The Amazon Rain Forest

Grade level: 4
Content-Based ESL

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FLA 518
Introduction
The Amazon Rain Forest

Unit overview:
This unit is designed to integrate language learning with content in the areas of science, social studies and language arts. Students will learn about the geography, climate and makeup of the Amazon Rain Forest. They will learn about different kinds of life found within the rain forest. They will develop an understanding of the interdependence of living things in the rain forest, as well as the concept of deforestation. Students will work collaboratively to research, create knowledge and participate in the learning process. Students will demonstrate understanding through a variety of oral and written activities throughout the unit.

Student population:
This unit is designed for fourth grade students in a content-based ESL class. The class is a mix of early production beginners and more advanced students. Many are native Spanish-speakers. The time for each class period is 40 minutes.

Materials not already included in unit
- Rain Forest Secrets by Arthur Dorros
- Nature's Green Umbrella: Tropical Rain Forests by Gail Gibbons
- Here is the Tropical Rain Forest by Madeleine Dunphy
- The Great Kapok Tree by Lynne Cherry
- Teacher generated pictures (possibly from the internet)
- Paper
- Envelopes
- Stickers
- Computers
- Materials for terrarium (see Lesson 2)

Source of lessons:
The original lessons come from a variety of sources including the following:
- Rain Forest (Scholastic, 1996)
- Life in the Rainforest (Milliken Publishing Company, 1997)
- Meg Nicks www.eduplace.com/tview/pages/g/The_Great_Kapok_Tree_Lynne_Cherry.html
- www.eduweb.com

Learning goals:
- I want my students to know where the Amazon Rain Forest is found.
- I want my students to know what the different layers of the rain forest are, and about the different kinds of habitats found in the rain forest.
- I want my students to have an understanding of the climate of the rain forest.
- I want my students to know about the different kinds of life found in the rain forest and how they are interdependent.
- I want my students to investigate one kind of animal found in the rain forest which they can teach the class about and demonstrate their knowledge with some sort of tangible product.
Learn basic components of rain forest

Map rainforest

KWL chart

Compare climates of the rain forest and New England

1. What is a rain forest? Where are rain forests found in the world?

2. What is the climate of a rain forest?

3. What are the layers of the rain forest?

Make a terrarium

4. What animals live in the rain forest?

Sing a song about the layers

Each group becomes an expert of one layer

Research and synthesize information

5. What can we learn about the rain forest from *The Great Kapok Tree*?

Writing assignment: What would your animal say to the man who was going to cut down the tree in the story?

Activity on interdependence

Research animal and create a written description of their characteristics.

Read *Here is the Tropical Rain Forest* by Madeleine Dunphy

Creates a written description of the characteristics of their layer
Standards

Language Standards:
ESL Standards for Pre-K-12 Students
Goal 2, Standard 1: To use English to achieve academically in all content areas: Students will use English to interact in the classroom

Goal 2, Standard 2: To use English to achieve academically in all content areas: Students will use English to obtain, process, construct and provide subject matter information in spoken and written form

Goal 2, Standard 3: To use English to achieve academically in all content areas: Students will use appropriate learning strategies to construct and apply academic knowledge

Goal 3, Standard 1: To use English socially and culturally appropriate ways: Students will use the appropriate language variety, register, and genre according to audience, purpose and setting

Content Standards:
Science Curriculum Framework, CT State Department of Education
Properties of Plants and Animals: How Are They Alike and Different?
PreK-2.5: Many different kinds of living things inhabit the earth.

Weather and the Sky: What is Going On Up There?
PreK-2.8 Weather conditions can be measured, described and predicted.

Habitats: How Do They Support Life?
3.3 Organisms can survive and reproduce only in environments that meet their basic needs.
3.4 All animals depend on plants. Some animals eat plants and others eat the animals that eat the plants.

