

Study Guide For Teachers

The Rainforest Chorus

...a program by Billy B.

presented by

Young Audiences
(866) 500-9265

www.yanj.org
www.yaep.org



ABOUT THE PROGRAM

Billy B. blends zany humor with solid science for a captivating and unforgettable exploration of the environment. Stalking panthers, toothy agoutis and rock-hard Brazil nuts play important roles as Billy B. brings the world's most exotic ecosystem to life. With catchy lyrics and energetic dances he creates images of the rainforests that the children can remember and repeat on their own. He plants a seed in a child's mind that can blossom into a lifetime of appreciation for the wonders of nature.

LEARNING GOALS

- To define the rainforest ecosystem and develop an understanding of its characteristics.
- To provide a basis for appreciating the value of this worldwide resource.
- To show students how the rainforest touches all of our lives in so many ways.
- To stimulate interest in the sciences.

BACKGROUND INFORMATION FOR STUDENTS

Tropical rainforests are located around the equator. The largest rainforests are in Brazil, Zaire and Indonesia. The Amazon rainforest in South America is the world's largest, covering an area about two-thirds the size of the continental United States. Rainforests receive 160 to 400 inches of rain each year. Most of New Jersey gets less than 50 inches a year. Also, because the rainforests are near the equator, temperatures stay near 75-80 degrees all year round.

The floor of a rainforest is a thin layer of rotting leaves. Above is an umbrella of dark green leaves. Very little sunlight gets through the thick mass of tree branches and leaves. Rainforests contain hundreds of species of plants and animals, many more than the forests of North America.

In all of nature, and especially in rainforests, plants and animals depend on each other for survival. For example, some insects can only survive in one type of tree, while some birds only eat one type of insect. If the tree is destroyed the insect will have nowhere to live. If the insects die, the birds who rely on them will starve.

People rely on rainforests for many reasons. Rainforests help control the climate of the whole planet. When rainforests are burned and cleared, carbon is released that causes the weather to be much hotter-this is the greenhouse effect. Many medicines, such as aspirin, heart disease treatment, and painkillers, come from plants that grow in rainforests. Wood, gold and oil have been removed from rainforests for human use, which has contributed to much of the destruction of tropical rainforests.

Additionally, native people have lived in rainforests for thousands of years. They live in harmony with the rainforest in a way which does not destroy the forest. Once a rainforest is destroyed, it cannot be replaced. Rainforests have been evolving for 70 to 100 million years. They contain plants and animals that live nowhere else on earth!

BEFORE THE PROGRAM

1. Introduce your class to the importance of rainforests in our everyday lives with a rainforest grab bag. Use a big brown paper shopping bag and fill it with items like a rubber eraser, a stick of chewing gum, a chocolate bar, a basket. Have the children guess what items might be in the bag. Have them research rainforest products and find one more they use everyday.

2. Locate the equator on the globe. Then locate your town with respect to the equator. Where would the sun appear from your perspective in the sky (given your latitude) in the summer? In the winter? What if we lived on the equator? Using a globe and a ball for the sun, see if you can replicate the earth and sun's relative positions during the seasons. Describe how the earth spins on its axis, revolves around the sun, and does so at an angle, causing the seasons. Have the students note the difference of the sun's location if living at the equator versus living at successively higher latitudes. Then go outdoors on a sunny day at noon and plot the students' shadows. Repeat this at different seasons of the year. Note the differences. Where would their shadows be if they lived on the equator? How does this affect climate?

AFTER THE PROGRAM

1. Discuss the water cycle. To view the processes of transpiration ("sweat" from plants) and condensation, try the following exercise. Place plastic bags somewhat tightly over two plants, a cactus and a leafy plant such as a fern. Check the bags after the plants have been in the sun during the day. What do you find on the inside of the bag? This demonstrates how plants give off water and contribute to the water cycle.

2. To demonstrate the concept of camouflage, try the following game, either outdoors or indoors. Take a collection of different colored toothpicks (25 of each color) and hide them in a given area. Students should be shown the boundaries and given a brief length of time in which to find as many toothpicks as possible. Afterwards, graph the results: how many of each color were found, and discuss why certain colors were more difficult to find. Discuss the purpose of camouflage. What about the very bright colored animals who are not camouflaged? Sometimes they mimic other animals that are unattractive to predators, and they gain their protection from predators by mimicry, (i.e. Some animals have evolved to mimic poisonous species, thus are protected from predators who avoid the poisonous models.)

3. See if you can discover which of your local migrating bird species winter in the rainforest.

4. Purchase some whole cane sugar and some tropical fruits such as mangoes, papaya, and star fruit to share with your students.

5. If we lose 3,000 acres of rainforest in an hour, how many do we lose in a minute? In a second? Can your students perform this math problem? Use an encyclopedia to find out which of our United States is close to 3,000 acres.

VOCABULARY WORDS

Ecosystem - a community (all living plants and animals) and the nonliving environment where they are found function together as an ecosystem.

Equator - an imaginary line around the center of the earth at a point halfway between the North and South Poles.

Evolution - the scientific theory that all living things came from fewer and simpler forms of life, and that these forms changed over millions of years into the many different forms that exist on earth today.

Watershed - a ridge of mountains or other high land, separating two different river systems that flow in different directions.

Water Cycle - on earth, water from the ocean and other bodies of water becomes heated from the sun, evaporates, rises as a gas (water vapor), is cooled in the atmosphere, condenses into clouds or fog, comes down as rain or snow onto the earth's surface and goes deep into ground water, re-supplies the water table, and finally flows back into bodies of water, to happen all over again.

Biodiversity - describes the variety of life forms (plant & animal) and their roles in the ecology, or workings, of an ecosystem. It is the key to the maintenance of the world as we know it.

Species - a group of plants or animals that have certain common features, which set them apart from others.

Extinction - when a certain group of animals or people no longer exist, having died out completely.

ARTIST INFORMATION

A veteran performer, Billy B. Brennan has performed for the National Geographic Society and the National Wildlife Federation, as well as at the White House, The Kennedy Center, the Smithsonian and in front of 200,000 people during the 20th National Earth Day. Billy B. has recorded several albums of original songs and has also written the script and music and performed for television, videos and film.

RESOURCES

www.ran.org, Rainforest Action Network, Website includes information for kids and teachers, including lesson plans and ideas for conservation.

www.rainforest-alliance.org, The Rainforest Alliance, also offers resources for teachers, students as well as timely information on conservation programs.

"Tropical Rainforest 24" x 18" poster & accompanying guide" from Sharon Audubon Center. Rt. 4, Box 171, Sharon, CT 06069. (Request on school letterhead, with \$12.) 203-364-0520

Teacher's Rainforest Packet from World Wildlife Fund, 1250 24th St. N.W. Washington. D.C. 20037. Supplies may be limited: call to assure adequate supply. 202-293-4800.