



The Amazing Amazon

Objective:

Students will demonstrate an understanding of how animals and plants in a habitat are interdependent. Students will demonstrate knowledge of animals in the Amazon Rainforest and their structure and function.

Performance Objectives:

Grade 1: Strand 4 – Concept 1: PO 1-2

Concept 3: PO 3

Strand 6 – Concept 1: PO 4

Grade 2: Strand 4 – Concept 1: PO 1

NGSS 1-LS 1. A & B; 2 – LS 2. A & B

CCSS 1.W. 2; 1.W. 8; 2. W. 3; 2. W. 8

Background Information:

When you look at a map of the world, you can see many areas on Earth that have a rainforest. Areas located near the middle of the Earth, around the equator, are places where the weather conditions are perfect for a unique type of forest called a rainforest. The Amazon Rainforest is the largest rainforest in the world spanning over 2 million miles of undeveloped forest land. (See map.) The Amazon Rainforest covers several countries in South America and is home to humans, animals, insects and plant life. The vast area contains multiple ecosystems and habitats for the living creatures that call the Amazon their home.

Grades: 1-2

Key Vocabulary:

- **Habitat**
- **Interdependent**
- **Decomposed**
- **Adapted**

Related Literature:

The Remarkable Rainforest

Tony Albert

Step into the Rainforest

Howard Rice

Rainforest Food Chains

Molly Aloian

So, what exactly is a rainforest? A rainforest is a lush forest of trees and plants that live in warm, humid weather. These forests get a large amount of rain each year. Rainforests can average about 160 inches of rain each year, which is why the forest stays so humid or damp. The average temperature in the Amazon Rainforest is about 75 to 80 degrees. The Amazon Rainforest is filled with living organisms. Scientists believe that there may be many species that have not yet been discovered due to the dense foliage and multiple layers of the plant life. The rainforest survives as a result of nutrient recycling. The plants that die and fall to the ground are quickly **decomposed** and become the nutrients for the next generation of growing plants. The decomposition is the basis for plants to flourish and life in the rainforest to continue.

The trees grow quickly in the rainforest climate, some of the trees even reaching heights of 150 to 200 feet or more. Because the rainforest has so many types of trees, there is a great deal of shade for the plants and animals that live in the rainforest. The animals living in the rainforest are very different from animals living in other types of forests around the world. For example; this tiny little frog is one of the most colorful and unique animals in the Amazon, and it only lives in the rainforest.



(Photos by Keri Granado)

The Amazon Rainforest has many different types of plants and trees. Some of the trees grow very high into the sky. They are called the Emergent layer of trees. The trees in the emergent layer grow as tall as 200 feet and have limbs that reach out great distances making shade over the top of the trees below. Large birds fly

around the tree tops and Howler monkeys swing from limb to limb in the emergent layer of the Amazon Rainforest.



The next layer of the rainforest is the Canopy. This layer is made up of so many branches and leaves it acts like an umbrella over the forest below. Animals like the Spider Monkey and Scarlet Macaw

enjoy life in the canopy layer of the rainforest. If you look closely, you may even see a twisting of vines and plants that hug the trunks of the trees as they reach for the light above. The canopy is so thick with leaves that it shields some of the rain from reaching the forest floor. The canopy is the most populated layer in the rainforest.

The Understory layer is made of smaller tree tops and other plants that live in the shade and high humidity. The understory contains a large number of insects, vine snakes, poison dart frogs, butterflies and even the three-toed sloth. The air in the understory is hot and heavy with moisture.

The forest floor is like a carpet of dead leaves and plant material that covers the ground. Insects love this area because it is damp, shady and filled with various sources of food for the animals and insects. The forest floor only gets about 1 to 2 % of the sunlight, but the top soil is rich with nutrients. The forest floor is home to beetles, lizards, termites, conga ants, snakes, funnel-web spiders, leaf cutter ants, and even jaguars. Moss, fungi and herbs grow in some of the decaying leaf matter that fills the forest floor.