Earth Materials: How Do We Use Them to Improve Our Lives?
3.6 Earth materials provide resources for all living things, but these resources are not unlimited and should be conserved

Language Arts Framework, CT State Department of Education
Students will: use appropriate strategies before, during and after reading in order to construct meaning.
   Grade 4.1 activate prior knowledge and establish purpose for reading
   Grade 4.7 draw conclusions and substantiate them by using the text

Students will: communicate with others to create interpretations and evaluations of written, oral and visual texts.
   Grade 4.2 participate in small-group and whole-class teacher-led discussions around a common topic

Students will: use descriptive, narrative, expository, persuasive and poetic modes.
   Grade 4.1 write for specific audiences to entertain, inform, explain, persuade and delight in the imagination
Students will: employ research skills

Grade 3.2 select and organize information from various sources for a specific purpose
Grade 4.5 use available technology to conduct research

Social Studies Framework, CT State Department of Education
9: Places and Regions

Students will use spatial perspective to identify and analyze the significance of physical and cultural characteristics of places and world regions.

12: Human and Environment Interaction

Students will use geographic tools and technology to explain the interactions of humans and the larger environment, and the evolving consequences of those interactions.
Lesson 1
Lesson 1: What is a rainforest? Where are rain forests found in the world?

Language objectives:
Students will describe the basic components of a rain forest.
Students will read information about the location of the Amazon Rain Forest.
(ESL Goal 2, Standard 2)

Content objectives:
Students will understand what a rain forest is.
Students will identify on a map where the world’s rain forests are found.
Students will research which countries the Amazon Rain Forest is in, and circle them on the map.
(Social Studies 9, 10; Language Arts 4.5)

Functions:
Reading    Writing    Navigating a web site    Labeling
Drawing    Classifying    Following directions

Notions:
Rain forests    Geography    Weather
Animals    Plants    Personal information

Materials:
1. Teacher must prepare in advance several pictures the following with a magnetic strip on the back:
   - Animals found in the rain forest such as a tree frog, parrot, sloth, monkey and jaguar
   - Plant life found in the rain forest such as a kapok tree, vines, and bromeliads
   - Items not found in a rain forest such as sky scrapers, taxis, street signs or wildlife native to Connecticut or other non-rain forest locations such as squirrels, pine trees, polar bears, igloos, etc.
   - Weather conditions such as rain, snow, etc.
   - Small duplicate pictures of the items found in a rainforest (one copy for each group)
2. Rain Forest Secrets by Arthur Dorros
4. Large paper with a web
5. Makers
6. Glue
7. Sentence strips
8. World map unlabeled for each student
9. Continent labels
11. KWL chart with a card for each student

Time:
Two forty minute class periods

Classroom setup:
Students should be placed in groups of three.
<table>
<thead>
<tr>
<th>Vocabulary:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parrot</td>
</tr>
<tr>
<td>Snake</td>
</tr>
<tr>
<td>Flowers</td>
</tr>
<tr>
<td>Rainy</td>
</tr>
<tr>
<td>Monkey</td>
</tr>
<tr>
<td>Sloth</td>
</tr>
<tr>
<td>Vine</td>
</tr>
<tr>
<td>Jaguar</td>
</tr>
<tr>
<td>Kapok Tree</td>
</tr>
<tr>
<td>Hot</td>
</tr>
<tr>
<td>Sunny</td>
</tr>
<tr>
<td>Frog</td>
</tr>
<tr>
<td>Fern</td>
</tr>
</tbody>
</table>
Introduction: 10 minutes

On the chalkboard write: *Rainforest = El bosque lluvioso*

Tell the students that they will begin to learn about the rainforest. Language and content objectives will be written on the board. Ask a student to read the objectives, and then have the class read them together.

Each class member is given two cards to place in the KWL chart. More advanced students should be able to write a sentence about what they already know, and what they want to know. Beginner students should be encouraged to either write one word, or to draw a picture for the category of what they know. For the second category, if they are having trouble coming up with something that they want to know more about, they can point to something that interests them in a picture of a rainforest. The teacher or a more advanced student can then write that on a card for them to be placed in the chart for future reference.

Separate the board into two sections with a line. Label one half “Things that *are* part of the rainforest” and the other “Things that *are not* part of the rainforest.” Show the students the pictures one at a time, and say out loud the name of the picture. Ask which category each belongs in. A volunteer may come to the board to place the picture in one of the categories. More advanced students should be able to create a sentence as they place the pictures, such as “Taxis are not part of the rainforest.” While beginner students should be able to say *yes* or *no* as they place the pictures.

