

TROPICAL RAIN FORESTS OF THE WORLD

VOCABULARY:

lines of latitude - **lines that run east-west on a globe; parallel to the equator**

LATITUDES OF TROPICAL RAIN FOREST REGIONS:

- Lines of latitude show how far **north** or **south** of the equator a place is.
- Latitudes are numbered by **degrees**.
- The line labeled 0° is the **equator**.
- The tropical rain forest regions are in the **low** latitudes between **30° N** and **30° S**.

LOCATING TROPICAL RAIN FORESTS:

- Tropical rain forests are found near the **equator**.
- Most of the tropical rain forests are found between the **Tropic of Cancer** (23° N) and the **Tropic of Capricorn** (23° S).
- Rain forests are found on parts of the following continents:
 - North America** (parts of Mexico, Costa Rica, Ecuador, etc.)
 - * **South America**
 - * **Africa**
 - Asia** (southeastern)
 - Australia** (northeastern)

** The largest tropical rain forests are found in the Amazon Basin of South America and the Zaire Basin of Africa.

LAYERS OF THE TROPICAL RAIN FOREST

THE FOREST FLOOR:

The floor of the rain forest is a fairly open area, carpeted with **moss and decaying leaves**. **Small plants** that need little light, such as ferns and mosses, grow here. This layer of the rain forest is **dark and wet (the humidity is almost 100 percent)** and incredibly **green**.

Many of the forest floor inhabitants are **decomposers that live on leaf litter and other debris**. **Termites, giant earthworms, millipedes, and beetles** eat decaying plants and animals. They **recycle the forest waste** to provide nutrients for plants to use.

On the forest floor of a rain forest in Central America you might see an **anaconda** (large snake), a **jaguar**, a **caiman** (a small crocodile), an **armadillo**, a **fer-de-lance** (poisonous snake), a **poison arrow frog**, a **wood turtle**, **army ants** and **leafcutter ants**, or **flightless birds**.

LAYERS OF THE TROPICAL RAIN FOREST

THE UNDERSTORY:

The understory is a tangle of **shrubs, young trees, palms**, and wood plants that can grow in the shade of the taller trees in the next layer. The **leaves** of many of the plants in the understory are **especially large**, so that they can **absorb as much sunlight as possible**. The plants in this layer **rarely grow higher than 12 feet**.

In a Central American rain forest, you would find many species of **bats, snakes, and birds** in the understory. You might see a **red-eyed tree frog**, an **iguana**, a **tarantula**, **spider monkeys**, or a **jaguar**. **Most of the insects in the rain forest live at this layer**.

***Most of the animal and plant species in the rain forest live in the understory and canopy.*

LAYERS OF THE TROPICAL RAIN FOREST

THE CANOPY:

At this layer of the rain forest, **trees as high as 100 feet tall** form a continuous green roof over the forest below. The roof is like a canopy of **like an umbrella**. This layer gets much of the rainfall, but it keeps rain from falling on the understory. **Many of the leaves** on plants in the canopy are **pointed, so that the rain can run off the tips of the leaves**. These “drip tips” **keep the leaves dry and free of mold**. They also channel the water, making it run down the trunks of the trees to the forest floor. **Broad fans of roots, called buttresses** support many of the trees, to keep them stable in the shallow soil (**visible at the Forest Floor layer**).

In the canopy, there is abundant food and sunlight for thousands of animals and plants.

In the canopy of a Central American rain forest, you might see some of these animals a **three-toed sloth, spider monkeys, howler monkeys, butterflies, or snakes**. You will also see many birds like **toucans, parrots, macaws**, many kinds of **hummingbirds**, or the **oropendola (a tropical bird that builds a long hanging nest)**. Growing on the large trees you will find **orchids, bromeliads, and large-leafed vines**.

***Most of the animal and plant species in the rain forest live in the understory and canopy.*

LAYERS OF THE TROPICAL RAIN FOREST

THE EMERGENT LAYER:

Trees as tall as skyscrapers grow to a height of 250 feet in the emergent layer of the rain forest. These trees receive the full brunt of the hot sun, wind, and rain. They often have thick, waxy leaves to help them retain water and protect themselves from the sun and wind. The tops of the trees are umbrella-shaped, and they grow on long, thin trunks. Buttresses or stilt roots (on the forest floor) often help support the trees' shallow root systems.

The harpy eagle and other birds of prey live in the emergent layer.

