



# Rainforest Layers Diorama

## **Audience**

Activity is designed for 6 years old and up, adult assistance recommended.

## **Goal**

Students will discover a variety of animals native to tropical rainforests and how each animal lives in a different layer of the rainforest.

## **Objective**

- To learn about tropical rainforests.
- To identify the layers of the rainforest.
- To construct a tropical rainforest model.

## **Conservation Message**

Rainforests are often referred to as the lungs of the planet because they play a vital role in the uptake of greenhouse gases. Rainforests also house a huge diversity of animals and plants as they are one of the most diverse ecosystems on earth.

Unfortunately, due to habitat destruction and global climate change rainforests are at risk of being gone forever. However, there are many conservation efforts taking place right here at the Tulsa Zoo to educate our community on what we can do to be environmentally responsible.

## **Background Information**

There are two types of rainforest; tropical rainforests and temperate rainforests.

Rainforests receive at least 75 inches of rainfall annually. Tropical rainforests are found closer to the equator whereas temperate rainforests are found farther north closer to coastal areas. When we picture rainforests, most of the time we picture rain, dense vegetation and exotic, colorful animals. Tropical rainforests are characterized by very high annual rainfall, nutrient poor soil, high levels of biodiversity and high average temperatures. The world's largest rainforests are found in Southeast Asia, South America and Africa. There are over 15 million species of plants and animals that reside in tropical rainforests. Each species has unique and particular habitat requirements and some species move throughout all four layers of the rainforest.

The forest floor, or herbaceous layer, is the ground of the rainforest. The forest floor receives little to no sunlight. This is where decomposition takes place. Because the forest floor receives little light, is constantly wet, and has high heat animals, plants and litter decays quickly. Animals that call the forest floor home are primarily insects and amphibians. Some larger animals like tapirs and caiman also call the forest floor home.

Moving upward we find the understory layer. This layer receives more sunlight than the forest floor and will generally consist of smaller trees, low lying shrubs and ferns. The understory is a layer where many animals hide and hunt. For example, the jaguar spends a lot of time in the understory looking for wild boar or the occasional capybara. The understory is also home to several reptile species that hangout on the trunks of trees looking for small rodents or birds.

Going up a level we reach the canopy layer. This layer is easily recognized because of the many branches and large amount of hanging vines. The canopy is where most of the light from the sun is absorbed and blocks the light to the layers below. This layer is utilized by several species of mammals including monkeys and sloths as well as reptiles and birds.

Lastly, as we reach the very top of the rainforest, we come to the emergent layer. This layer has the most sunlight and the tallest trees. In fact, trees in this layer reach heights of 250 feet! Animals that live in the emergent layer are generally smaller or are very light weight so that they can be supported by the branches. While some four-legged mammals utilize the emergent layer, this layer typically houses birds, insects and bats.

### **Materials Needed**

- 4 boxes
- Construction Paper (green, brown, blue and white)
- Toilet Paper and Paper Towel Tubes
- Streamers (green)
- Pipe Cleaners (green and brown)
- Crayons and/or Markers
- Yarn (brown and green, optional)
- Scissors
- Tape
- Glue
- Pom Poms (optional)
- Dead Leaves
- Grass
- Twigs and Small Branches

- Animal Pictures (provided)
- Layers of the Rainforest Labels (provided)

## Length of Activity

60 minutes

## Procedure

- Print, color and cut out the provided animal pictures.
- Forest Floor/Herbaceous Layer
  - If the inside of your box is brown proceed to the next step. If not, glue in brown construction paper to cover the inside of the box.
  - Create trees trunks using toilet paper or paper towel tubes. Glue them to the bottom of the box by making a ring of glue on the bottom of the tube.
  - Find small sticks, grass, and dead leaves outside. Scatter them throughout the bottom of the box.
  - Tape or glue the forest floor animals that you previously colored and cut out throughout the layer.
  - Add the forest floor layer label on the box.



- Understory
  - Glue green construction paper to the back and bottom of the box.
  - Cut out some leaves from construction paper. Glue the leaves to the toilet paper tubes to create tops of trees. Glue the treetops into the box.
  - Glue some paper towel tubes into the box to create taller trees that go to the layer above.
  - Attach green vines using yarn or streamers.
  - Add some green throughout the box using pompoms, streamers or yarn.
  - Tape or glue the understory animals that you previously colored and cut out throughout the layer.
  - Add the understory label on the box.



- Canopy
  - Glue green construction paper to the back and bottom of the box.
  - Glue and place tree tubes throughout the box.
  - For this layer you will need lots of vines and branches. Hang streamers, pipe cleaners, yarn and leaves throughout the box, be creative! If using yarn tape works better than glue for hanging it from the top of the box.
  - Tape or glue the canopy animals that you previously colored and cut out throughout the layer.
  - Add the canopy label on the box.



