



POWELL CENTER FOR  
ECONOMIC LITERACY

*Lesson Plan*

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## Treating our Tropical Treasures with TLC

### Time Required

3 Weeks

### Economic Concepts

Choice

Scarcity

Externalities

### Overview

The tropical rain forests of the world are home to more than one half of all plant and animal species on the earth. Yet these delicate ecosystems cover only six percent of the earth's total land mass. In these hot, humid, ancient forests, which have grown undisturbed for millions of years, everything is interconnected. In one acre alone, there may be more than 250 species of trees. The trees not only provide food and shelter for the animals, they also keep soil from eroding in heavy rains. Trees depend on the animals to spread their seeds. Large predators, like the jaguar, control the number of seed-eaters. Trees also release huge supplies of oxygen and moisture into the air, thus forming rain clouds that benefit not only the rain forests but also the lands beyond.

In recent times people have exploited these tropical treasures, threatening the delicate balance. People are not treating the rain forests as a scarce resource. All of us, and our planet Earth, may suffer if we continue to treat the rain forests in a way that is not environment-friendly.

Before young students can devote their attention to the economic well-being of the rain forest, they must first learn as much as they can about its value. In this hands-on, activity-based exploration of tropical rain forests, students engage in a variety of experiences designed to help them understand that preserving rain forests makes good economic sense.



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### Objectives

- Students learn about the value of tropical rain forests.
- Students understand that rain forests are scarce resources.
- Students use economic reasoning to make decisions about using the rain forest's products in an environmentally-friendly way.
- Students learn that choices people make can greatly influence the environment.
- Students become aware that there are resolutions to the rain forest problems, within their reach.
- Students take action to help insure that the rain forests will not be destroyed.

### Materials and Handouts

- Library resources
- Art supplies
- Samples of rain forest products
- [Handout 1](#) -- Tropical Treasures
- [Handout 2](#) -- Tropical Treasures Postcards
- For miniature rainforest you will need: 2-liter plastic bottle, gravel, small pieces of charcoal, potting soil or compost, small plants, moss, small stones

### Web Resources

A search of internet resources will yield numerous sites. We have found the following especially useful:

<http://www.congogorillaforest.com/home.html> - Features a virtual tour of the Congo Gorilla Forest exhibit at the Bronx Zoo. A 6.5 acre replica of an African rain forest environment, it explains WHAT a rain forest is, HOW it works, WHICH animals make it their home, WHY it is threatened, and HOW people can help save it.

<http://www.eduweb.com/rain/rainfall.html> - A comparison between rainfall amounts in the Amazon and regions of the U.S.

<http://www.pbs.org/journeyintoamazonia/index.html> - Based on a 3-hour series by PBS with information about the flora and fauna of the Amazon basin. It features an interactive opportunity for students to be virtual explorers.

<http://www.zoomschool.com/subjects/rainforest/Animals.shtml> - Information on



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Rainforest animals with great pictures and downloadable information. Be sure to check out the link to the Rainforests located at the bottom of the page.

### **Teaching Activity**

During a three-week period, students engage in a variety of language arts, science, social studies, and fine arts activities designed to lead them to a deeper understanding of the importance of tropical rain forests. Using a variety of books, children's magazines, maps, globes, videos, and computer programs, the students immerse themselves in information concerning the rain forests. They share this information with their classmates and families.

In science, for example, students create a miniature rain forest in a plastic two-liter bottle and observe the water cycle firsthand. To do this, cut the empty bottle into thirds, discarding the middle third. Mix together gravel and small pieces of charcoal, covering the base of the plastic bottle with the mixture. Add a layer of potting soil or compost, mist or sprinkle a small amount of water over the mixture, and add a few small plants (leave space for growth). You can accent your terrarium with moss, or small stones, or perhaps a small piece of decaying wood. Place the top third of the bottle over the terrarium to create a dome. Lightly water your rain forest every few weeks. Your students will discover how soil erodes when it is not anchored by plant roots.

If possible, teachers should arrange for children to visit a local zoo or botanical garden to see some of the exotic plants and animals that they will learn about in the classroom. In some areas it may be possible for children to visit a replica of a tropical rain forest—e.g., the Amazonia area at the National Zoo, in Washington, D.C.