(The Amazon Rainforest floor and vine snake photos by Keri Granado)



Vine Snake

There are many different types of animals living in the rainforest. Many of the unusual animals are also considered rare and endangered. For example, the three-toed sloth, living in the Amazon Rainforest, is an animal that is in danger because when trees are removed, the sloth has no place to build a home. The sloth has **adapted** to living almost its entire life in the trees. The sloth's body is built for hanging from trees and not for standing or walking. Because of the loss of habitat, there are not many of these unique animals left in the entire world.



(Public domain photo)

This interesting creature is known as the slowest mammal in the world. The greenish color on the sloth is the algae that grow on the sloth's hair. Algae grow because of the sloth's slow movement and life in the humid, shady rainforest. The three-toed sloth gets its name from the three long toenails used to grip the trees so the sloth can climb. The sloth spends most of its time in the treetops and hanging from branches. Caterpillars also like to crawl on the hair of the sloth. The caterpillars eat the moss that collects and grows on the sloth. The **interdependent** relationship between the sloth, the caterpillars and the moss is necessary for each to survive. The sloth provides a host for the moss to grow, the moss provides a food source for the caterpillars and the sloth transports the caterpillars from branch to branch.

Plants and animals that live in the rainforest share some common traits. Living things in the rainforest must be able to survive in a warm, humid climate that has a large amount of rain. Living in the rainforest means that many animals, like the squirrel monkey, must climb trees and live in shady areas. Reptiles like iguanas, green tree pythons and vine snakes have scales that protect their skin while they climb trees for food and shelter. These are animals who have **adapted** to life in the trees. Plants and animals in the rainforest do not like the cold weather, and they can not live in the very hot weather like the Arizona desert. These are animals that do not live in dry climates because they must live in a humid area with lots of rain. Rainforest animals live among the many species of plants and millions of fallen leaves and vegetation that covers the forest floor. Rainforest animals and insects must crawl or walk around the deep vegetation to find food, water and shelter.

The Amazon Rainforest is a haven of natural resources. While the Earth's rainforests cover less than 2 percent of the land, the rainforests are home to 50 percent of the Earth's plants and animals. The abundance of living organisms contributes to the critical importance of the rainforests and the survival of life on Earth. As much as 20 percent of the world's oxygen is produced by the plants in the rainforests. Along with other natural resources such as fresh water, wildlife, medicinal herbs and plants, trees and other materials used in many household products, the rainforest provides life-sustaining habitats for over two million insect species and over 40,000 plant species.



Blue Morpho Butterfly (public domain photo)



(Moth at Jatun Sacha Preserve, Ecuador. Photo by Keri Granado)

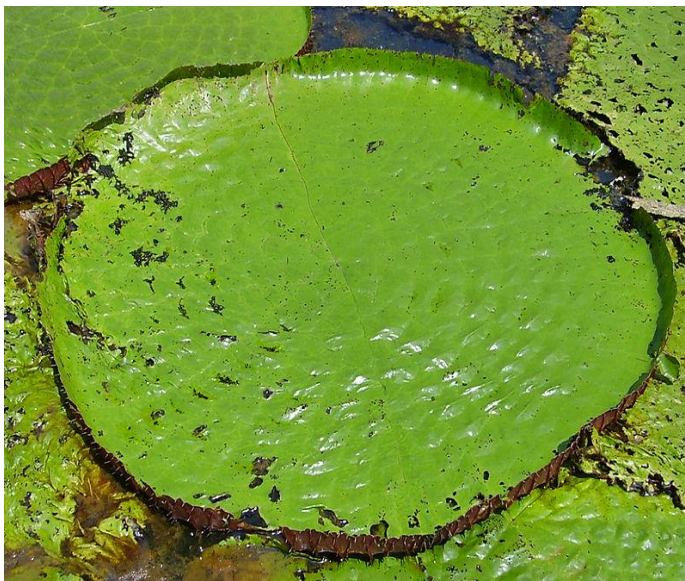
How's The Weather Outside?

When we talk about the weather, we usually talk about the wind, storms, clouds, rain, sunshine and even how hot or cold it is outside. Weather changes with the seasons: fall, winter, spring and summer. Weather also has an impact on the plants, animals and humans living on the Earth. So, what is the weather like in the Amazon Rainforest?

