



## National Science Education Standards

\* Standard C: *Life Sciences* — Structure and function in living systems.

\* Standard C: *Life Sciences* — Populations and ecosystems.

\* Standard F: *Science in Personal and Social Perspectives* — Populations, resources, and environments.



## OVERVIEW

Through a cooperative game, students will locate in a world map some countries that are known for their forest resources. They will also learn some characteristics of human groups who live and depend solely on tropical forests.

## OBJECTIVES

Students will:

1. Locate tropical countries in a world map.
2. Explore the direct relationship that poor communities have with forests.
3. Learn distinctive aspects of some cultures found in the tropics.
4. Analyze the importance of tropical forests for the world community.

## SUBJECTS

Social Studies, Geography, Science, English, Spanish

## VOCABULARY

Forage, folklore, mythology

## TIME

45 minutes

## MATERIALS

- . Annexes 1-4
- . Puzzles, cultural information cards (included), world map.

## BACKGROUND

An estimated 300 million people **live in** the today's world **forests**. Some are sedentary farmers that live permanently in the same place, others are collectors and nomadic hunters that do not have a permanent residence, and others are semi-nomadic farmers who cultivate the land for short periods of time and then move on. In Latin America, Africa, Asia, and Australia, whole societies have lived exclusively in forests and grasslands for centuries, adopting various modes of satisfying their needs through a diverse combination of hunting, farming and gathering activities. Their systems have one thing in common: it is lasting as long as there is low population density and cultural stability. Many of these groups live in poverty conditions and are in danger of disappearing from the face of the Earth due to the impact modern societies have on them.

Demographic pressure diminishes the land available for farming and the cultural impact has altered their values; therefore modifying their vision of, and the relationship with the forest.

Trees help **feed the world**. Food proceeding from forests and orchards are consumed everywhere; these products are the main staple of the world's poor. The loss of forests and the destruction of natural habitats are undermining the supply of food coming from the forest. Among the main food items that come from the forest are leaves, seeds, fruits, roots, tubercle, and a myriad of animals. These food items usually provide the indispensable dietetic variety and the nutritional supplements that directly relate to benefits in people's physical health.

Wood is the principal **energy source** of poor populations. More than 2 billion people

depend on wood and charcoal for cooking and preserving food. Human health frequently depends on its accessibility. Wood is necessary for the proper boiling of water, which is indispensable for avoiding some types of illnesses such as diarrhea, caused mainly by waterborne bacteria and viruses. These bacteria and viruses annually kill four million children under the age of five. Cooking food adequately avoids illnesses, and often, food poisoning. As wood becomes scarce, people eat fewer cooked foods or cut down on cooking time. In addition, wood is necessary for many commercial activities such as tea drying, tobacco curing, and brick production.

At present, the vast majority of the world's population depends on the great variety of **medicines** that are obtained from trees and plants. More than 6,000 species of plants are used for medicinal purposes, from the treatment of stomachaches and diarrhea to remedies for fungus infections to tonic preparations for heart ailments. Between 75-90% of the inhabitants of poor countries depend solely on natural remedies for their ailments. On the other hand, 25% of the active ingredients in prescription drugs come from medicinal plants.

Trees are a **forage** source. There are between 30 to 40 million ranchers and shepherds in the world today that tend over 4 billion cattle, goats and sheep. These people depend totally on their animals, and the loss of grasslands threatens their livelihood and sometimes even their existence. Trees help protect the grazing lands, while at the same time they provide forage and contribute towards a nutritious diet for the cattle.

Throughout history, trees have figured prominently in **religion, folklore and mythology**. Myths and legends describe the tree as a gift to



*Background, continued...*

man and beasts from God or gods, as a tie between heaven and earth, or as a resting-place for the soul. The tree, as creator of life, represents fertility in various symbols, male as well as female. Wooden masks that symbolize gods or important spirits are utilized in religious rites around the world. All statutes, religious and musical instruments are usually made out of wood. Traditionally, trees have been protected in small scared forests, conserving them for the benefit of the community.

Trees are the backbone of **large and small industries** around the world, providing employment to millions of people. The income generated from trees and forest products are vital to poor populations, especially those that have little or no land of their own. Often this represents the only source of income in cash, which frequently is the only way to buy food.

Trees help **protect Earth's environment**. They are the essential element of the most important ecosystems for humanity: those that provide us with our food. We can use them to increase the fertility of the soil, increase agricultural production, and to assure a better quality of life to all the populations of the world.

The tree was, is, and always will be, the **foundation of life**.



