Faces® Teacher Guide: July/August 2022

Faces™

Is It Hot or Is It Cold?

Extreme temperatures affect everything from weather patterns to wildlife to personal safety. This month's issue of FACES magazine examines the impacts of extreme hot and extreme cold temperatures as readers are transported from Siberia to Death Valley.

CONVERSATION QUESTION

What are the effects of extreme temperatures?

TEACHING OBJECTIVES

- **Students will learn about the dangers of extreme temperatures and how to be prepared.**
- **Students will learn why Lake Baikal is one of Earth's most amazing natural wonders.**
- **Students will learn about the landforms of California's Death Valley.**
- **Students will study the impact of location.**
- **Students will distinguish between fact and opinion statements.**
- **Students will examine the geographical features of a region.**
- **Students will compose extreme weather warnings.**
- **Students will convert temperature measurements using the Fahrenheit and Celsius scales.**
- **Students will create a travel brochure for Death Valley National Park.**

In addition to supplemental materials focused on core Social Studies skills, this flexible teaching tool offers vocabulary-building activities, questions for discussion, and cross-curricular activities.

SELECTIONS

- **Staying Safe in Extreme Temperatures**
Expository Nonfiction, ~1070L
- **The Pearl of Siberia: Lake Baikal**
Expository Nonfiction, ~1020L
- **Living It Up in Death Valley**
Expository Nonfiction, ~1150L

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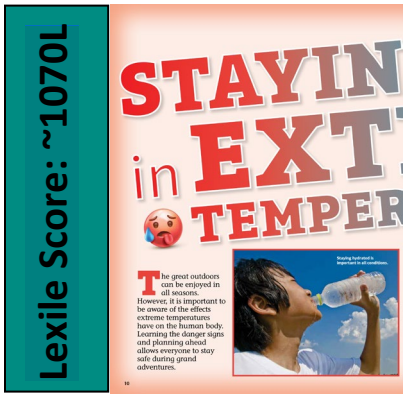
Staying Safe in Extreme Temperatures

pp. 10–13, Expository Nonfiction

Knowledge and preparation are necessary to stay safe in extreme high and low temperatures. Readers will learn how to enjoy "nature's playgrounds" in all kinds of weather.



RESOURCES

- Impact of Innovation: Mean & Extreme

OBJECTIVES

- Students will learn about the dangers of extreme temperatures and how to be prepared.
- Students will study the impact of location.
- Students will compose extreme weather warnings.

KEY VOCABULARY

- ***electrolytes* (p. 11)** various substances in the fluid of your body that control how your body processes waste and absorbs vitamins and minerals
- ***hypothermia* (p. 12)** a condition in which the temperature of your body is very low

ENGAGE

Conversation Question: What are the effects of extreme temperatures?

Display the weather forecast in your area for the week ahead. Discuss why people are interested in knowing the weather forecast. Pose the following questions: *How might weather affect your activities in the week ahead? Have you ever altered plans due to the forecast? How?*

INTRODUCE VOCABULARY

Post and read aloud the vocabulary words. Tell students that many scientific terms contain Greek and Latin roots. Break apart the terms and show the root meanings. Then compare to actual definition.

electrolyte = ***electr-*** (related to electricity) + ***lyt-*** (dissolving)

hypothermia = ***hyp-*** (below, under) + ***therm-*** (heat)

Have students list other words that contain these roots.

READ & DISCUSS

Reinforce comprehension of the concepts presented in the article by using the following questions to direct discussion.

1. Why is it important to plan for extreme hot and cold temperatures?
2. What are some heat-related complications that can develop?
3. How can you help someone who is experiencing heat exhaustion?
4. Why should you always let someone know where you are going before venturing out in nature?
5. What can happen to people exposed to dangerously low temperatures?

CONCEPT/SKILL FOCUS: Impact of Location

INSTRUCT: Review the text and guide students to express that the article was written to teach readers how to prepare for extreme hot and cold temperatures and how to treat the emergencies that can arise from such exposure. Use the *Impact of Innovation: Mean & Extreme* graphic organizer to explain how tragedies can be avoided.

ASSESS: Have students discuss the ways they have prepared for extreme temperatures. Review worksheet.

