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# CHAPTER 4

## RAIN FORESTS

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This chapter on rain forests will provide students with a common core of knowledge about tropical rain forests and the issues surrounding their preservation. By discussing key questions about rain forests, by reading an article presenting fundamental information about the topic, and by looking for answers to their own questions, students establish a shared body of knowledge about rain forests and their environmental effects on the world.

The topic is a broad one, and the introductory lesson outlined in the section on [Classroom Applications](#) aims not only to familiarize students with basic concepts and terminology related to rain forests, but also to alert learners to the importance of saving the rain forests. The activities presented in Chapter 4 may be used in one lesson or presented as part of a more extensive teaching unit in combination with the related [Internet Resources](#). After reading about, discussing, and exploring the topic further, students will be prepared to make their own judgments of how rain forests affect them and everyone in their world.



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### BACKGROUND INFORMATION

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The topic of rain forests is a controversial one that will attract students' attention. Do we save the rain forests and help solve many of the world's problems, or do we just let the rain forests continue to be burned and cut so people can have jobs and farms? Such questions stimulate discussion and the expression of personal opinions. This wide-reaching topic not only relates to economic and political issues, but it is also a global environmental issue that affects everyone on the planet.

The topic of rain forests cuts across all areas of the curriculum, and information about rain forests is available from a wide variety of sources including the Internet, books, newspaper and magazine articles, television programs, and documentary films. It is a broad topic which presents many opportunities for development of new vocabulary and language concepts.

Tropical rain forests are located in 33 different countries, most of them around the **equator**. In the past fifty years, more than half of these forests have disappeared. Experts say they are disappearing at the rate of more than 100 acres per minute. Almost everyone and everything in the world has something to gain from saving rain forests. Some areas that are most strongly affected by rain forests include:

#### Medicine

Scientists already know that more than 1,300 rain forest plants in the Amazon have some value as medicine. However, so far no more than 10 percent of all the plant and animal **species** in the world's rain forests have been studied for their possible medical benefits. Of the few that have been studied, less than one percent have been tested for their value as a cancer treatment.

#### Weather

Rain forests help control the world's climate. In rain forests, it rains a lot and is very hot. The heat makes the rainwater **evaporate** back into the air. About 50 percent of the rain in some rain forests comes from evaporation. The clouds that cover the rain forests around the equator reflect the sun and keep the rain forests from getting too hot. When rain forests are burned and cleared, the carbon is released. This process, called the "**greenhouse effect**," causes the weather to become much hotter.

## Soil Erosion

Rain forests help to prevent **soil erosion** and **water pollution**. The roots of the forest plants hold soil in place and help to absorb rainfall in areas that could be damaged by floods.

These are just a few of the important benefits of rain forests. These benefits are often overlooked, especially in developing countries where poor farmers often move into forestland because they have no other choice. Also, many governments support forest clearing to make room for mining, cattle, or export crops.

The loss of tropical forest areas affects many people: the forest people who lose their homes, the farmers whose lands are destroyed by soil erosion, the people whose water becomes polluted, the people who lose their homes in floods, and others. By saving the rain forests, we are saving a lot more than trees.



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## CLASSROOM APPLICATIONS

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### Preliminary Lesson Planning

#### ***Materials Preparation:***

- Duplicate the article “Some Questions and Answers about Rain Forests” provided in [Appendix A](#). Make enough copies to give one to each student.
- (Optional) Gather a selection of magazine photos of people, plants, and animals who live in tropical rain forests, or find a book or magazine with illustrations of tropical rain forest scenes.

#### ***Vocabulary Considerations:***

Before using the article “Some Questions and Answers about Rain Forests” in class, consider what vocabulary that students will need to know to carry out the lesson successfully. Determine which vocabulary items the students are already familiar with and which items will be new for them. Some important terms, and their definitions, are included in the [glossary](#).



