



# Virtual Empathy Program

## Grade 2

### **Introduction:**

This document provides some basic background information, key vocabulary terms, and suggested activities that support the “Rainforest Layers” empathy program from the Minnesota Zoo. It will be helpful for your students to understand the **bold** terms before their first session.

The suggested activities were designed to enhance your experience. We ask that you provide us with your program feedback and share your students’ work to help us continue to improve our programs. Your feedback is critical as we use it to make changes from year to year. Your voice makes a difference!

Provide your feedback [here](#) or by going to <https://tinyurl.com/empathyprogram>.

Scan and email student postcards to [educate@mnzoo.org](mailto:educate@mnzoo.org) or mail them to zookeepers at:

Minnesota Zoo Attn: Education  
13000 Zoo Blvd  
Apple Valley, MN 55124

### **Standards Alignment**

#### ***2009 MN Graduation Standards supported:***

**2.4.1.1.1** Plant characteristics: describe and sort plants into groups in many ways, according to their physical characteristics and behaviors.

#### ***NGSS Standards supported:***

**2-LS4-1** Make observations of plants and animals to compare diversity of life in different habitats.

### **Key Vocabulary Terms**

**Habitat** – A natural environment in which an animal, plant, or other living things live.





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**Adaptation** – Something to help an animal or plant survive. It could be a part of an animal’s body or the way they move. In a plant, it could be what their seeds are like or how they grow.

**Survive** – Live and grow.

**Biodiversity** – The variety of life on earth or in a habitat.

### Pre-Program Activities:

#### Activity: Biodiversity in my neighborhood

##### Materials:

- 2 pieces of paper
- Writing tool
- Rainforest photo

|                   |           |
|-------------------|-----------|
| Animals           | Plants    |
| Neighbors/Friends | Buildings |

##### Instructions:

- Fold one piece of paper into four different quadrants by folding in half once the long way and once the short way. Trace the folded lines and label each of the quadrants: animals, plants, buildings, neighbors/friends.
- Invite students to take a short walk with an adult or spend five minutes looking out the window and observe the schoolyard or neighborhood. Have students make a list or draw the different things they observed in the corresponding space.
- Tally how many different things were listed in each quadrant and have students share with each other what they observed. How many animals did they see? How many different plants did they observe? How many neighbors or friends did they see walking around? How many different buildings did they see? Did all their neighbors and friends look the same? Did all the buildings look the same?
- There is so much biodiversity right in your community. Imagine if you tallied every living organism in the world. How many kinds of living organisms would there be?
- Rainforests habitats make up a small amount of space on earth but have the greatest biodiversity. How can so many plants and animals share such a small space?





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- Fold your second piece of paper into 4 sections the short way. Label each section starting from the bottom (Forest floor, understory, canopy, emergent layer). See Figure 1 below for an example.

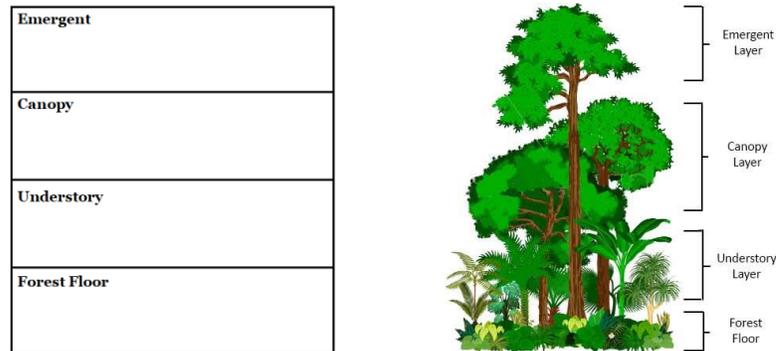


Figure 1

- Have students brainstorm and draw animals and plants that can be found in each layer of the rainforest. Have students research one layer of the rainforest and share a plant and animal that can be found there.

### **Background information for the teacher:**

**Biodiversity** is the variety of life you find in a habitat including plants and animals. According to National Geographic, scientists have only identified around 1.2 million species, most of which are insects. This means that there are still millions of plants and animals that are yet to be discovered. Each living thing plays a role in the habitat and depends on each other, which creates a web of relationships.