The tropical rainforest of the Amazon is a warm and humid place that receives between 80 to 400 inches of rain each year. The rain is very important to the climate of the rainforest because it creates habitats for unique plants and animals living in the area. Because of the daily rain, the rainforest never gets too hot and stays at temperatures from 70 and 85 degrees. The humidity, which is the water vapor in the air, is high and generally around 88%. The weather forecast for the Amazon Rainforest is warm and humid with filtered sunlight in places.

The plants living in the warm, humid rainforest are very important to the Earth. As plants grow and process the air around them, they create a large amount of the Earth's oxygen and provide many resources for the local environment. The rainforest plants become the homes for insects, reptiles, birds, amphibians and mammals. Some of the plants in the rainforest have been used for making medicines to cure diseases and as food for humans. For example, bananas and mangos are a favorite rainforest food for many people around the world.

If you visit the rainforest, put up the umbrella because the weather outside is rainy!



The Victoria Amazonia (Giant water lily) can be as wide as 6 feet with a 4 inch ridge around it. The lily can be found around the banks of the Amazon River. (Public domain photo)

Procedures and Pre-Activities:

1. State the learning objective.
2. Review the vocabulary.
3. Read the related literature about the rainforest and show pictures.
4. Show the location of the Amazon Rainforest on a world map and give students the attached map. Title: Amazon Rainforest Experience
5. Conduct an open discussion about animals in the rainforest and compare them to animals in the local area. Students should be able to identify one or two differences between these types of animals. (The same may be done with plants such as cactus and orchids.)
6. Present the background information and refer to pictures to enhance learning.
7. Discuss the details of weather. Ask students to describe rain storms, clouds, sunlight, shade (what is shade?) and humidity.
8. **Activity: Create a Rainforest.** The objective is to have students demonstrate their understanding of the layers of the rainforest. Students draw a picture of a rainforest with trees of different layers. They may add a few animals that live in the rainforest. (Coloring is optional.) Students follow directions and write a description of the rainforest. Students may need assistance.
9. Prepare students to visit **Butterfly Wonderland**. Explain that the environment in the atrium is similar to the rainforest. Students will notice many different types of plants, a water pond, warm temperature and a very humid environment. The butterflies in the atrium must live in the rainforest-like environment and use the flowering plants for food.
10. **Activity: The Taste of the Rainforest**
Students love to taste samples of different foods that originate in the rainforest. (Be sure to check for food allergies prior to this activity.) Arrange 10 large paper plates on a table. Arrange bite-size samples of the foods and spices on plates and have student take a sample. (Students have small paper plates for their samples.)

Suggested Items:

Dried fruits (mango, pineapple, etc.)

Nuts: Brazil nuts, cashews and macadamia nuts

Chocolate (kisses)

Sweet potato (chips)

Cinnamon, cloves, ginger, allspice, cardamom

Discuss the samples tasted and have student select the one they like best.

11. Activity: Who Am I?

The objective of this activity is to help students demonstrate their understanding of some of the specific traits of animals in the rainforest.

The picture sheet, Amazon animals, can be used for this activity. Teachers may pre-cut the pictures and distribute them to students or have students do the cutting. This activity works well with students in groups of five. Each group of five students will need a set of the pictures.

Copy and pre-cut the worksheet, WHO AM I ?, in half making 5 different cards (half-sheets). Each student receives one card. The descriptions on each of the five cards will be different. At this point, with the teacher's assistance, each student reads the descriptions and determines what animal fits his/her card.

The student pastes the animal picture that best fits the description on the right side of the card. Students then share their animal and description with the group.

Materials: Printed worksheets, pictures, paste, scissors

Reflection and Assessment:

After visiting **Butterfly Wonderland**, discuss the experience in the atrium and how the atmosphere relates to the Amazon Rainforest. The final assessment will be completion of the activities and participation in the discussions.

Activity: What am I, and where do I live?

The objective of this activity is to have students demonstrate their understanding of what animal lives in a particular habitat. The worksheets (toucan and desert tortoise) have questions for the student to complete. Students study the animals and discuss their specific characteristics and what habitat is home for them.

