

Where in the World Are the Forests?

Standards Addressed

Environmental Education Standard:
A. Questioning and Analysis: A.4.2 and A.4.3.

Key Concepts/Content

- ✳ To increase the students' global awareness of the location and importance of forests.
- ✳ To use map skills locating and labeling the temperate deciduous forests, temperate rain forests, tropical rain forests, taiga (boreal) forests, and mountains.

Teacher Background

Biomes or bioclimatic zones describe regions around the world where organisms have adapted similarly in response to the climate, soils, landform, and geology.

Recognized terrestrial biomes include:

Desert: In general, deserts have high temperatures and annual precipitation less than 50 cm per year. Deserts cover about 20% of the earth's surface. In the United States deserts are found in Arizona, California, Utah, and New Mexico. Deserts are also found in Africa (Sahara), the middle east (Saudi Arabia *et al.*), China, and Australia. Vegetation is adapted to conserve water and endure high temperatures. This is the land of the cactus, sagebrush, rattlesnake, and burrowing animals.

Steppe or grassland: Grasslands are dominated by grasses rather than shrubs or trees. The Great Plains and prairies in the United States generally cover from Illinois west to the Rocky Mountains and north from Texas into Canada. Average annual rainfall is 20-35 inches. This is the land of the bison and prong-horned antelope.

Tundra: The coldest of all biomes meaning treeless plain. The tundra circles the northern hemisphere from the Arctic Ocean to the coniferous forests of the taiga. Precipitation is limited to less than 10 inches annually. This is the land of the caribou, lemming, arctic fox, wolves, and polar bears. Reptiles and amphibians are few because of the cold.

Taiga (Boreal) forest: Like the tundra, the taiga or boreal forest circles the northern hemisphere south of the tundra. This is the home of the spruce and fir coniferous evergreen forests. It is an area of harsh winters and the plants and animals are adapted to a short growing season. Many animals migrate to the boreal forest in spring and return south in the fall.

Temperate deciduous forests: Wisconsin is in the heart of the temperate deciduous (broadleaf) forest. This is the great hardwood forest containing maple, birch, aspen, oak of the **eastern** United States and Canada. Summers are warm and winters are cold with snowfall. These are the forests that give the blaze of red, gold, and brown color in the fall. Many of the birds migrate to warmer temperatures in the southern United States and South America. Black bears, wolves, deer, and an abundance of waterfowl can be found in this biome.

Mountain forests: In the **western** United States, Mexico, and Canada the forest is also temperate but consists of conifers such as pines, larch, and Douglas-fir. These forests are found in the Rocky Mountains, the Cascades of the northwest, the Sierra Nevada of California, and the dry forests of the southwest and Mexico. This is the land of elk, grizzly bear, trout, and most of our national forests and parks. Note: On the internet site for the Temperate Forest Foundation forest - zones, the map does not break out the mountain forests as a separate zone. Please make sure your students understand that the western forests are mostly evergreen and coniferous while the eastern forest is mostly broadleaf and deciduous.

Temperate rain forests: In North America, a thin sliver of land along the coastal range from California to the panhandle of Alaska is home to a temperate rain forest. This is the land of the redwood, Sitka spruce and coastal streams

filled with steelhead and salmon. Fog is persistent throughout the year and rainfall exceeds 100 inches per year. The temperature is always cool because of the marine influence.

Tropical rain forests: From the Yucatan peninsula in Mexico through Panama lies the central American rain forest. This forest is evergreen and receives moisture throughout the year. The canopy of the forest is multilayered and the soils lack nutrients and organic matter because of rapid decomposition. The tropical rainforest also receives over 100 inches of rainfall each year but the temperature is always hot because of the proximity to the equator.

Please have your students visit the Temperate Forest Foundation for a simple yet comprehensive map of the world's forested regions. You can find the website at <http://www.forestinfor.org/>

Select: Cool Facts

Then select: Forest Zones

The nonforested land on the map will be grey/white in color and tundra is the northern-most biome. The grey/white area of northern Africa is the Sahara desert. The Saudi Arabian peninsula is also desert. The rest of the grey/white areas are smaller deserts and the Great Plains in North America or the steppe in central Asia.

A key point is much of the inhabited world is forested and the same type of forest can and does occur all around the Earth.

Ask your students to compare biomes for climate, plants, animals, or physical geography.

Getting Ready

Assign students to work in cooperative groups and divide the students into groups as needed for the areas of the work being investigated in the activity. You must decide if this activity should be limited to a part of the world such as North America or a specific continent, or perhaps even to

just the state of Wisconsin. Be sure to provide the type of maps your students will need for this activity.

The activity is written so your students can investigate the locations of forests using the entire world. You will need to modify the procedures if you are going to have your students work with a more specific map.

Materials Needed

- ✦ Activity sheet of North America
- ✦ Colored pencils or crayons
- ✦ Descriptions of the forests

1. Students will be assigned to groups that will research the location of forests on their assigned continent.
2. They will create a map that shows the location of the forests on their continent. They may use the outline maps that you have provided or create the map on large posterboard.
3. Groups will report back to the class the location and types of forests found. The maps can be displayed together to create a view of the world. (You might want to have the students develop a large-scale map for general classroom use and display.)
4. Students will complete individual world maps that include the location of the temperate deciduous forest, temperate rain forests, tropical rain forests, taiga (boreal forests), and mountains.

Evidence of Student Understanding

Develop a rubric with the students for assessing the world maps they will each complete.

Activity ASheet

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