Mini-lesson: 15 minutes

After all of the pictures have been placed, read to the students *Rain Forest Secrets* by Arthur Dorros. Be sure to point out specifics from the pictures, and also refer to the pictures on the board when appropriate. Also show the illustrations from *Nature’s Green Umbrella* by Gail Gibbons to give the students yet another visual overview of the rainforest.

After reading, return to the pictures on the board. Ask the students if they would like to make any changes to the categories in which they were placed.

Application: 10 minutes

Remove the pictures from the board of “Things that *are not* part of the rainforest”. Give to each group a large, piece of paper with the web, a marker, and an envelope with copies of the pictures of things found in the rainforest. Each group will create a web to organize the pictures into categories to help explain their relationship to the rainforest.

Beginning students will use a web with the categories filled in for them. They will glue the pictures on the web over the circle with the correct label.

The advanced students will have to label the categories. They will have one or two examples from each category given for them. They must also glue the pictures on accordingly.
Assessment:  5 minutes

Advanced students then create one or two sentences to summarize their web which they write on the sentence strip and share with the class. For example, “In the rainforest it is hot, sunny and it rains. There are lots of different plants and animals in the rainforest.” If they are stuck, give them a sentence starter for more support.

Beginning students will fill in a worksheet to label the pictures from each category. Post some webs and sentence strips on a bulletin board after the activity under the heading: “What is a rain forest?”

Introduction:  5 minutes

In their groups students are given a blank world map with the equator visible, a marker, and labels of the seven continents. They are given three minutes to discuss and fix the labels to the map based on their prior knowledge of geography. They are also given a marker to put an X on the map for where each student is from.

Mini-lesson:  12 minutes

Using the overhead projector and a transparency of the world map, ask students to help label the continents. Once the continents are accurately labeled, students make any necessary corrections to their own maps. The groups then share with the rest of the class the country and continent that they are from using their group map as a visual aid. Beginner students who do not yet have the language to describe where they are from can simply point to the map on the overhead.

Again using the transparency, show the map where the rain forests of the world are colored in. Students must use their marker to color in on their own map where the rain forests are. Ask the students if they notice any thing about the location of the rain forests – discuss how they are all very close to the equator and why. Students label the equator on their map. To support beginner students, draw a picture of a sun along the equator to help facilitate their understanding.

Application and Assessment:  23 minutes

http://www.eduweb.com/rainforest/worldmap.html

In the same groups, students go to the above web site and are asked to find the location of the Amazon Rain Forest. Explain that The Great Kapok Tree takes place in the Amazon Rain Forest, which the class will read later in the unit.

Give the students modified directions for the web site. Advanced students should be able to follow directions directly from the site to help them find the information they need, but beginners will need to rely on the directions provided by the teacher. They must circle and label the Amazon Rain Forest on their map. On a separate worksheet they must also list the continent and the 6 countries in which the Amazon Rain Forest is found. This information is all on the web site. For beginner students, give them a printout of the web page they are looking for with the information missing. They can use that page to help them complete the worksheet in which they identify the continent and countries where the Amazon is found, as the information missing is numbered to match the worksheet.
Finally, post maps and a few worksheets on the bulletin board under the heading: "Where is the Amazon Rain Forest?"
Summary of Modifications: Lesson 1

Objectives:
Throughout the unit language and content objectives will be written on the board. Students will read them at the beginning of each lesson so they know what is expected of them for the lesson, and what they will be learning about. This is the first step in activating schema and making the students aware of their prior knowledge in relation to what they will learn.

Native language support:
Since many ELLs are native Spanish speakers, it will benefit them to have native language support even if it is to identify the topic of the unit. By writing the equivalent of “Rain forest” on the board in Spanish it will enable them to begin thinking about the topic which will help them to complete the KWL activity.

KWL chart:
Beginner students are allowed to draw pictures or to use one word in the chart if their language is not advanced enough for them to complete full sentences on the cards. This way they are still activating their prior knowledge and participating in the activity.