## WARM-UP ACTIVITY (APPROXIMATELY 5 MINUTES)

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### **Purpose:**

- To stimulate students' interest in the topic of rain forests
- To activate students' background knowledge
- To introduce students to vocabulary that will help them successfully complete the lesson

### **Procedure:**

1. Write the phrase "Rain Forests" on the board, and ask for student volunteers to say what they know about rain forests. Make brief notes about their answers on the board.
2. (Optional) Show the students the tropical rain forest pictures you have gathered. Circulate the pictures among the class.
3. Tell the students they probably have a lot of questions about rain forests.
4. Ask for volunteers to ask one or two questions.
5. Have students work in groups of three or four and write down at least three questions they have about rain forests.
6. Ask students to put aside (but not destroy) the questions they have written.



## ACTIVITY #1 (APPROXIMATELY 20 MINUTES)

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### **Purpose:**

- To introduce some fundamental questions related to the topic of rain forests
- To allow students to anticipate the content of the reading
- To give students practice speaking and listening in a meaningful way
- To allow students to express and share their background knowledge about rain forests

### **Procedure:**

1. Write the following nine questions--in the exact same order they are listed below--on the board, or display the questions on an overhead projector. Tell the students that these questions are some of the ones that people most often ask about rain forests. Go over the questions with the students to make sure they understand them and there are no vocabulary problems.
  - How many plant and animal species live in the world's rain forests?
  - Why are they called "rain forests"?
  - Why are rain forests important?
  - Do people live in rain forests?
  - Are all rain forests located in hot, tropical areas?

- Why are the world's rain forests disappearing?
  - Once a rain forest has been destroyed, can it grow back?
  - How old are the world's rain forests?
  - Where are the **tropical** rain forests located?
2. Tell students to continue working in their groups. Ask them to discuss the questions and suggest possible answers for each.
  3. After students have discussed the questions for about 15 minutes, elicit possible answers from the class. At this stage, do not tell any students whether their answers are right or wrong. Encourage the students to guess without worrying whether their answers are correct. Elicit as many different responses as possible to each question.



## ACTIVITY #2 (APPROXIMATELY 20 MINUTES)

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### ***Purpose:***

- To expose students to some key concepts related to rain forests
- To give students the opportunity to read and use key vocabulary associated with rain forests
- To have students practice reading, speaking and listening in a meaningful way

### ***Procedure:***

1. Distribute the article "Some Questions and Answers about Rain Forests," giving one to each student.
2. Call the students' attention to the nine questions on the board: the same nine questions they discussed in Activity 1 (above). Explain that the article provides answers to the questions. Their task is to match each question to one of the answers in the article.
3. Students work individually, matching the questions with the answers and writing each question on the appropriate question line (headed "Q...") in the article.
4. When students have finished matching the questions with the answers, ask them to compare their answers with those of another student or students.
5. Volunteers take turns reading the questions aloud and suggesting which answer is the most appropriate match for each question. Ask students to justify their responses, using phrases or sentences from the answers in the article. (An answer key for this exercise can be found in [Appendix B](#).)



## COOL DOWN ACTIVITY (APPROXIMATELY 10 MINUTES)

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### **Purpose:**

- To conclude the lesson
- To give students an opportunity to discuss the relevance of the lesson

### **Procedure:**

1. Ask students to get together in the groups they were in at the beginning of the lesson. Ask them to look again at the questions they wrote in the warm-up activity (above). Their task is to determine what answers, if any, the article gives to their questions. The questions may be answered directly, by inference, or not at all.
2. Volunteer's read their group's questions to the class and report on answers provided by the article.
3. Ask the class the following questions, and allow individual volunteers to give their answers:
  - a. What did you learn from the article?
  - b. Do you believe saving rain forests is necessary and important? Why or why not?
  - c. What efforts, if any, should be made to save the world's rain forests?



## EXTENSIONS

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- Students' remaining questions for which no answers have been provided can form a topic for individual or group project work or library research.
- Students can use reference materials to research an animal, plant or tribe that lives in a rain forest area. They then put together a folder containing all their research notes and finished materials. Finished materials can consist of a variety of materials including newspaper or magazine articles, fictional stories, poems, cartoons, photographs, drawings, and any other relevant items.
- Students can choose a rain forest animal and collect information (habitat, food supply, special characteristics, enemies, etc.) about the animal using the Internet and/or printed sources. Each student writes and illustrates a report on his or her chosen animal.
- Students can create a rain forest dictionary. Assign each student or group of students a rain-forest term. Students must look up the definition of the word, use it in a sentence, and draw a picture to illustrate it.