Rainforests are one of the habitats that have the greatest biodiversity. Even though rainforests only cover a small section of the earth, they are home to more than half of the animals found on earth. So many animals can be found here because there is plenty of sunlight and rain to provide food and energy for animals and plants all year long. Rainforests also have four different layers (forest floor, understory, canopy, and emergent layer). Each layer is unique and provides plenty of space for plants and animals to live and grow.

**Forest Floor:** The forest floor is often dark, hot, and damp due to the shade from the canopy and because of this, there is little plant growth. The forest floor is an important space to help recycle (decompose) the leaves and fruits that have fallen onto the ground, and it provides support for trees. The animals that live in this layer cannot climb very well but are great at digging like beetles, anteaters, tapirs, and earthworms.



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**Understory:** The understory is warm and shaded but brighter than the forest floor. This layer is sheltered from heavy rain and strong winds. Plants that grow in this layer are shorter with big leaves to get as much sunlight as possible. You can find tree trunks, bushes, flowers, and vines in this layer. Many animals such as insects, spiders, tree frogs, jaguars, and snakes that are great at climbing and pollinating can be found here.

**Canopy:** The canopy layer is very thick and crowded with branches and leaves and blocks the sunlight and rain from the layers below. With all the leaves providing the trees with energy from the sun, this layer is filled with fruits, seeds, and flowers. All this food makes this layer home to the greatest number of animals compared to the other layers of the rainforest. Animals such as howler monkeys, toucans, butterflies, and sloths that are great at climbing, leaping, gliding, or flying through the branches can be found in the canopy.

**Emergent Layer:** The emergent layer is the very top layer of the rainforest and is the brightest layer. It can get very windy and wet, making it hard for plants and animals to live there. Animals that live in this layer are good at flying and gliding or light enough to rest or stand on the thin branches at the top of the trees. Animals such as bats, butterflies, and harpy eagles live in this layer.

### **During your program:**

We are so excited to meet and get to know your students better and to learn from them! In our sessions, we expect:

- Curiosity!
- Questions!
- Awe!
- Sharing stories!

During the program, you can support students and zoo instructors by practicing and engaging in empathy for animals' best practices.

### **Examples include:**

- Use language that encourages students to see animals as individuals with unique personalities, experiences, and intentions. (*Example: Use “he or she” to describe an animal instead of “it”*)
- Model positive, empathic attitude and behavior to provide an example for students to learn how to build empathic skills.
- Encourage and invite students to observe the animal and imagine what it is like to be that animal. (*Example: “Notice how he is flicking his forked tongue out. That is how he smells. What do you think he is smelling right now?”*)





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- Encourage storytelling and roleplaying to take on the perspective of an animal.
- Avoid reinforcing fear and disgust. It's okay to acknowledge a student's fear or disgust but refocus students' attention to unique facts about the animal that they may find interesting.
- Connect students to caring action by suggesting and inviting students to think of simple caring actions. (*Example: recycling, picking up trash, educating others, planting flowers*)

### **Post-Program Student Activity: Send a postcard to a zookeeper!**

The Minnesota Zoo has over 400 different species of animals that live at the zoo and we have many zookeepers that take care of the animals that you visited on your trail tour. A day in the life of a zookeeper includes food prep, feeding the animals, making behavioral observations, cleaning, and maintaining the animals'



living space, training, educating visitors, and supporting veterinary staff. Zookeepers also make sure that our animal friends are exercising, staying curious, and practicing natural behaviors by providing them enrichment. An enrichment can be any object that is safe for an animal to interact with such as a ball, cardboard boxes, floating objects in the water, puzzle feeders, different scents, or pine needles and leaves. You might have seen some enrichment on your trail tour.

If you enjoyed seeing the animals on your tour today, send a postcard to a zookeeper. Print and use the postcard template provided or have students use a blank piece of paper. Include a drawing of what animal you enjoyed seeing and what the animal was doing to thank the zookeepers for taking such great care of them.

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**We are excited to share your postcards with zookeepers!**