Materials: Scissors, printed Animal pictures, worksheet

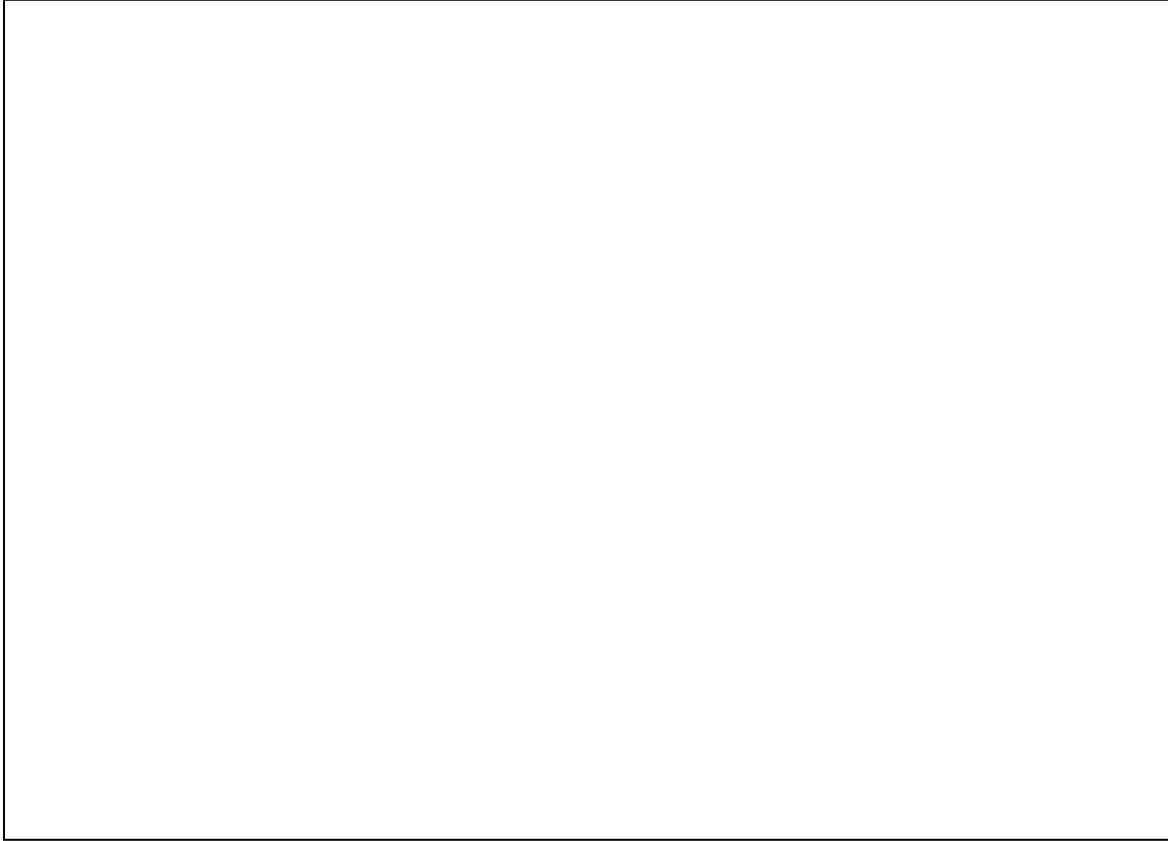
Amazon Rainforest Experience



The Amazon River in blue
The Amazon Rainforest in yellow

Create a Rainforest

Draw a picture of a rainforest:



Write a description of the rainforest in your drawing:

WHO AM I ?

I live in the Amazon Rainforest

I have antennae

I love flowers

I came from a chrysalis

I float in the air

I am a _____

WHO AM I ?

Trees are my home

I love the warm, humid air

I eat bugs

I have many colors

I am dangerous

I am a _____

WHO AM I ?

I live in the rainforest

Trees are my favorite place

I eat meat

I run very fast

I have a beautiful coat

I am a _____

WHO AM I ?

I have long hair

My pace is slow

I have adapted to tree life

I do not like to run

I like caterpillars

I am a _____

WHO AM I ?

My home is in the trees

I can move around easily

My head is colorful

My eyes are round

I love fruit

I am a _____

Amazon Rainforest Creatures



(Public domain photos)

What am I, and where do I live?



