medicine. They made medicines for people out of those same plants.

NATURE'S MYSTERIES

Content: page 14-15
Students should draw a picture of one of the mysteries mentioned in the article and use information from the article to explain what it is, what people thought it was, and how scientists solved the mystery.

Article Test: page 21-22
1. C; 2. B; 3. C; 4. C; 5. They went to a place where they had seen a circle many times. Finally, they saw a male pufferfish come make a circle. They watched to see how he did it and what happened after he was done.

LAKE TOUR

Content: page 17-18
1. False: The spots in Spotted Lake are caused by minerals, not chemicals.
2. True: The water in Lake Natron is so salty that it will burn your skin.
3. False: It is safe to swim in "Jellyfish Central" because the jellies there don't sting. But it is not safe to swim in Boiling Lake because the water is too hot.
4. True: Lake Baikal is the oldest lake on Earth.
5. False: Some lakes in Greenland disappear in summer, not winter. Warm air melts the ice, creating cracks. Water from the lakes leaks through the cracks.

Article Test: page 23-24
1. A; 2. C; 3. B; 4. B; 5. Answers will vary depending on which lakes students select. Students should note, however, that both lakes are bodies of water surrounded by land.

PIONEER Y TRAILBLAZER

CLAVE DE RESPUESTAS

SABIDURÍA ANIMAL

Contenido: páginas 11 y 12

Observó: Alex Greene observó las plantas que querían comerse los elefantes.

Recolectó: Tomó muestras de plantas de la selva y las almacenó en un herbario. Registró información a través de entrevistas para saber qué plantas buscar.

Analizó: Identificó las plantas más usadas como medicina para elefantes. Estudió con qué parte de las plantas se hacían las medicinas, cómo se fabricaban y qué problemas trataban.

Descubrió: Descubrió que la gente usaba plantas muy parecidas a modo de medicinas, aunque algunas de ellas solo se usaban para tratar a los elefantes. Muchas de las plantas las usaron primero las personas. Otras las usaron primero los elefantes. Hubo otras plantas medicinales de las que no pudo saber si fueron usadas primero por los animales o por la humanidad.

Prueba del artículo: páginas 19 y 20
1. A; 2. A; 3. C; 4. C; 5. Las personas observaron qué plantas se comían los elefantes. Con esas mismas plantas, hicieron medicinas para las personas.

MISTERIOS DE LA NATURALEZA

Contenido: páginas 14 y 15
Los estudiantes deben hacer un dibujo de uno de los misterios mencionados en el artículo y usar la información para explicar en qué consiste el misterio, lo que la gente cree qué es y cómo lo resolvieron los científicos.

Prueba del artículo: páginas 21 y 22
1. C; 2. B; 3. C; 4. C; 5. Fueron a un lugar donde vieron muchas veces un círculo. Finalmente, vieron a un pez globo macho formar el círculo. Observaron cómo lo hacía y lo que ocurrió después de que hubiera terminado.

LAGOS SIN IGUAL

Contenido: páginas 17 y 18

1. Falso: los minerales son los causantes de los lunares del lago Spotted, no la contaminación.

2. Verdadero: el agua del lago Natrón es tan salada que te abrasará la piel.

3. Falso: es seguro bañarse en el lago de las medusas porque las medusas ya no pican. Pero no es seguro bañarse en el lago Boiling porque sus aguas están muy calientes.

4. Verdadero: el lago Baikal es el lago más antiguo de la Tierra.

5. Falso: algunos lagos en Groenlandia desaparecen en verano, no en invierno. El aire caliente hace moverse el hielo y lo agrieta. El agua de los lagos se cuela por esas grietas.

Prueba del artículo: páginas 23 y 24
1. A; 2. C; 3. B; 4. B; 5. Las respuestas variarán según el lago elegido. Sin embargo, los estudiantes deben mencionar que ambos lagos son masas de agua rodeadas de tierra.