Pictures of things associated with the rain forest:
This activity helps introduce students to new vocabulary using pictures for association. It also helps them to demonstrate prior knowledge. Beginning students can demonstrate their knowledge regardless of their level of English as they can physically place pictures under the correct heading, while advanced students can orally describe what is found in a rain forest at the same time they are placing the pictures in the right category.

Rain Forest Secrets:
By slowing the pace of reading and pointing to pictures in the story an on the board when appropriate, the students of all levels will have a better chance of understanding the text.
**Web / Graphic Organizer:**

By working in groups students are able to refer to the expertise of their classmates. The nature of group work also involves oral interaction, giving the students the opportunity to negotiate meaning with one another. By putting the pictures and words of what they have learned about the rain forest so far into a graphic organizer, it will help them to synthesize the information using language based on their level of ability. The beginners will be given a web with the words to help them become familiar with the new vocabulary. They will have to match pictures to words, and practice writing the words again on the worksheet in the correct blanks. This will help them gain familiarity with vocabulary words, and visually see what the rain forest is made up of. Advanced students will have greater linguistic abilities, and will therefore have to produce more through the summarizing sentence strips. They can be given sentence starters if needed to help guide them towards success.

**Display:**

Displaying the students' graphic organizers with a heading will give them vocabulary and information to refer to in future lessons. This is helpful for students of all language levels.

**Labeling continents:**

Again, by working in groups students are able to negotiate meaning and to help one another. Giving the students labels with the continents on them gives the students the necessary language support for this activity, which they might not yet have. Having all students mark an X on the map where they are from will give them a point of reference to the rain forest, and will also make the activity more meaningful because it is connected to them as individuals. When it is time to share with the class which country and continent each student is from, beginners should be allowed to simply point to the map and say the name of their country, while more advanced students should be able to give a complete sentence when describing their origin.

**Amazon Interactive Web Site:**

Beginner students would have trouble reading the directions on the web site, but should still be given the opportunity to use the computer to find the necessary information. They have two modifications to help them with this assignment. The first is a set of directions with
simplified language and pictures. The second is a print out of the web page they are looking for. Some of the information needed will be missing from the sheet, but they will be able to narrow their focus to a specific part of the page to find the information. This will help them to identify when they have found the correct web page and location of the Amazon Rain Forest, and will help them to identify exactly what the information is they are looking for which they can copy onto the worksheet. Both of these modifications should help them to complete the task successfully.
Rainforest

Animals
- Sloth
- Jaguar
- Snake
- Parrot
- Monkey

Weather
- Hot
- Sunny
- Rainy

Plants
- Kapok Tree
- Vine
- Flowers
- Fern

(Web for beginner students)
Where Are the Rainforests?

Where are the rainforests of the world? Draw them on the map below.
Directions for Amazon Interactive Website

1. Use your mouse to click on the map to find the Amazon.

2. Look for the words: That's right! to appear above the map. Use the back arrow to return to the map of the world to keep looking for the Amazon.

3. Draw a circle around the Amazon on your map.

4. Write which continent the Amazon Rain Forest is on.

5. Write six countries where the Amazon Rain Forest is found.

6 (especially for beginners, but will take all 5th graders)
Amazon Interactive
Where's the Amazon?

That's right!

The Amazon spreads across much of ____________ and __________ all have Amazonian regions.

(2) (3) (4) (5) (6) (7)

(for beginners)

http://www.eduweb.com/rainforest/rainforest2.html

4/3/2005
The Amazon Rain Forest is found on the continent of (1)___________________.

The Amazon Rain Forest spreads across the countries

(2)_____________________, (3)_____________________,

(4)_____________________, (5)_____________________,

(6)_____________________ and (7)_____________________.
Rainforests of the World

Arctic Ocean

Atlantic Ocean

Equator

Pacific Ocean

Indian Ocean

Rainforests of the world
Nature's Green Umbrella
Tropical Rain Forests
Gail Gibbons
Special thanks to James Doherty,
General Curator at the New York
Zoological Society, Bronx, New York

The illustrations in this book depict animals, trees, and plants
from tropical rain forests all over the world.

