



RAINFOREST
TRUST®

Discovering Biodiversity

Primary Levels: Ages 6 -10



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Standards

- Common Core Standards for English Language Arts/Literacy and Mathematics
- Next Generation Science Standards for Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms: Matter and Energy in Organisms and Ecosystems.

Concepts

- Students will learn about scientific discovery and how scientists discover, document and protect species.
- Why is there such a high amount of species diversity found in tropical rainforests.

Part I: Making Connections

Idea – In the tropics there are more species than anywhere else on our planet. In some parts of the Amazon scientists have discovered over 200 *different types* of insect species on one tree! Cataloguing and protecting the great diversity of life found in the tropics is an exciting but daunting task. Today new species continue to be discovered, especially insects – the most abundant group of animals on our planet. Students will learn about the diversity and complexity of the rainforest and that of their own biome through comparison. Learning about the diversity of plants and animals in rainforests, students

will next learn about some of the plants and animals found in their own neighborhoods by participating in a Bio Blitz in their school yard or local park.

Materials –

- Paper and pencils
- Charts or tables for Bio profile of school or neighborhood species
- Internet access for using the program iNaturalist to upload their BioBlitz as a class.
<https://www.inaturalist.org/>
- Basic natural history field guide of your local area (optional)

Procedure –

1. Students will perform a Bio Blitz in their own neighborhood or schoolyard by observing and recording every plant and animal within a designated area. Every student should focus their efforts on the same area separately so they can combine their findings afterward and determine if the species they documented were rare or common.
2. The Bio Blitz should be done multiple times over the course of a week. Pick a defined area of lawn, forest or creek for your Bio Blitz – the more diverse the area you choose the more species you are likely to find.
3. Everything observed can be recorded including trees, grasses, weeds, insects, spiders, birds, squirrels etc. In addition, have students record the temperature, wind, sunlight and humidity.
4. Together as a class, transfer the information you collected to a large chart in the classroom.
5. Using internet and library resources have students research the biodiversity found in the rainforest and compare using the iNaturalist program. Students compile a Bio Blitz Profile for what they might find in a rainforest compared to their own school yard area.
6. Students compare and contrast the two charts making observations of the differences in species diversity between the two.

Part II: Reading and Discussion

Idea –Have students imagine they are explorer-scientists in the remote corners of the rainforest as you read together.

Materials –

- Book – *Tropical Rainforests* by Donald Silver

Procedure –

1. Read the book *Tropical Rainforests* by Donald Silver.
2. Have students travel in their imagination to the Amazon in search of lost species. Ask them what they creatures they would look for. What materials would they bring on their trip? How would they go about discovering what species were there?

3. Ask them to imagine the feeling of being in a wild, remote rainforest. Do some basic research to talk a little bit about some real rainforest explorers in history like Alfred Russell Wallace or Alexander von Humboldt. Emphasize that the adventure of discovery continues in rainforests.

Part III: Math and Geography

Idea – Students will learn how the range of temperature between the tropics and temperate environments influences complexity across ecosystems.

Materials –

- Paper and pencil
- Access to the web to look up weather information at World Weather and Climate Information website <http://www.weather-and-climate.com/>

Procedure –

1. Have students record the annual temperatures, rainfall and humidity in their area and compare to a town like Tarauacu for example, located deep in the Brazilian Amazon.
<http://www.weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine,Tarauacu,Brazil>
2. Ask students to create two graphs to analyze the differences between their town and the Amazon town by comparing temperature, sunlight, rainfall, humidity and seasons.
3. Students propose how these differences influence the plants and animals found in the two locations and ask what might happen if these patterns were thrown off.

Part IV. Create

Idea – Students learn about species diversity by creating their own newly discovered species. Cut out basic animal silhouettes. Have arts and crafts materials available for students to add accessories like fur, fins, wings, scales, horns, stripes, textures, patterns and colors. Imagine furry fish or polka dot chameleons. Have fun and be creative!

Materials –

- A combination of animal silhouettes you can create
- Art materials for accessories
- Scissors, tape, glue and other materials as needed

Procedure –

1. Have students cut out basic animal silhouettes and have arts and crafts materials available to add on accessories like fur, fins, wings, scales, horns, stripes, textures, patterns and colors. Imagine furry fish or polka dot chameleons.

2. Let students create their new species and encourage them to think about reasons the new species has the shape, color and characteristics it has. Have them be able to explain the logic of their creature's adaptations.
3. When finished have them put their animals on a colored background to describe its habitat.
4. Display the "new species" around the classroom.

Part V. Present

Idea – Have students write up a short newspaper press release describing their new species and reasons to protect it. Include why their species is in danger, where it is found and why it is worth protecting. Have students present to the class.