

Do Medicines Grow on Trees and Plants?

Summary

Learn about the use and preservation of the rainforest. Many plants there contain natural medicines that could save lives.

Time Frame

4 class periods of 45 minutes each

Group Size

Individual

Life Skills

Communication

Materials

A variety of leaves, flowers, seeds, stems, and roots; sharp cutting tool (for teacher use or assistance); cutting board; microscope and glass slides; a mini food processor; mini rolling pins (4'-6' lengths of 1' dowels); small plates; paper towels; paper to record data

Background for Teachers

The Tropical Rainforest is a place of wisdom, health, and life. Many plants in the rainforest contain natural medicines and some of them can save lives. The search is on to learn from native healers and discover which plants contain cures for diseases.

Intended Learning Outcomes

Make observations and measurements. Develop and use categories to classify observations. Use reference sources to obtain information. Collect and record data. Maintain a sense of curiosity about natural phenomena. Respect the contributions men and women have made to advancing science and technology. Recognize the personal relevance of science in daily life. Prepare reports describing the findings of investigations. Construct tables/charts/graphs to summarize data. Distinguish between science and technology.

Instructional Procedures

Read and discuss Internet articles and other articles relating to rainforests. [See Bibliography.] Have pictures available (included in 'web' articles). Play music that is conducive of a rainforest (i.e., nature music which includes rain, light wind, rustling of leaves, and bird sounds). Fill your room with posters, pictures, books, and magazines of rainforest scenes and animals. Have the students view videos concerning the rainforest, ie, wildlife, plants, products from the rainforest, and the current plight of the rainforest. Take a 'Virtual Field Trip'. When students enter the room, the lights should be off and they should hear a tape playing actual rainforest sounds. Instruct each of student to find a spot to sit (preferably not close to another student). Have them get comfortable, then close their eyes. Slowly guide them along the Amazon Trail, or down the Amazon River with descriptions of what they may see or hear. Have each student draw and color what he or she saw on the field trip. Display the drawings around the room. If you do not have access to any actual rainforest plants (which most of us don't), take a local field trip. Collect leaves, flowers, seeds, stems, and roots. (If it is winter and live plants are scarce, go to a nursery and collect a large variety of leaves and flowers.) Turn the

classroom into a simulated laboratory where plant research may occur. 1) Instruct students to sort their collection of plants into categories. Label the categories. 2) Students should make a cross section of their flower, seed, root, stem, and leaf samples with a sharp cutting tool. They should sketch what they see. 3) Instruct students to grind some of each variety of leaves, flowers, and seeds, etc. in a mini food processor. Mash some into more dense samples. Make note if there is any fluid, odor, or different colors which were extracted. Record findings. 4) Students should place samples and extractions on glass slides where they can be viewed through a microscope. They need not look for anything in particular; they should simply compare, classify, and record their findings. Once students have completed their investigations make a graph or chart of their findings and then use their graphs and/or charts to give a brief oral report to the class. Once students have completed their reports, discuss the importance of the location of both the plants and laboratory, the gathering of sample materials, the availability of plants for future use and production, the processing of samples, the data recording, and the administration of the research. Develop an appreciation for the contributions scientists have made. It takes tremendous organization and manpower to document all the work that is done on each species of plants in actual research. Discuss ancient and modern day healers who have learned how to utilize thousands of species of plants to maintain good health and to treat specific ailments. People have used medicinal plants for many years to treat things from snakebites to childbirth to weight loss. Many of our commonly used pharmaceuticals are derived from tropical plants, such as quinine for malaria and local anesthetics. The discovery of a medicine made from the rainforest plant Madagascar Periwinkle (which is nearing extinction in the wild) has increased the survival rate in children with leukemia from 20 to 80. Discuss the difference between science and technology. Science is the pursuit of knowledge and understanding; technology is the application of knowledge for a practical purpose. List how technology can create a friendly link with our rainforests. What can we do to protect our rainforests? How can the use of technology in the future not only help save our rainforests, but ourselves and our health? Discuss the benefits of using our natural resources wisely.

Extensions

Discuss some of the following ideas: Who knows what we might discover next? Perhaps we will find a cure for cancer, AIDS, or the common cold. Careers are abundant. There is a need for good people who are willing to spend their time and energy doing such things as seeking funding for research projects, studying cells, searching the rainforests. Biologists, doctors, pharmacists, and laboratory researchers are needed. Only one and one half percent of the species in the Amazon Rainforest have been studied by scientists. More than one hundred prescription drugs on the market today are plant-based but only 95 species are responsible for these medical wonders. The opportunities are endless. Do some research into careers related to rainforest research.

Assessment Plan

Have the students do a creative writing project. They could put themselves in a career that was discussed. Using the knowledge they obtained during this unit regarding the saving of rainforests and the development of life saving drugs from plants, they could write a short story. Have the students look up additional internet sites and share the information with the rest of the class. Have the students create their own wall mural. They can do research, collaborate ideas, and learn to cooperate in the group project.

Bibliography

John Weeks MD, Suzanne Kohl FNP Costa Rica Medicinal Plant Project (,) Wiseman, Sandy The Tropical Rainforest (,) Sternagle, Wendy Rainforest (,) Jackson, Carrie Examining Plants (,) Wooten, Kobra How are Leaves Alike and Different (,)

Authors

[Paula Barney](#)