## BEFORE THE ACTIVITY

Organize the pieces of each puzzle as per instructions in Annex #2. If you need to make your own puzzle, use the map on Annex #3



## ACTIVITY

**1.** Divide the class into groups of four students. Give each group the puzzle pieces with the map facing down. Read the following instructions to the group.

- The game is played in complete silence.
- No body language is allowed.
- Each person makes one rectangle.
- This is a “giving” game.
- You may give your pieces to another player, but you may not take, or ask for a piece.
- Pieces are given one at a time.
- The puzzle pieces must stay with the map facing down.
- The game is over when all the groups have finished their puzzles.

**2.** When all the groups have finished their puzzles, establish a dialogue about what they have just experienced. You could use the following questions to start the discussion: How did you feel? Were you anxious? What is the purpose of the exercise? What do you understand by cooperation? What is the value of cooperation?

**3.** Tell the group to turn the puzzles over so they can work with the world map that is on the backside. This map has circled numbers that indicate some tropical areas around the globe.

**4.** Hand out the cultural information cards (Annex 4) to each group. Each student of the group should take two cards and read the information to the rest of the group. The students will then locate each cultural group in the map. Each culture corresponds to a number in the map. The students will also decide, as a group, which one of the cultures they found most interesting.

**5.** Check the student's answers (Annex 1), and foment a discussion based on the following questions:

- Why did they find that particular culture interesting?
- What use do they have for the forest?
- What is the importance of the forest for these people?
- What is the predominant vision of the forest?
- Do we, the modern world, have any responsibility towards these groups?

**6.** With the students, elaborate forest conservation measures that could help the groups that live in extreme poverty so as to better their quality of life, without affecting their identity as a people.

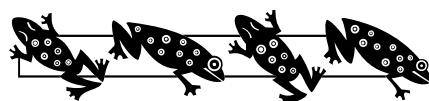
## EXTENSIONS

Assign additional information search of the different cultural groups that live in the tropical forests. Have a round table, and have each student represent a member of the cultural group studied. Talk about the daily life of the group, and in particular, their relationship with the forest.

The supplementary reading “Deforestación y Crisis de Pobreza” can be assigned and discussed in class.

## ASSESSMENT

A brief essay should be written about the following: “The important thing is not what happens to me, nor what happens to you; the important thing is what happens to everybody because we all are a part of that great everything that we call planet”.



## THE TREE OF LIFE – ANNEX #1

Content of information cards on cultural groups that live in tropical forests

### **Ubangui (#1)**

In the Central African Republic, the Ubangui plant a tree for each newborn. If it is a girl, a fast growing, plentiful fruit-bearing tree is planted. If the tree is not healthy, the shaman is called upon to protect the child, and if the child is ill, it is taken to the tree for a cure. When the tree begins to bear fruit, the child is ready for marriage. When someone dies, the person's spirit moves into the tree that once was planted for her/him.

### **Asmat (#2)**

According to Asmat mythology, during the creation of the founders of the Saowa and Erna regions of New Guinea, one of its heroes decided to populate the Samat region. He walked alongside the river building communal houses and filling their interior with wooden figurines, male and female. He then beat a ceremonial drum and gave them life. To this day, this warrior tribe constructs their communal homes atop wooden posts that they cover with metal sheeting. With their doors and windows facing the sea, all these houses on stilts together look like a group of spiders ready to pounce upon their prey. Other than being known for the ancient custom of head hunting of enemy warriors, the Asmat are characterized today for their hospitality; those who are not are called "person with a rotten hand".

### **Mbotogotes (#3)**

The Mbotogotes, also known as the Namba, live in Malekula, the second largest island in size of the New Hebrides archipelago. Their clothing is scarce since the climate is very hot. Men wear a belt made out of tree bark and cover their sexual organs with a banana leaf. Women wear skirts of woven fibers. The walls of their round huts are made out of wood and fern trunks, which are then roofed with palm fronds. The back of the house is reserved for pigs. The pigs, similar to wild boars, are very important socially; they are used to honor the dead and to secure a wife. This tribe is known for their funerary rites, which sometimes last up to a year. The heads of the deceased are reconstructed using clay, spider webs, bamboo, and vegetable fibers.

