



# ZEST

## (ZOO EXPERIENCES FOR STUDENTS AND TEACHERS) TROPICAL RAIN FOREST (K-12<sup>TH</sup> GRADES)

### *Pre-visit Information*

The *Tropical Rain Forest* program consists of a short classroom program followed by an on-grounds exploration of the zoo's Tropical Rain Forest exhibit and is designed to support Washington State Science Standards.

- Your *Tropical Rain Forest* program will last for approximately one hour.
- Please arrive at the zoo dressed appropriately to be outdoors, regardless of the weather.
- Please have your students eat either a snack or their lunches prior to the program time.
- Please refrain from visiting the Tropical Rain Forest bioclimatic zone prior to your program.
- We rely on chaperones to help the students in this program—please request that chaperones do not bring younger siblings and that they turn their cell phones off during the program time.
- Your zoo docent will meet you under the large tree in front of the Education Center in the South Entry Plaza and will be holding a sign with your program name.

The first part of the program will take place in the zoo's Education Center classroom and includes an interactive introduction to tropical rain forest concepts and vocabulary. Following the classroom portion, your docents will take your class on a guided exploration of the Tropical Rain Forest exhibit. After a wrap up discussion, your group will be free to explore other areas of the zoo.

To help you and your students get the most out of the zoo program, we have put together an overview of the program and a list of key vocabulary words used by our docents. Knowledge and understanding of these key ideas will enhance your students' zoo visit.

Your help in preparing both the students and the chaperones for this program experience will greatly enhance your students' learning! For more information and activities focusing on the animals and plants in Woodland Park Zoo's Tropical Rain Forest bioclimatic zone, a Tropical Rain Forest teacher packet can be downloaded at [www.zoo.org/education/teacher-packets](http://www.zoo.org/education/teacher-packets)

## PROGRAM OVERVIEW

This program will deepen students' understanding of tropical rain forests, biodiversity in tropical rain forests, why tropical rain forests are important and how people can use forest resources sustainably.

## CONCEPTS

- Tropical forests are composed of four layers of vegetation: forest floor, understory, canopy and emergent layer.
- Tropical rain forests receive a minimum of 80 inches of rainfall per year and have fairly constant, high temperatures year round.
- The layered structure of tropical rain forests (structural diversity) supports a diversity of plant and animal species (biological diversity).
- Different animals live in or use different layers of the tropical rain forest.
- Tropical rain forests provide products and ecosystem services that benefit people.

## VOCABULARY

**\*Adaptation:** Any change in the structure or functioning of an organism that is favored by natural selection and makes the organism better suited to its environment

**\*Biodiversity:** the different kinds of organisms in a specific ecosystem or on the planet as a whole

**Camouflage:** the natural coloring or patterning of an animal that allows it to blend in with its surroundings

**Canopy:** a forest layer in an ecosystem formed by tree crowns (tops) vines and other plant materials that typically shade the lower layers in the forest

**\*Decomposers:** organisms that consume the remains of dead organisms and, in doing so, break down the tissues into simpler forms of matter that can be used as nutrients for other living organisms

**\*Ecosystem:** a natural unit consisting of all plants, animals, and microorganisms (biotic factors) in an area functioning together with all of the nonliving physical (abiotic) factors of the environment.

**Emergent layer:** the highest layer of vegetation in a tropical rain forests consisting of individual tall trees that emerge from and stick out above the canopy layer

**Energy:** the capacity to do work (includes heat energy)

**Flower:** the reproductive structures of a flowering plant that produce the seed

**Forest:** a large continuous stand of trees

**Forest floor:** the lowest above-ground layer of a forest ecosystem; composed of small herbs, shrubs and decaying plant matter

**\*Nutrients:** a food or chemicals that an organism needs to live and grow, or a substance used in an organism's metabolism that must be taken in from its environment

**Oxygen:** an atmospheric gas necessary for the process of aerobic respiration

**Predator:** an animal that obtains food by killing and eating other animals

**Prey:** an animal that is killed and eaten by other animals

**Root:** the part of a plant that extends underground and serves to uptake water and minerals from the soil

**Soil:** soil is the upper layer of earth in which plants can grow. It is composed of inorganic matter (rocks that disintegrate into sand, silt, and clay), organic matter (decomposing plant and animal remains and manure), water, air and organisms.

**\*Sustainable development:** policies that enable people to obtain the resources they need today without limiting the ability of future generations to meet their own needs

**Understory:** the forest layer above the forest floor and below the canopy; consists of large shrubs and small or young trees

## PRE- AND POST-ASSESSMENT

### TROPICAL RAIN FOREST DRAWING

This drawing activity will provide you with an understanding of your students' current knowledge of tropical rain forest habitats. In order to encourage their creativity and expression, remind your students that this exercise is not a test, but is a way of seeing what they already know and what they haven't yet learned.

Hand out a blank piece of paper to each student and instruct your students to put their names and the date on the paper. Next, ask your students to draw a picture of a tropical rain forest, including as many plants and animals as they wish. After your students have participated in the *Tropical Rain Forest* program at the zoo, repeat the drawing activity. Compare each student's work from before and after the zoo program, looking for any components of their drawings that relate to concepts or information provided during the program.

**QUESTIONS ABOUT YOUR ZEST: TROPICAL RAIN FOREST PROGRAM?  
PLEASE CALL 206-548-2424.**

\* Vocabulary words marked with an asterisk are included in the Washington State Science Standards.