



Third Grade Ecuadorian Rainforest

National Standards for Grade 3 Lessons

Language Arts Writing

Standard 4 Level 2 Grade 3-5

2. 3. 4. Gathers and uses information for research purposes (encyclopedias, dictionaries, electronic media).
Uses multiple representations of information (maps, charts, diagrams, tables) to find information for research topics.
7. Uses strategies to compile information into written reports or summaries.

Reading

Standard 7 Level 2 Grade 3-5

- Uses reading skills and strategies to understand a variety of informational texts.
5. Summarizes and paraphrases information in texts.
6. Uses prior knowledge and experience to understand and respond to new information.

Listening and Speaking

Standard 8 Level 2 Grade 3-5

- Contributes to group discussions.
Asks questions in class.
Responds to questions and comments.
1. Listens to classmates and adults.
7. Makes basic oral presentations to class.
10. Organizes ideas for oral presentations.

Reading

Standard 6 Level 2 Grade 3-5

- Uses reading skills and strategies to understand and interpret a variety of literacy texts.
9. Makes connections between characters or simple events in a literary work and people or events in his or her own life.

Thinking and Reasoning

Standard 3 Level 2 Grade 3-5

4. Makes comparisons between countries in terms of relatively concrete characteristics (size, population, products).

Standard 1 Level 2 Grade 3-5

1. Uses facts from books, articles and databases to support an argument.
7. Recognizes when a comparison is not fair because important characteristics are not the same.

Standard 5 Level 2 Grade 3-5

1. Identifies issues and problems in the school or community that one might help solve.

Mathematics

Standard 1 Level 2 Grade 3-5

1. Uses a variety of strategies to understand problem situations.
2. Represents problems situations in a variety of forms.

Standard 3 Level 2 Grade 3-5

7. Solves real world problems involving number operations.

Standard 4 Level 2 Grade 3-5

1. Understands the basic measures perimeter, area, volume circumference.
2. Selects and uses appropriate tools for given measurement situations.
4. Understands relationships between measures.
1. Uses specific strategies to estimate quantities and measurements

Standard 9 Level 2 Grade 3-5

2. Understands that mathematical ideas and concepts can be represented concretely, graphically, and symbolically.

Life Science

Standard 6 Level 2 Grade 3-5

1. Knows the organization of simple food chains and food webs.
2. Knows the transfer of energy.
3. Knows that changes in the environment can have different effects on different organisms.
4. Knows that all organisms (including humans) cause changes in their environments and these changes can be beneficial or detrimental.

Standard 1 Level 2 Grade 3-5

Understands atmospheric processes and the water cycle.

Standard 4 Level 2 Grade 3-5

5. Knows that the characteristics of an organism can be described in terms of a combination of traits; some traits are inherited and others result from interactions with the environment.

Standard 5 Level 2 Grade 3-5

3. Knows that living organisms have distinct structures and body systems that serve specific functions in growth, survival and reproduction. (body structures for walking, flying, or swimming).

Standard 7 Level 2 Grade 3-5

3. Understand the concept of extinction and its importance in biological evolution.
4. Knows ways in which living things can be classified.

Standard 9 Level 2 Grade 3-5

Understands the sources and properties of energy.

Standard 11 Level 2 Grade 3-5

5. Knows that good scientific explanations are based on evidence (observations) and scientific knowledge.
6. Knows that scientists make the results of their investigations public.

Standard 13 Level 2 Grade 3-5

1. Knows that people of all ages, backgrounds and groups have made contributions to science and technology throughout history.

Standard 12 Level 2 Grade 3-5

3. Plans and conducts simple investigations.
4. Uses appropriate tools and simple equipment.



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Lesson 2: Surviving in Our Ecosystems

Concept

Each species has different survival needs. The balance of each ecosystem is a delicate web of interdependence and every species of plant or animal is affected by changes in that balance. Knowing how we, as humans, are the same and/or different than other species informs us of our role in the larger ecosystem.

Essential Question

What do we need to live in the trees?

Additional Resources

- **Resource Index** - Check out this page at <http://www.rainforest-alliance.org/programs/education/teachers/curriculum/resources/index.html> for additional supplemental materials that complement these dynamic units and to access many of the resources listed below.
- **Slideshow** – The Learning Site provides a slideshow and script about Ecuador that includes background information about the animals, people and landscape of this region. The slideshow can be downloaded for viewing in the classroom, printed out and read as a story, or viewed online with the students.
- **Unit-Specific Story:** The Rainforest Alliance has developed an original story for use with these units, available in English, Spanish and Portuguese. The story is available to download and print or can be viewed onscreen.