What am I ? _____

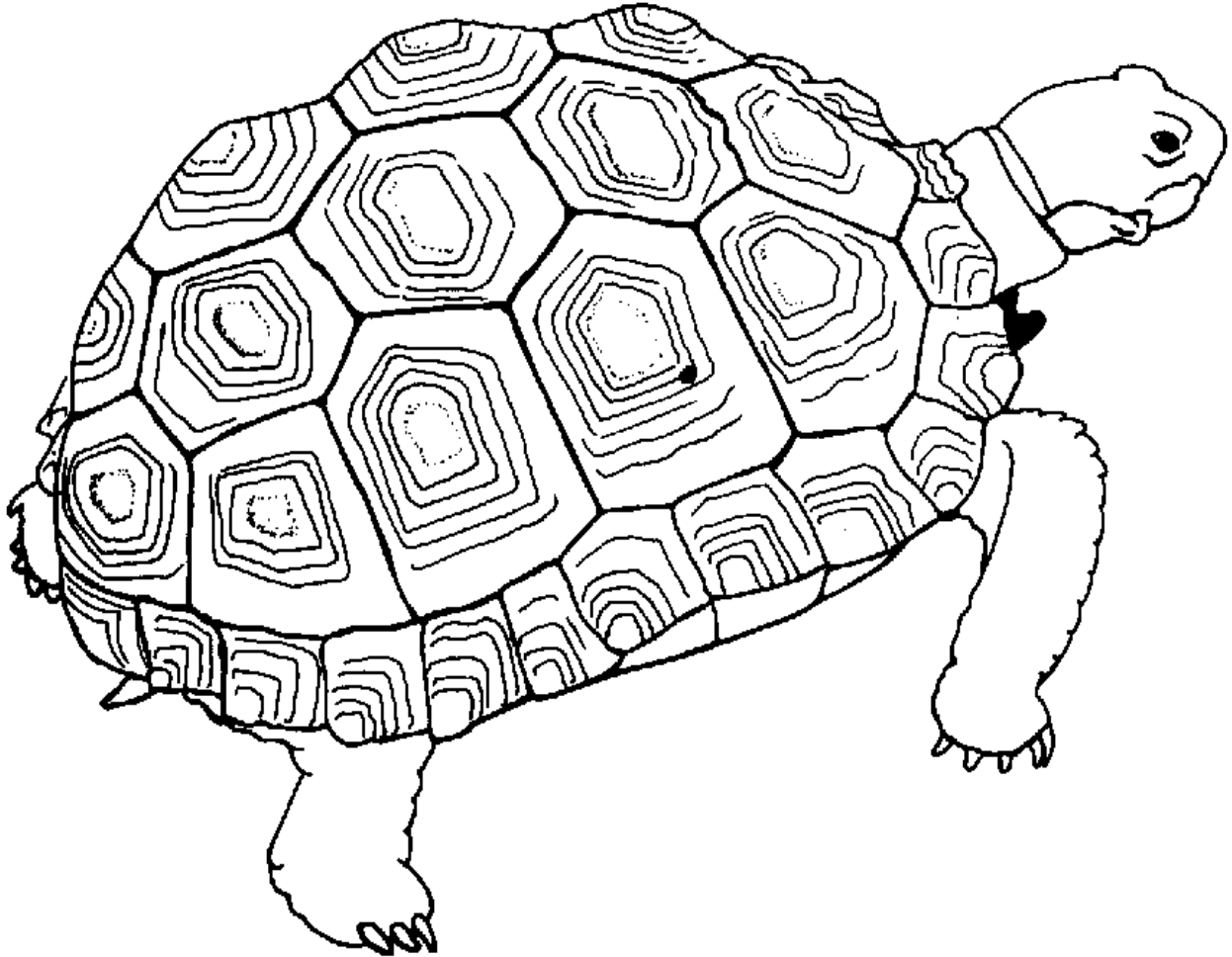
Where do I live? _____

What do I eat? _____

Why is my habitat best for me? _____

Color the picture and give this bird a name.

What am I, and where do I live?



What am I? _____

Where do I live? _____

What do I eat? _____

Why is my habitat best for me? _____

Color the picture and give this reptile a name.