PLANTS OF THE TROPICAL RAIN FOREST

TREES:

- Most of the trees in the rain forest grow **tall** and **straight**. Their **leaves** and **flowers** are near the top to get sunlight.
- Small trees spread and branch **under** the taller trees. These trees get less **sunlight**.
- Many **strangler** trees grow in the jungle. These plants have roots that wrap around the plants they live on and **kill** them.

VINES:

- There are many kinds of **vines** in the jungle. Some vines have stems as thin as **string**. Others have stems as big around as your **arm**.
- Vines grow **long** and **climb** to the tops of the tall trees.

ORCHIDS:

- Orchids are flowers that grow far above the **ground**, fastened to other plants.
- Many orchids are **air** plants. They get their food from **water** and **air**.

GROUND PLANTS:

- **Ferns** and **palms** grow close to the ground.
- Some ground plants have **gold** or **red** or **white** leaves.
- Certain types of **mushrooms** grow among the ground plants.
- **Bamboo** is a kind of grass that grows in a jungle. It may grow as tall as a **4-story building**. It grows *very* fast, as much as **16** inches in one day.

** Jungle plants lose leaves and get new ones all the time. It is never **dry** or **cold** enough that they stop growing. The jungle is always **GREEN**.

**** Students should have a puzzle sheet in their notes about products that come from the rain forest. The correct answers are listed below. ****

FROM THE RAINFOREST (code puzzle)

Banana

Cloves

Brazil nuts

Avocados

Passion fruit

Pineapple

Tapioca

Coffee

Cocoa

Rubber

Lumber

Vanilla

PRODUCTS RELATED TO THE RAIN FOREST (word search)

fruits

bananas

cooking oil

cloves

vegetables

rice

soap

vanilla

chewing gum

avocados

candles

quinine

rubber

eggplant

mayonnaise

pineapples

furniture

lemons

Band-Aids

balloons

insulation

limes

sneakers

curare

soundproofing

chili

medicines

margarine

cinnamon

Internet Research — Rain Forests

Go to **Mrs. Bellen's Web Page** and click on **"Missouri Botanical Gardens"**.

Use the MBG Learning Network to complete the notes below.

- **Click on the raindrop below the title "Rainforests"**
 1. The two types of rain forest biomes are **temperate** and **tropical**.
- **Click on "Where are Rainforests Located?"**
 2. Tropical rainforests are located near the **equator**. Temperate rain forests are found in **coastal** areas. The largest temperate rain forests are along the Pacific Northwest coastline, from Oregon to Alaska.
- **Click on "Rainforests Endangered!"** (*scroll down*)
 3. Half of the world's **plant** and **animal** species live in the tropical rainforests of the world. Thirty acres of trees are **cut** in the tropical rainforest every minute.
- **Click on "Tropical Rainforest Plants", then click on the word "adaptations"**
 4. The tropical rainforest is hot and wet. With over **80** inches of rain per year, as opposed to the desert's 10 inches or less, plants have adaptations that enable them to shed **water** efficiently. The leaves of many rainforest plants have **drip tips** for this purpose. **Buttress** and stilt roots are thought to provide extra support for trees growing in spongy, wet soils.
 5. Tropical rainforest plants also have adaptation to take in what little sunlight is available on the dark forest floor. Large **leaves** are common; they increase the amount of sunlight a plant can capture. Other plants, like orchids, bromeliads, and ferns, grow high up in the **canopy** where there is more **sunlight**.
- **Exit back to previous page and click on "Tropical Animals"**
 6. List 5 animals that live in the tropical rainforest: **capybara, chimpanzee, flying dragon, gorilla, orangutan**
 7. Loggers and development are destroying the rainforests of the world. Many species found in the rainforest are **endangered**. Once they disappear, they are gone forever!

RAIN FOREST STUDY GUIDE

You will need to know:

VOCABULARY:

lines of latitude

precipitation

buttress roots

drip-tips

temperate

tropical

Tropic of Cancer

Tropic of Capricorn

FROM YOUR NOTES:

- ✓ Two types of rain forests
- ✓ Location of tropical rain forests
 - low latitudes (30° N - 30° S)
 - near the equator
 - continents
- ✓ Largest rain forest (Amazon - South America)
- ✓ Average temperature (warm year round) and annual rainfall (80-100 inches)
- ✓ Layers of the rain forest
- ✓ Examples of rain forest plants and animals
- ✓ Examples of products we use from the rain forest
- ✓ Rain forest destruction
 - why is it disappearing
 - how is it affecting the Earth
 - examples of how it is can be protected