- Emergent Layer
  - This layer is at the very top so it should have a blue background symbolizing the sky. Glue blue construction paper as the backdrop.
  - Cut clouds out of white paper and place on backdrop.
  - Cut and glue in leaves on the bottom of the box to look like the canopy below.
  - Add leaves to the top of the one or two sort tubes. Glue them in place to represent the few trees that poke out of the canopy into the emergent layer.

- Tape or glue the canopy animals that you previously colored and cut out throughout the layer.
- Add the canopy label on the box.



- Stack the boxes on top of each other to create the entire rainforest. On the bottom, you will have the forest floor, then the understory followed by the canopy and then lastly the emergent layer.



# Layers of the Rainforest

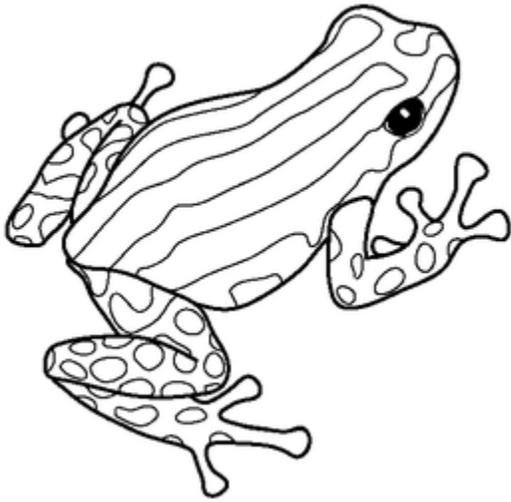
**Forest Floor**

**Understory**

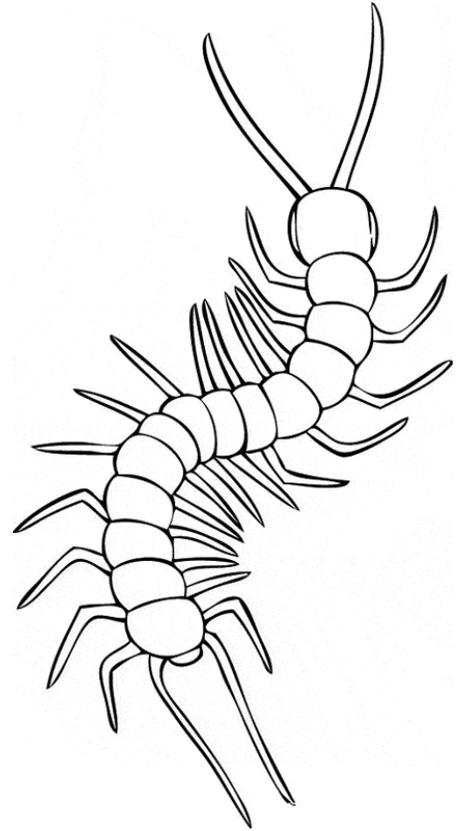
**Canopy**

**Emergent**

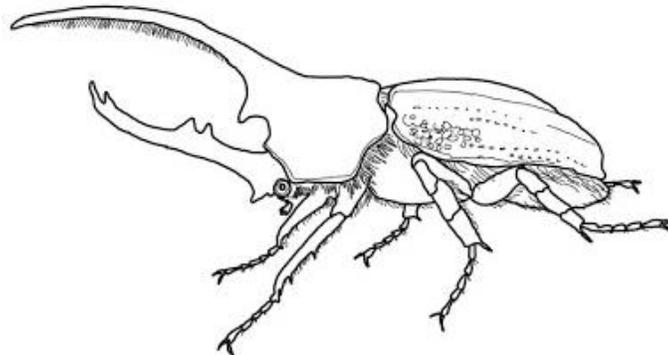
# Forest Floor Animals



**Poison Dart Frog**

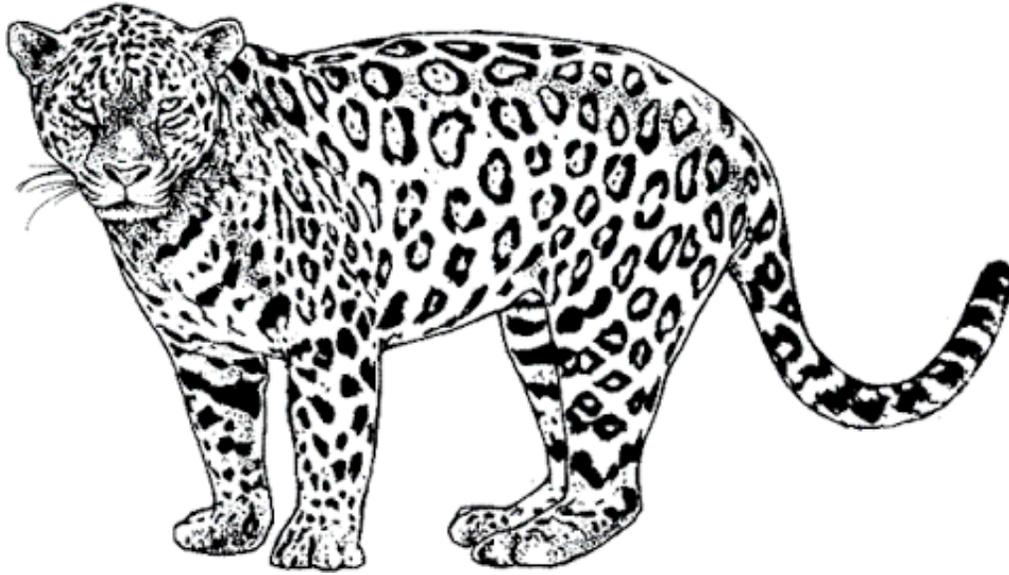


**Amazonian Giant Centipede**

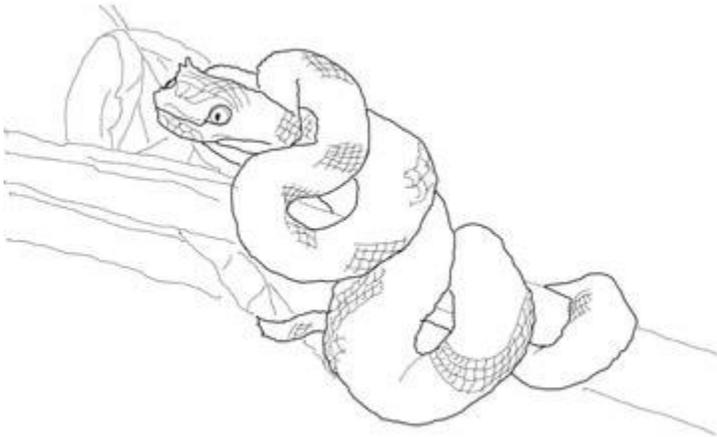


**Hercules Beetle**

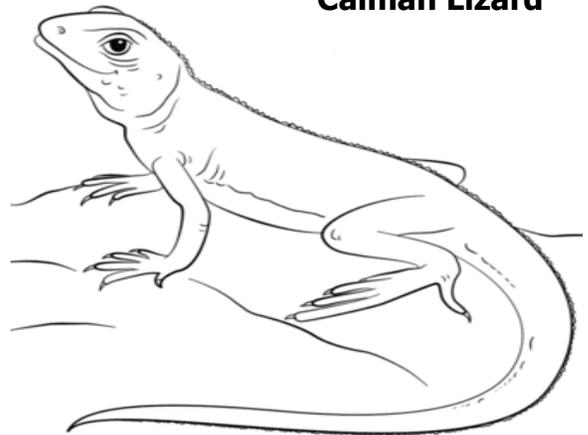
# Understory Animals



**Jaguar**



**Eyelash Pit Viper**



**Caiman Lizard**

# Canopy Animals



**Three-Toed Sloth**



**Toco Toucan**

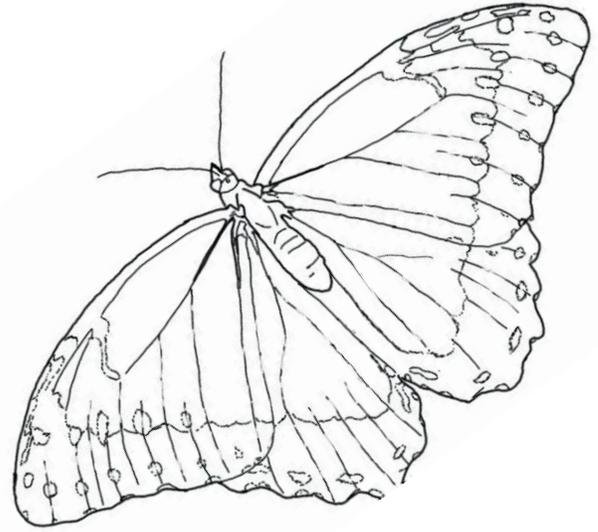


**Black Howler Monkey**

# Emergent Animals



**Harpy Eagle**



**Blue Morphos Butterfly**



**Common Vampire Bat**