### **Kraho (#4)**

Near the Tocantis River in Brasilia, in rectangular huts covered with straw, live the Kraho, one of the many tribes of Central Brazil. Trunk races are their daily sport. Two teams of young men get together outside the village and each team cuts down a Buriti palm trunk weighing at least thirty pounds. One of the men starts the race with the trunk on his shoulders and later passes it to another participant in a relay towards the village. The men then run around the village "square". The villagers watch, and applaud the winner. Traditionally, to look attractive and romantic, the men pierce their ears and place ever larger pieces of their arrows in the hole, until achieving the diameter of a cup; the larger the circumference, the better the chances of impressing the girls.

### **Tasaday (#5)**

It was not until 1971 that the Philippine government became aware of the Tasaday that live deep in the Philippine jungle. With a population of barely 26 people, this group lives in caves, collects fruit, fish, and hunt. Their lifestyle is very much like the humans in the Stone Age, since their instruments are made out of stone, and they do not know agriculture. They do not have words for "guns", "war", "enemy" nor "hate". They live together in harmony with nature. The forest is their entire world.

### **Toda (#6)**

Between the Nilgiri mountains of India live the social caste of buffalo breeders, the Toda. According to Hindu custom, each person is born within a caste or social class, and must fulfill the duties that are required by that class. These people live in rectangular wood and straw huts. Towards the west of the village is the sacred temple, site where the cattle is milked. This task is only done by the priest. The buffalo are considered sacred; therefore, they are not used for food. Their milk, however, is used in many ways, for drinking, for making cheese and butter, and even for adding sheen to the curls of the women's hairdos.