Romel's Rainforest Home

- **From the Bean to the Bar: Chocolate Slideshow** - Where does chocolate come from? Take a journey that follows the production of a chocolate bar from the bean to your supermarket. The slideshow can be downloaded for viewing in the classroom, printed out and read as a story, or viewed online with the students.
- **Species Profiles** – The species profiles, available to view on screen or download from the beginning of the unit or the Resource Index, include photos, habitat, foraging behavior, group relationships, threats and many more facts.
 - Bromeliad
 - Ocelot
 - Great Curassow
 - Capuchin Monkey
 - Three-Toed Sloth

- **Rainforest Poster:** Download and print out this colorful two-page poster, which is available for you to use in explaining the layers of the rainforest, its products and the environmental threats facing many rainforests around the world.

Inside the Canopy – Structure and species of the rainforest

Status Report – What is happening to the rainforest

- **Terrarium Instructions** – Download directions for making a terrarium in your classroom.
- **Rainforest Products** – Visit <http://www.rainforest-alliance.org/resources/forest-facts/lives.html> for a summary of products found in our homes and supermarkets that either originated in tropical forests or are currently produced there.
- **Teacher summary/Chachi Community Profile** – The Rainforest Alliance Learning Site provides a downloadable overview of Chachi cocoa farmers in Ecuador with useful information to introduce you to the lesson topic.
- **Conservación y Desarrollo (Conservation and Development)** – Check out this online resource for more information about how the Rainforest Alliance’s partner group in Ecuador, *Conservación y Desarrollo*, is helping the Chachi protect their precious ecosystems:
<http://www.rainforestalliance.org/programs/aar/ecuador.html>
- **Profiles in Sustainability** – Visit <http://www.rainforestalliance.org/programs/profiles/index.html> for case studies on companies who work closely with the Rainforest Alliance to ensure that their practices protect wildlife, workers and communities.
- **Certificate of Accomplishment** – Print out colorful rainforest certificates for your students to commemorate their completion of these units.

Step 1 - CONNECT (The Concept to Prior Knowledge)

Challenge

Students identify the characteristics of a frog and compare them to a human child.

Materials

- Photos of frogs
- Sketch of frog in its environment
- Sketch of human in its environment

Procedure

What makes a frog a frog?

1. Show children pictures of different frog species and discuss the characteristics all frogs share: moist skin, wide mouth, large eyes and nostrils on top of the head, eardrums on sides of head, long hind legs and long toes.
2. In a discussion led by the teacher, have children talk about how the frog’s shape helps it survive. For example, a frog’s strong hind legs help it jump, swim or

climb to escape predators or catch prey. Eyes and nostrils on top of the head enable a frog to stay underwater and still breathe and see.

3. In a teacher-led discussion, have children talk about the environment that a frog needs to survive. For example, a frog will need moisture to keep its skin from drying out. Frogs need camouflage to hide from predators. Frogs need to be near a food source or be able to draw insects to their environment so as to eat without endangering themselves.
4. Hand out an outline of a frog (or a picture of a frog) to small groups of students. Working in small groups, have students list the characteristics of 'frogs' and the elements of their environment on the paper.

What makes a human different from a frog?

1. Put a picture of a human child next to the picture of a tropical tree frog.
2. Discuss the ways that human children are the same or different than the tree frog.
For example:
 - Humans are mammals, not amphibians.
 - Human skin adapts to a wider range of moisture but won't last long underwater.
 - Humans have eyes and a nose that is designed for their upright posture and dry environment.
3. Give students a worksheet with a human figure on one side and a tree frog on the other. Have students describe the best environment for a human to live in and the best environment for a frog to live in based on their physical characteristics.
4. Have students draw a 'house' that a frog might live in.

Step 2 - LITERATURE/DISCUSS (Give Expert Information Book: Ask questions)

Challenge

Students identify a wide range of "homes" appropriate for a diversity of frogs in both tropical and temperate locations.

Materials

- Book: **Flashy Fantastic Rainforest Frogs**, by Dorothy Hinshaw Patent and Kendahl Jan Jubb
- Book: **Frogs: A Chorus of Colors** by John L. Behler and Deborah A. Behler
- Paper, art supplies

Procedure

1. Read aloud **Flashy Fantastic Rainforest Frogs** by Dorothy Hinshaw Patent and Kendahl Jan Jubb for an in-depth look at various species of rainforest frogs, discussing their habits, life cycle and needs for survival.
2. Compare the home of the red-eyed tree frog and other tropical frogs with the

frogs from temperate regions that are described in **Frogs: A Chorus of Colors** by John L. Behler and Deborah A. Behler.