Teachers should ask each child to select a tropical rain forest plant or animal and become the class expert on it. After carefully researching his or her topic, each student should create a project—such as a diorama, poster, mobile, puppet, museum display, model, or skit—and present it to the class. As the research progresses, students will discover that many of their selected subjects are in danger of becoming extinct. Use [Handout 1](#) to help students summarize the information they have collected during their research.

As the class explores reasons for the destruction of the scarce resources of the rain forest, they will discover that nearly one half of all the world's rain forests have been cut down to obtain timber and to clear land for farming or mining. After the trees are cut down, the rain quickly washes the minerals out of the soil. Thus large areas become infertile.

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Scientists also believe the destruction of rain forests causes change in the balance of gases in the atmosphere. In addition, rain forest plants that are used to make prescription drugs are becoming more and more scarce.

As the discussion continues, students will think about some of the economic realities surrounding the problem of rain forest destruction:

*The choices people make can sometimes have unintended results.* People who cut down and burn the rain forests are not bad people. They do not purposely set out to cause plants and animals to become extinct. The problem is that much of the cost of losing the rainforest is borne by other people all over the world who have no voice in deciding whether to cut and burn. This is an example of a negative externality.

*The choices people make can have an influence on our environment.* Rain forest soil is poor. When the trees are burned or cut down, the area will quickly turn into a desert where nothing can grow. Global warming is increasing because of the burning of thousands of acres of rain forest each day.

*Governments may need to make laws to protect scarce resources.* Governments can outlaw burning and cutting down trees. They can offer incentives for people and companies to sell only those products that can be harvested without harming the rain forest. Products like cashews, brazil nuts, chocolate, pineapples, bananas, natural products for hair and body care, hand-woven hammocks and bags, chewing gum, and rubber products can be harvested without destroying the rain forests.

*People take better care of things they own.* When resources are perceived to be owned by no specific person or entity, they tend to be over-used or mis-used. This is referred to as the Tragedy of the Commons. There are many organizations working to purchase rain forest areas so they can be protected.

The more students learn about rain forests and their problems, the more interested they will become in taking action to save the rain forests. Students want to make a difference.

Here are some student ideas:

1. We can begin to reduce, reuse, and recycle. By using the earth's scarce resources wisely, we can set an example for people to respect the rain forests.
2. Do not buy endangered-animal products or products made from teak or mahogany. Only buy products that are made from renewable resources, such as

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- pineapple, cashews, chewing gum, and rubber products.
3. Write letters to local and national leaders reminding them of the importance of rain forests and asking them to support laws protecting the rain forests.
  4. Write for information from conservation groups. Find out about other ways to help save the rain forests.
  5. Students may also wish to create original postcards with rain forest scenes to send to conservation groups. Use [Handout 2](#) and address the following conservation groups to find out what else can be done to save the tropical treasures.

### **World Wildlife Fund**

1255 23rd Street, N.W.  
Washington, DC 20037

### **The Children's Rain Forest**

P. O. Box 936  
Lewiston, ME 04240

### **The Nature Conservancy**

1815 North Lynn Street  
Arlington, VA 22209

The class may also choose to raise money in support of one or more of these rain forest preservation groups. At the Collegiate School, we plan to form a classroom business by purchasing and raffling some books on the tropical rain forests. We will design and print rain forest fact sheets for people who purchase raffle tickets. The profits from this business will be used to purchase rain forest acreage.

### HANDOUT 1

Name: \_\_\_\_\_

## PLEASE TREAT OUR TROPICAL TREASURES WITH TENDER, LOVING CARE!

The tropical rain forests are very important to all of us. They are one of the earth's most scarce resources. What would happen if they all disappeared? Think about what you have read. Complete each sentence below.

If our tropical forests disappear, then ...

1. food \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. medicine \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. plants \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. animals \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. people \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**BONUS:** Why do you think that the rain forests are disappearing? Write your answer on the back of this page.

### HANDOUT 2

Name: \_\_\_\_\_

## CREATING TROPICAL TREASURE POSTCARDS

**Step one:** Organize your postcards. Decide what information you need to include in your message.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Step two:** Address each postcard carefully. Proofread each line.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Step three:** Create a slogan that will attract people's attention.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Step four:** Design the postcards. Use crayons, paint, markers, and colored pencils to create a rain forest design.

**Step five:** Put a stamp on each of your postcards and put them in the mailbox.