EXTEND

Language Arts Have students work in pairs or small groups to compose a 280-character message that warns the public about extreme heat or extreme cold conditions. In their message, students should include comments describing the extreme weather and how to prevent health emergencies. Have students share messages with the class.

Mean & Extreme

Impact of Location Review the article and locate information that will help you complete the chart below. How should you prepare for extreme weather? What are the dangers? What are the treatments?

Temperature	Preparation	Dangers	Treatments
Extreme Heat			
Extreme Cold			

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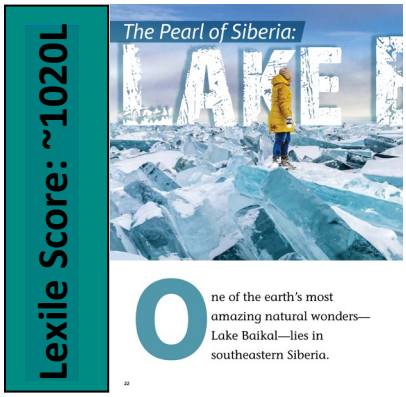
The Pearl of Siberia: Lake Baikal

pp. 22–25, Expository Nonfiction

Located in southeastern Siberia, Lake Baikal is the world's oldest and deepest freshwater lake. Readers will learn about its closed ecosystem and its severe microclimate.



RESOURCES

- Facts and Opinions: Siberian Fact Attack

OBJECTIVES

- Students will learn why Lake Baikal is one of Earth's most amazing natural wonders.
- Students will distinguish between fact and opinion statements.
- Students will convert temperature measurements using the Fahrenheit and Celsius scales.

KEY VOCABULARY

- ***taiga* (p. 23)** a forest in the cold, subarctic region that lies just south of the Arctic Circle
- ***tundra* (p. 23)** a type of biome where tree growth is hindered by low temperatures and short growing seasons
- ***steppe* (p. 24)** a dry, cold, grassy plain

ENGAGE

Conversation Question: What are the effects of extreme temperatures?

Inform students that the article they will be reading introduces them to the fascinating ecosystem of the world's oldest and deepest freshwater lake. Display a world map and give students the following clues, one at a time, so that they can locate the lake being studied (Lake Baikal).

- This lake is located in the Western Hemisphere.
- This lake is located on the continent of Asia.
- This lake is located about 2,400 miles north of the equator.
- This lake is owned by Russia.
- This lake is situated in the southern part of eastern Siberia, north of the Mongolian border.

INTRODUCE VOCABULARY

Discuss the key vocabulary words and definitions with the class. Ask them to identify how all of these words relate to each other. (They are habitats/biomes.) Invite students to share prior knowledge relating to these terms. Have students circle other biome-related words in the reading. (Skill = categorizing information)

READ & DISCUSS

Read the article aloud with the class. Have students reread the text in small groups to answer the questions below. Discuss responses.

1. What is a closed ecosystem?
2. Why are there so many strange creatures thriving in Lake Baikal?
3. How could you get a stunning view of Lake Baikal?
4. What is unique about the golianka fish?
5. How is Lake Baikal currently threatened by pollution?

CONCEPT/SKILL FOCUS: Fact and Opinion

INSTRUCT: Review that it is important to be able to make distinctions between fact and opinion in order to determine the credibility of information. (Facts can be proven; they are true for everyone. Opinions can't be proven; they are personal judgments.) Instruct students to review the article and to classify each statement on the *Distinguishing Fact and Opinion: Siberian Fact Attack* worksheet as a fact or opinion.

ASSESS: After reviewing answers, have students choose one fact statement and one opinion statement and explain why they categorized the statements as such.

EXTEND

Measurement The water temperature of Lake Baikal averages 15 degrees Celsius in July and August. Explain to students that this equals 59 degrees Fahrenheit. The formula for converting temperature between C° and F° is $F° = C \times 9/5 + 32$. Have students practice using the formula to express temperatures in Celsius and Fahrenheit.

Siberian Fact Attack

Facts and Opinions Locate and underline each of the sentences below in the article. Then mark each statement as FACT **(F)** or OPINION **(O)**. *Helpful Hints*: Facts can be proven. Opinions are personal judgments.