Refer to the [Internet Resources](#) section for more information and lesson planning ideas.



## Some Questions and Answers About Rainforests

**Question 1:** \_\_\_\_\_

Answer: No. A rain forest is any forest where the heavy rainfall leads to thick **vegetation**. Tropical rain forests are located in hot, tropical areas, but there are also some cool rain forests, including one in southeast Alaska. When people say "Save the rain forests," they usually mean tropical rain forests: **jungles** that have hot, **humid** weather all year.

**Question 2:** \_\_\_\_\_

Answer: Tropical rain forests grow around the equator, between the **Tropic of Cancer** in the north and the **Tropic of Capricorn** in the south. The largest rain forests are in Brazil, the Democratic Republic of the Congo (formerly called Zaire), and Indonesia. There are other, smaller tropical rain forests in Southeast Asia, Hawaii and the Caribbean Islands.

**Question 3:** \_\_\_\_\_

Answer: Because they are wet! Tropical rain forests receive between 160 and 400 inches (400-1000 centimeters) of rain each year. Because rain forests are near the equator, their temperatures stay near 75-80 degrees Fahrenheit (24-27 degrees Celsius) all year-round.

**Question 4:** \_\_\_\_\_

Answer: Yes. There are about 14 million people in the world's rain forests. Some of them are **indigenous** people who have lived in tropical rain forests for thousands of years. Some have never seen **outsiders** before. As the forests are destroyed, the homes and culture of these people disappear. Many die as they catch modern diseases.

**Question 5:** \_\_\_\_\_

Answer: Rain forests have been **evolving** for 70 to 100 million years. They contain plants and animals that live nowhere else on earth. When a rain forest is destroyed, the plants and animals which have lived there for millions of years are also destroyed.

**Question 6:** \_\_\_\_\_

Answer: Most scientists say there are about one million different species of plants and animals in the rain forests. A typical 4-square mile area of rain forest contains up to 1,500 species of flowers, 750 species of trees, 400 of birds, 150 of butterflies, 125 of **mammals**, 100 or **reptiles**, and 50 of **amphibians**.

**Question 7:** \_\_\_\_\_

Answer: Rain forests are disappearing for many different reasons. In some countries, especially those of South America, rich landowners own most of the farmland. Poor farmers have to use tropical forestland to grow food for their children. Some farmers use forestland to grow cash crops, such as coffee or pineapples. Other activities that are destroying rain forests include mining, logging, farming and cattle ranching.

**Question 8:** \_\_\_\_\_

Answer: Rain forests are essential to everyone on earth. They help control the world's climate. Burning and clearing rain forests releases **carbon**, and this causes the weather to become much hotter. This is called the "greenhouse effect". Rain forests also reduce floods and help to prevent **droughts**, soil erosion, and **air pollution**. Rain forests are the world's most important source of new medicines. Many medicines, such as aspirin and heart disease treatments, come from rain forest plants. It is possible that a cure for **cancer** or **AIDS** will be found in a tropical rain forest someday.

**Question 9:** \_\_\_\_\_

Answer: A rain forest cannot be replaced. When a rain forest has been destroyed, it is gone forever. Once the **web** of **interdependence** has been broken, plants, and animals have no way to rebuild their complex communities.

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## APPENDIX B

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### Answer Key: Some Questions and Answers About Rainforests

**Q 1: Are all rain forests located in hot, tropical areas?**

**Q 2: Where are the tropical rain forests located?**

**Q 3: Why are they called "rain forests"?**

**Q 4: Do people live in rain forests?**

**Q 5: How old are rain forests?**

**Q 6: How many plant and animal species live in the world's rain forests?**

**Q 7: Why are the world's rain forests disappearing?**

**Q 8: Why are rain forests important?**

**Q 9: Once a rain forest has been destroyed, can it grow back?**

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