3. Have students draw pictures or cut out/paste pictures of temperate and rainforest frogs on a sheet of paper. Have students identify the differences between the frogs and describe how their homes might be different based on the reading.

4. Additional References:

Frogs: Inside their Remarkable World by Ellin Belts

Tropical Rainforest: A golden Guide from St. Martin's Press by Allen Young

Step 3A – PRACTICE (Math and Learning Centers)

Challenge

Students will learn the interrelationship between bromeliads and tree frogs and rainfall in tropical rainforests.

Materials

- Internet access or encyclopedia
- Paper, pencils
- Bromeliad activity: <http://www.rainforest-alliance.org/programs/education/kids/hands-on-projects/bromeliad.html>
- Bromeliad pattern: <http://www.rainforest-alliance.org/programs/education/kids/hands-on-projects/pattern.html>

Procedure

1. Using the Web (weather.com) or an encyclopedia, look up the average rainfall in the rainforest of Ecuador, as well as the temperate region that children live in.
2. Make a graph reflecting the rainfall. Find the difference between the amounts of rainfall in each country.
3. Find out how much rain must fall in a region for it to be considered tropical or temperate.
4. Calculate how much more rainfall would have to fall in your area for it to be considered a rainforest.
5. Using the technology resources from the Rainforest Alliance find links to activities that define the interrelationship between bromeliads and tree frogs: Bromeliad: A Plant with its Own Water Tank (Available at <http://www.rainforest-alliance.org/programs/education/kids/hands-on-projects/bromeliad.html>)
6. Have students research the characteristics of a bromeliad and identify which tree frogs use this as a home.
7. Using the Paper Bromeliad Pattern from the bromeliad activity, have children make their own model of a bromeliad and describe how this is an appropriate home for a tree frog.

- Children will describe the micro-system of a bromeliad, identifying at least four essential characteristics of this home.

Step 3B – CREATE (Tasks Related to Standard Indicators)

Challenge

Students will compare and contrast the characteristics of a tree house for human children in the rainforest with the bromeliad “tree house” of the frog.

Materials

- Books: **How to Build Treehouses, Huts and Forts** and **Treehouses You can Actually Build** by Stiles Designs
- Book: **Afternoon on the Amazon** by Mary Pope Osbourne
- Paper, pencils

Procedure

1. Discuss the design of a tree house that might be built in the children’s home environment.
2. Read and show: **How to Build Treehouses, Huts and Forts** and **Treehouses You can Actually Build** by Stiles Designs.
3. Read aloud the Magic Tree House book **Afternoon on the Amazon** by Mary Pope Osbourne.
4. Have students draw a tree house that they would like to build using a tree from their local environment.
2. Students each write a short adventure story that uses the local tree house as a magic doorway that transports them to a tree house in the rainforest.
6. Draw the treehouse in the rainforest that students are transported to, describing the issues of:
 - Where to Build
 - Finding Lumber
 - Safety
 - Rope Bridge
 - Emergency Escape Hatch
 - Trolleys, Pulleys, & Swings
 - Railings and Steps
 - Ropes & Ladders
 - Tree Movement
 - Tree Injury
7. Compare and contrast the rainforest tree house that is suited for human children with the bromeliad “tree house” that is suited for the tropical tree frog.

Discussion questions:

- a. How would the tree house in the rainforest be different than the one in your neighborhood?

- b. What kind of tree would it be in?
- c. What kinds of animals, insects, weather, plants would they encounter from their rainforest treehouse?
- d. How is your tropical treehouse different than that of the tree frog?

Step Four – PRESENT (Edit work/Students Orally present project)

Challenge

Students describe the survival needs of the tropical tree frog and how the bromeliad provides these needs. Students describe how their rainforest treehouse is different than the bromeliad home and how it provides survival needs for humans.

Materials

- Treehouse drawings from Step 3B

Procedure

1. In a gallery display, present the different models of treehouses that have been created by students.

LESSON 2 ASSESSMENT RESULTS:

Teacher observations of tasks with rubrics as listed below, as well as collected work samples.

Assessment Guidelines	3 = P (Proficient)	2 = S (Satisfactory)	1 = NW (Needs Work)
1. Student depicts four biological characteristics of each species – tree frogs and humans - comparing and contrasting the reasons for such characteristics based on environmental conditions.			
2. Student represents the different environments that exist for temperate and tropical frog species through a drawing.			
3. Student researches and charts the rainfall and resulting environmental conditions in temperate and tropical environments.			
4. Student constructs a paper bromeliad from the provided model.			
5. Student constructs or represents pictorially a treehouse for humans suited for both a temperate and a tropical environment and compares them to the frog shelters.			