_____ 1. Lake Baikal is both beautiful and severe.

_____ 2. Twenty-seven islands lie within Lake Baikal.

_____ 3. Lake Baikal has a closed ecosystem and its own microclimate.

_____ 4. Lake Baikal is one of Earth's most amazing natural wonders.

_____ 5. Lake Baikal is shaped like a banana.

_____ 6. The ice on Lake Baikal becomes so thick that taxis and trucks can drive across it.

_____ 7. Many strange creatures thrive under these blue waters.

_____ 8. Nerpas are one of the world's three species of freshwater seals.

_____ 9. Lake Baikal is highly threatened by pollution.

_____ 10. In the darkest depths of the waters, a lake monster may lurk.

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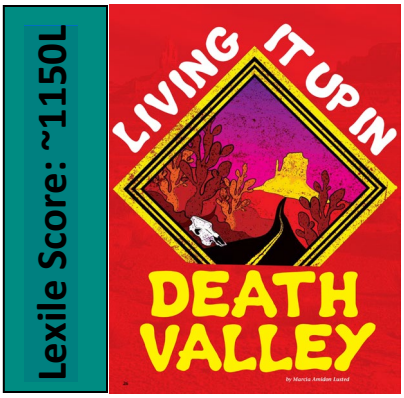
Living It Up in Death Valley

pp. 26–29, Expository Nonfiction

Death Valley may sound like the last place you'd want to visit...until you read this article! Students will learn about the fascinating geographical features that dot the landscape in this California national park.



RESOURCES

- Geographical Features: Down in the Valley

OBJECTIVES

- Students will learn about the landforms of California's Death Valley.
- Students will examine the geographical features of a region.
- Students will create a travel brochure for Death Valley National Park.

KEY VOCABULARY

- ***arid* (p. 27)** having very little or no rain
- ***playa* (p. 27)** the sandy, salty, or mud-caked flat floor of a desert basin
- ***seismic* (p. 28)** of, relating to, or caused by an earthquake

ENGAGE

Conversation Question: What are the effects of extreme temperatures?

Explain that a national park is an area of land that is owned and protected by a national government because of its natural beauty or its importance to history or science. Many national parks in the United States focus on the protection of land and wildlife. Ask students to share experiences visiting national parks. Ask how the geography and environment influenced their activities and sightings there. (Students may answer the same questions about a state park.) Show short videos about state parks from the internet.

INTRODUCE VOCABULARY

Review the key terms and definitions with the class. Guide students to notice that each word belongs in a different part of the alphabet. (Beginning: A–I, Middle: J–Q, End: R–Z) Have them write these headings at the top of their paper and put each word in the correct category. As a post-reading activity, have students add other theme-related words from the article to their list in the correct columns.

READ & DISCUSS

Preview the questions below. Then have students read the article independently. Reread the article aloud, pausing for discussion when answers to the questions below are revealed.

1. Describe the climate of Death Valley.
2. What would you find in Devil's Hole?
3. How do sand dunes form?
4. What is sandboarding?
5. What are the three things that salt flats need to form?
6. What created the rainbow rocks that are found at Artist's Palette?

CONCEPT/SKILL FOCUS: Geographical Features

INSTRUCT: The article presents readers with detailed information regarding the geographical characteristics of California's Death Valley. Remind students that when studying a new region, it is important to consider its environmental aspects. Distribute the *Geographical Features: Down in the Valley* worksheet. Tell students they will be using information from the article to describe each feature listed.

ASSESS: Have the class peer-review the worksheet in small groups.

EXTEND

Geography Have students design a travel brochure for Death Valley National Park. Students may fold a piece of paper into thirds or use a computer template to create the brochure. Using information from the article and other sources, students should include the following: location, climate, land features, plant/animal life, recreation, interesting facts. Students may choose to focus on a particular part of the park (Ubehebe Crater, The Racetrack, etc.). Encourage students to include maps, photos, and illustrations to make their brochures engaging.

Down in the Valley

Geographical Features Review the article to highlight information about each of the features listed below. Note this information in the chart. Include details about the formation and appearance of each feature.

Ubehebe Crater	The Racetrack
Death Valley	
Singing Sands	Devil's Hole