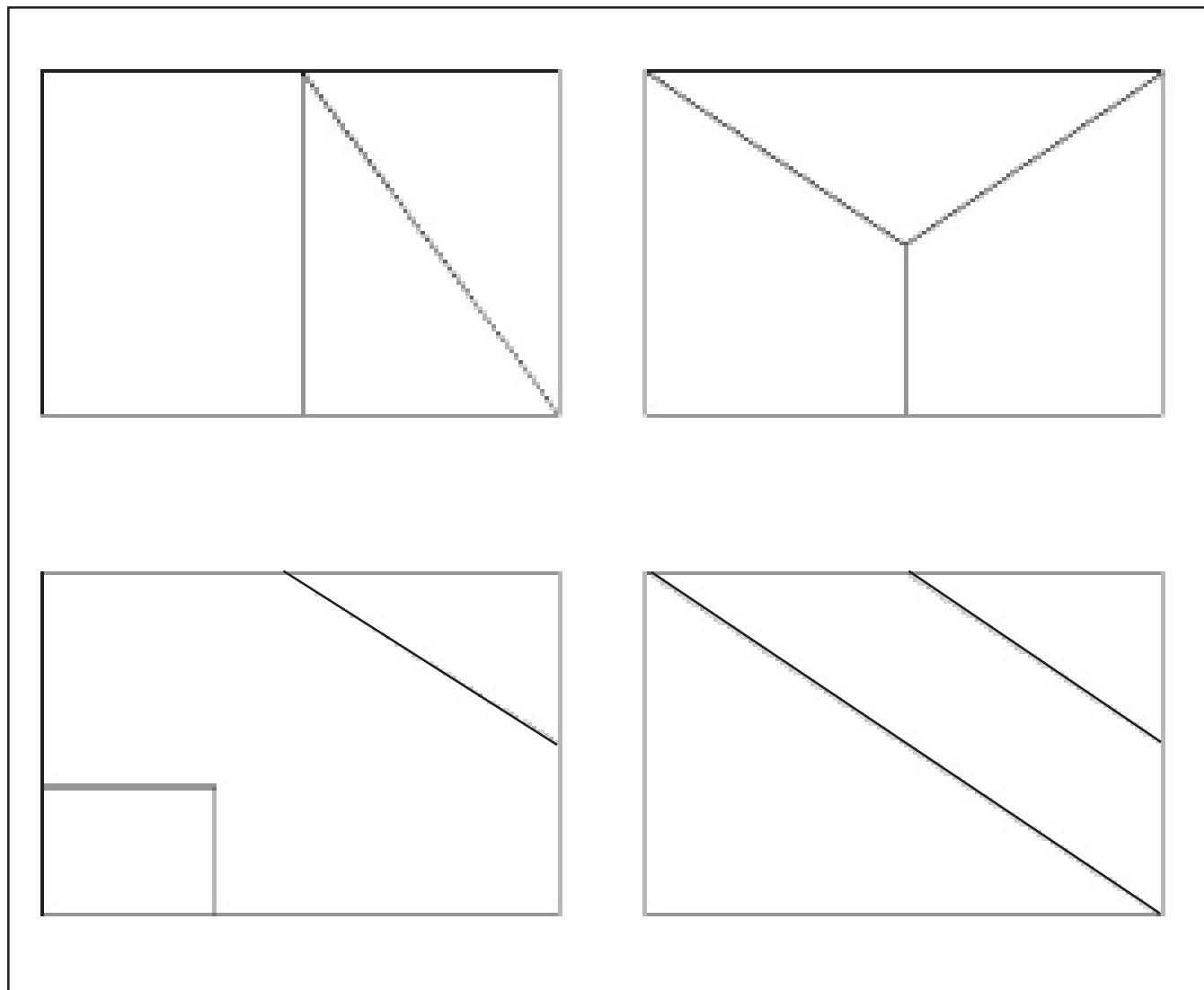
### **Australian Aborigines (#7)**

Australian aborigines are a varied group; they live in different climates and settings, and their lifestyles, language and legends also differ. Those living in the north are nomads that hunt and fish. For them the land's characteristics denote sacred sites. These reference points have been transmitted through generations in the form of songs that signal the way along thousands of kilometers of desert, and point to hidden water sources. Their trees are protected in small sacred forests that are used on special occasions for religious purposes and as a meeting place for the village elders. All living things are connected and have a special meaning for the tribe. For this reason, they make small statues of animals and plants.

### **Fang (#8)**

Initiation ceremonies of the Fang in Cameroon, Africa, are always celebrated at the base of a large tree, which represents the forest in which God is found. According to legend, their god Nzame initially placed man in a forest, but man in turn became proud and did not worship him. Irked, Nzame burnt the land and made a second man, but this time he made him mortal. Since man needed company, Nzame told him to make himself a woman out of wood, and from a tree she was begotten.

