

Faces™

Forests

Forests are beautifully diverse ecosystems that support more than half of Earth's plant and animal species. This issue of FACES magazine teaches readers why protecting our forests is a fundamental step toward alleviating our current environmental crises. When the forests thrive, all living creatures benefit.

CONVERSATION QUESTION

What is the importance of Earth's forests?

TEACHING OBJECTIVES

- Students will learn about five species whose futures depend upon the trees.
- Students will learn about the Arashiyama Bamboo Grove in Japan.
- Students will learn about the characteristics of a kelp forest.
- Students will examine how human activities affect the environmental characteristics of places.
- Students will use a map to explore relationships between geographical locations.
- Students will examine cause-and-effect relationships.
- Students will represent mathematical information in various forms.
- Students will investigate indoor and outdoor soundscapes.
- Students will write a pledge to use less plastic and to reduce their carbon footprint.



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

- **Animals That Depend on the Forest** Expository Nonfiction
- **A Mystical Forest** Expository Nonfiction
- **The Kelp Forest!** Expository Nonfiction

Animals That Depend on the Forest

pp. 12–15, Expository Nonfiction

The future of many species on the earth depends upon the well-being of our forests. This article introduces readers to five different woodland animals that are struggling to survive the destructive actions of man.



RESOURCES

Humans Affect the Environment:
Woodland Woes

OBJECTIVES

- Students will learn about five species whose futures depend upon the trees.
- Students will examine how human activities affect the environmental characteristics of places.
- Students will represent mathematical information in various forms.

KEY VOCABULARY

- **woodland** (p. 13) land covered with trees and shrubs
- **lowland** (p. 14) an area where the land is at, near, or below the level of the sea
- **rainforests** (p. 15) tall, dense forests that receive a large amount of rain every year

ENGAGE

Conversation Question: What is the importance of Earth's forests?

Use online sources to take your class on a virtual expedition to observe the natural wonders of the rainforest. Have students notice the diversity of tree, plant, and animal species. Discuss the interdependence of such an environment and emphasize the importance of maintaining its balance.

INTRODUCE VOCABULARY

Review compound words with the class by explaining that all three of the Key Vocabulary terms consist of two words joined together to make a new word (**wood/land, low/land, rain/forests**). Post and discuss the three words and the given definitions. Ask volunteers to share some compound words that they know. As a post-reading activity, challenge students to identify other compound words located throughout this issue of FACES magazine.

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. Why are forests being cut down at an alarming rate, even though we know their importance?
2. How has research techniques improved in the last 100 years?
3. What do the orangutan and panda have in common?
4. How was the Saola discovered?
5. How can humans contribute to the propagation of species, rather than to their demise?

CONCEPT/SKILL FOCUS: Humans and Environment

INSTRUCT: Review with the class that since prehistoric times, it has been important for humans to make all efforts to live in harmony with the natural world. Human activities can be responsible for causing great damage to Earth's habitats, or for playing a critical role in fostering their abundance. Students will use the *Woodland Woes* worksheet to examine how the actions of humans can mindlessly affect the survival of a species.

ASSESS: After reviewing answers on the chart, collect the written paragraphs to assess the students' ability to express the issues.

EXTEND

Mathematics: The first sentence of the article states, "Eight out of ten animals that live on land make their homes in forests." Have students reflect that information in the following forms: as a fraction, as a percentage, and as a decimal. Then have the class discuss where the remaining land animals make their homes (grasslands, mountains, deserts, and aquatic ecosystems). Have them represent those animals (two out of ten) in the same numerical forms.

Woodland Woes

Humans Affect the Environment Refer to the article to gather information about the animals listed below and complete the chart. Answer the question in the THINK TANK in paragraph form.

Common Name	Scientific Name	Location	How do the animals support their forest habitat?	How are humans endangering their existence?
Tree Kangaroo				
Saola				
African Forest Elephant				

THINK TANK: Explain how human activities are depleting the environments of the animals above. What changes need to be made in order to ensure their survival?

A Mystical Forest

pp. 20–23, Expository Nonfiction

Winding paths and gentle rustling sounds greet visitors in Kyoto's Sagano Bamboo Forest. Readers will learn the importance of bamboo in the Japanese culture.



RESOURCES

Using Maps: Where in the World

OBJECTIVES

- Students will learn about the Arashiyama Bamboo Grove in Japan.
- Students will use a map to explore relationships between geographical locations.
- Students will investigate indoor and outdoor soundscapes.

KEY VOCABULARY

- **soundscape** (p. 21) a sound or combination of sounds that forms or arises from an immersive environment
- **canopy** (p. 23) the upper layer in a forest formed by mature tree crowns that include other biological organisms

ENGAGE

Conversation Question: What is the importance of Earth's forests?

Present the title of the article, "A Mystical Forest." Have students predict the content of the text as if it referred to a fictional place. (Ex: *The Forbidden Forest* in the Harry Potter series, the *Hundred Acre Wood* in Winnie-the-Pooh, etc.) Discuss the sights and sounds they might expect to read about. Then, ask the class to predict the content as if the title refers to a real place and ask how these elements would differ. Reveal that "A Mystical Forest," in this case, describes an existing forest in Japan...the Arashiyama Bamboo Grove.

INTRODUCE VOCABULARY

Post the key words and discuss the meanings of the terms. Then display the following prompts and have students discuss responses with a partner.

- Converse about the **soundscape** of your school library.
- Discuss other meanings for the word **canopy**.
- Use both words (**soundscape**, **canopy**) in a single sentence.

