Level 2 Grades 2-3

Booklet Objectives

Students will:

•Comprehend the relationship between respiration, climate, and other factors necessary for the support of life on Earth and trees.

•Utilize a global map to cite areas where a variety of animals depend upon trees for shelter.

•Identify the major components of a tree and their function.

•Relate trees to items used in their daily lives.

•Become aware of steps that can be taken to improve and protect the environment that trees depend upon.

Next Generation Science Standards

2.Structure and Properties of Matter

2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. [Clarification Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.]

2.*Interdependent Relationships in Ecosystems*

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

3.Inheritance and Variation of Traits: Life Cycles and Traits

3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.

3.Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms

3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

Vocabulary Words

bark—the tough exterior covering of a woody root or stem.

carbon dioxide—a colorless, odorless gas produced by burning carbon and organic compounds and by respiration. It is naturally present in air (about 0.03 percent) and is absorbed by plants in photosynthesis.

crown—of a tree consists of the mass of foliage and branches growing outward from the trunk of the tree.

deforestation—the action or process of clearing of forests.

nutrient—a substance that provides nourishment essential for growth and the maintenance of life.

organic—of, relating to, or derived from living matter.

oxygen—a colorless, odorless reactive gas, the chemical element of atomic number 8 and the life-supporting component of the air.

rodent—a gnawing mammal of an order that includes rats, mice, squirrels, hamsters, porcupines, and their relatives, distinguished by strong constantly growing incisors and no canine teeth.

Make it Rain!

Level 2 Grade 2-3 Activity

Activity Objectives
Students will:
•Relate the water cycle process to precipitation.
•Comprehend the role of trees in the water cycle.
•Realize the dependence of food and water sources upon trees.

Materials
•paper plate for each student
•glue, scissors and crayons/markers for each student
•"Make it Rain!" student worksheet (see pg. 3).

Discussion
Discuss the water cycle with a focus on transpiration, evaporation and precipitation:
1.Transpiration occurs when water moves from the roots of trees and other plants to the tiny pores on the underside of their leaves. The water changes from a liquid into vapor and floats into the atmosphere.
°Relate transpiration to how the students lose moisture through the pores in their skin when they sweat.
2. Evaporation occurs when heat from the sun causes water from the earth to change from a liquid into a vapor. The gas vapor floats up into the atmosphere.
°Relate evaporation to how the sweat on their skin dries.
3. Precipitation occurs when the vapor forms clouds of water droplets. When the droplets get heavy enough they fall back to earth in the form of rain, sleet, snow or hail.
°Visit http://water.usgs.gov/edu/watercycle-kids-beg.html for more information.

Finish with a discussion on what life would be like without rain and how it would affect our food supply.

Activity
1. Distribute copies of the "Make it Rain" worksheet as well as a paper plate to each student. Instruct students to color half of the paper plate blue to represent the sky and half of it brown to represent the earth's soil.
2. Instruct the students to color the illustrations, cut them out and glue them onto the paper plate to form a picture of the water cycle.
3. After the illustrations are glued onto the plate instruct the students to add leaves and roots to their trees.
4. As the last step, discuss the flow of the water cycle and instruct students to draw arrows on their pictures to illustrate the movement of water through the cycle.

Name _____