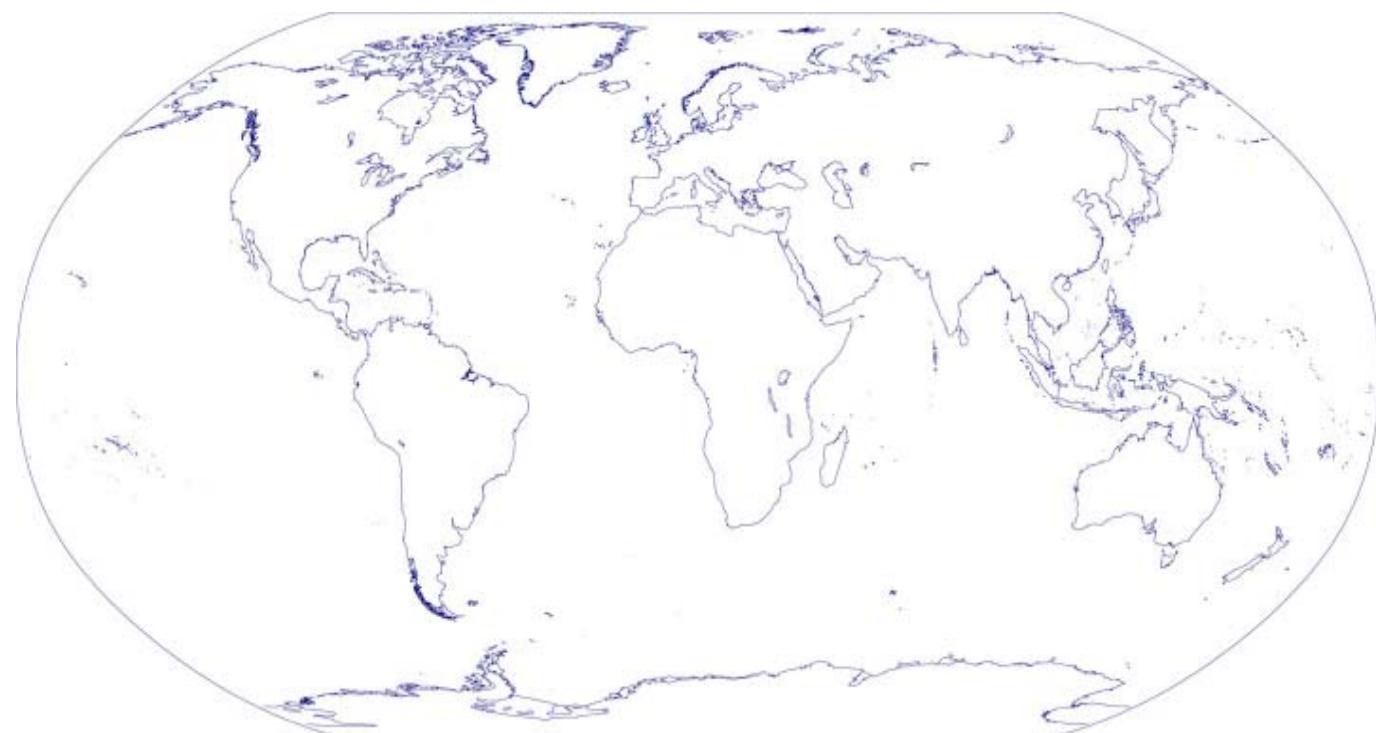
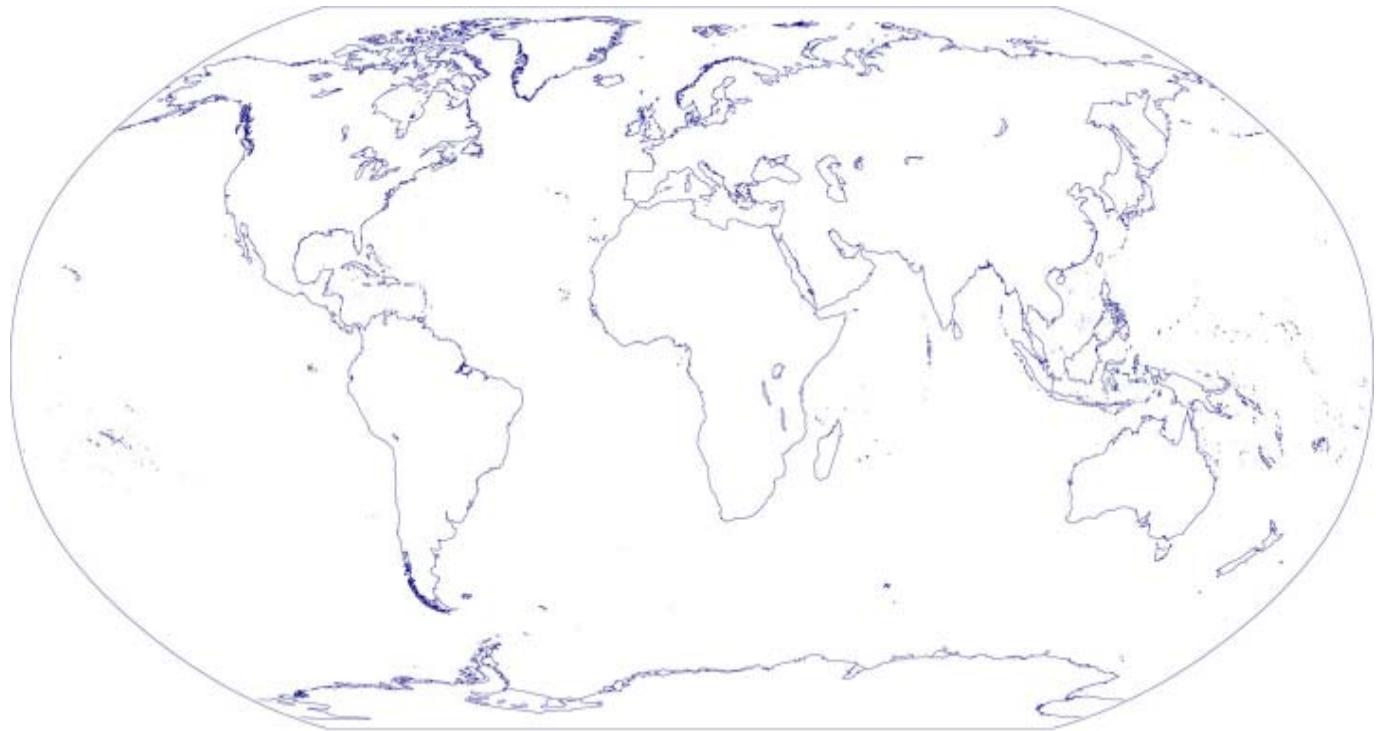
## Annex # 2



### ANNEX #2 — *Cutting and organizing instructions for activity's puzzle*

Photocopy map (Annex #3) and cut each individual map according to one of the 4 designs illustrated above. These four puzzles together make up the total amount of pieces that will be handed out to each group of four students. Mix up the pieces. Each student in the group will get three pieces. Make sure that no student gets all the pieces he/she needs to make the puzzle.

**ANNEX #3 — Map**



**Tree of Life**

**America's Rain Forests**

## The Tree of Life — Annex 4; Student Cards

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