READ & DISCUSS

Pose the following questions to prompt meaningful discussion.

1. What does bamboo symbolize in Japanese myths and legends?
2. Why was bamboo a symbol of strength for warriors?
3. Describe the type of bamboo specific to the Arashiyama Bamboo Grove.
4. Why is it now difficult to find the peaceful connection to nature for which the grove was intended?
5. What are some of the problems caused by tourists in Arashiyama?

SKILL FOCUS: Cultural Perspectives

INSTRUCT: Guide students to acknowledge the importance of cardinal directions (N, S, E, W) and city and capital markings when trying to understand the location of various places on a map. Review map skills. Distribute the *Where in the World* worksheet. Students will be using the map and keys provided to complete the questions.

ASSESS: Instruct students to independently complete the worksheet, then review. Remediate in a small group, if necessary.

EXTEND

Language Arts: Revisit the definition of *soundscape* from the list of key vocabulary words. Arrange students in small groups and over the course of a week have them explore various indoor and outdoor soundscapes. (Examples: playground, supermarket, cafeteria, sporting event, etc.) Invite students to record the sounds, if possible, and create a comprehensive list of what they hear. Then have them write a descriptive paragraph detailing the soundscape. Students may wish to use the introductory paragraph of the article (p. 21) as a model for their writing.

Where in the World

Using Maps Use the map of Japan, the key, and the compass rose to answer the questions.



Part I: Use the map of Japan and the compass rose to provide the answers below.

1. Kobe is directly _____ of Osaka.
2. Fukuoka is _____ of Kagoshima.
3. The Sea of Japan is _____ of North Korea.
4. Akita is _____ of Sapporo.
5. China is _____ of Japan.

Part II: The questions below can be answered by using the map of Japan and the key.

6. The capital city of Japan is _____.
7. Two mountains in Japan are _____ and _____.
8. The name of the sea that borders Japan's western coastline is called _____.
9. Two cities located on Japan's eastern coastline are _____ and _____.
10. Place a red dot on the map to represent the city of Kyoto, home to Arashiyama Bamboo Grove. (Hint: It is located 30 miles northeast of Osaka.)

The Kelp Forest!

pp. 34–36, Expository Nonfiction

This article introduces readers to an underwater ecosystem teeming with a variety of plants and animals. The kelp forest's overwhelming beauty, as well as its fragility, is explored in this article.



RESOURCES

Cause and Effect: Kelp Crisis

OBJECTIVES

- Students will learn about the characteristics of a kelp forest.
- Students will examine cause-and-effect relationships.
- Students will write a pledge to use less plastic and reduce their carbon footprint.

KEY VOCABULARY

- **keystone species (p. 35)** a plant or animal species on which other species in an ecosystem largely depend, such that if it were removed, the ecosystem would change dramatically
- **apex predators (p. 35)** animals that sit at the top of the food chain and have no natural predators—typically large, powerful animals

ENGAGE

Conversation Question: What is the importance of Earth's forests?

Tell students that forests are one of the most common and most important kinds of ecosystems on Earth. Allot a few moments for students to share words and phrases that describe a forest. Next, ask the class if anyone has heard of an “underwater forest” and share that one example of such an ecosystem is a kelp forest. Ask: *Why might the kelp forests be in decline?* Present the article.

INTRODUCE VOCABULARY

Post and discuss the two key vocabulary terms. Have students answer the questions below and discuss responses.

1. Which of the following are **keystone species**? *bumblebees, woodpecker, beaver, dog* (**Answer:** bumblebee, woodpecker, beaver)
2. Which of the following animals are **apex predators**? *lion, fox, shark, crocodile, elephant, hyena* (**Answer:** lion, shark, crocodile)

Discuss examples of animals that are both a keystone species and an apex predator (wolves, otters, jaguars, etc.).

READ & DISCUSS

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

1. What is the importance of “kelp aquaculture”?
2. What does a kelp plant have instead of roots?
3. Why is bull kelp good for making fishing nets?
4. How do farmers use kelp?
5. What factors ultimately determine the fate of the kelp forests?

CONCEPT/SKILL FOCUS: Cause and Effect

INSTRUCT: Guide students to acknowledge that events in the natural world are often surrounded with causes and effects. Distribute the *Kelp Crisis* organizer and tell students that they will be recording the causes and effects of the events that have altered the balance of Earth's kelp forests. Have them reread the article with a partner to underline passages that will be helpful for this purpose.

ASSESS: The students may work in pairs to complete the organizer. Review the answers and invite students to share their responses.

EXTEND

Advocacy: Ask students what it means to make a pledge. (Define *pledge* as a serious binding promise to do, give, or refrain from doing something.) Have students reread the “Fun Facts” text box (p. 36), stating that using less plastic will reduce carbon footprints, helping the kelp forests survive. Then, engage the class in writing a pledge to reduce their plastic consumption. The pledge should identify the issue, state the promise, and have a signature. Instruct students to have someone at home make the pledge with them. Take the pledge for 30 days and then evaluate. Has the pledge become a habit they can continue?

Kelp Crisis

Cause and Effect Consult the article to identify and explain the cause of the events listed below, as well as the effects upon the ecosystem.

Cause	Event	Effect
	About a century ago, otters were hunted to near extinction.	
	Kelp forests return oxygen to the planet.	
	Kelp aquaculture is booming around the world.	
	Kelp forests are once again in jeopardy.	