A portion of the earnings from this book is being donated for tropical rain forest preservation.

Watercolors, colored pencils, and India ink were used for the full-color artwork.
The text type is 17-point Berkeley Old Style.

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Summary: Describes the climatic conditions of the rain forest as well as the different layers of
plants and animals that comprise the ecosystem.
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574.92642'0913—dc20 93-17569 CIP AC
Green leaves, wet leaves. The air is hot and steamy. Everything is moist. The skies darken and it begins to rain. It pours on nature's green umbrella, the tropical rain forest.
Most rain forests are found in warm, wet climates near the equator. These areas are called the **tropics**. When the sun shines, temperatures can reach 90 degrees Fahrenheit. They rarely fall below 70 degrees. Many tropical rain forests stay green year-round.
Trees and plants TRANSPIRE a watery vapor into the air through their leaves.

Rain forests help create their own wet climates. They are thick with plant life. These plants and trees soak up rainwater from the soil and return it to the air through transpiration. About half the transpired water falls back down on the forest as rain—lots of rain! It rains more than 200 days a year in most rain forests. Sometimes as much as 240 inches of rain falls each year.
Scientists believe some tropical rain forests have existed for 100 million years. Today they cover about 7 percent of the earth's land surface. Pushed together, they would be just about the size of the United States. Living in them are at least half of the earth's species, or kinds, of plants and animals. Scientists are constantly discovering more. A single acre of rain forest, about the size of two football fields, may have over 300 different kinds of trees. In the United States or in Europe, a similar area of forest may have only 12 kinds. The earth's biggest rain forest is the Amazon forest in South America. It is home to more than 1600 species of birds and about a million different kinds of insects.
The rain forest, with its millions of plant and animal species, makes up a special community called an ecosystem. This term comes partly from a Greek word meaning "house" or "place." From treetop to beneath the forest floor, all parts of the ecosystem work together to make sure that the rain forest thrives. Of the many ecosystems on earth, tropical rain forests are the most complex.
OXYGEN is a gas found in the atmosphere. Animals, including people, need it to breathe.

CARBON DIOXIDE is a gas released into the air when animals exhale. Cars and factories create carbon dioxide, too.

The life of all rain forest ecosystems begins with sun, air, water, and soil. Green plants take in carbon dioxide from the air and water and minerals from the soil. Their leaves contain chlorophyll, a substance that uses energy from the sun to turn these materials into food. During this process, called photosynthesis, oxygen is released into the air.
To Brian C. and
his new cousin.

With special thanks to Gordon Orians,
Director, Institute for Environmental Studies,
University of Washington,
for reviewing text and art for this book.

Rain Forest Organizations For more information about rain forests you can write to:

The Children's Rainforest P.O. Box 936
Lewiston, ME 04240

Conservation International
1015 18th St., NW
Suite 1000
Washington, DC 20036

Friends of the Earth/U.K.
2628 Underwood Street
London N17JU United Kingdom

Global Tomorrow Coalition
1325 G St., NW
Suite 915
Washington, DC 20005

International Union for the Conservation of Nature and Natural Resources
Avenue Mont Blanc
1196 Gland
Switzerland

Missouri Botanical Garden
P.O. Box 299
St. Louis, MO 63166

National Audubon Society
801 Pennsylvania Ave., SE
Washington, DC 20003

National Wildlife Federation
1400 16th St., NW
Washington, DC 20003-2266

National Zoological Park/
Smithsonian Institute
Washington, DC 20028

The Nature Conservancy
1815 North Lynn Street
Arlington, VA 22209

Rainforest Action Network
301 Broadway, Suite A
San Francisco, CA 94133

Smithsonian Tropical Research Institute
APO
Miami, FL 34002-0011

The Wilderness Society
1400 Eye St., NW
Washington, DC 20005

Wildlife Conservation International
New York Zoological Society
Bronx, NY 10460

World Wildlife Fund/Conservation Foundation
1250 24th St., NW
Washington, DC 20037

World Wildlife Fund/U.K.
Panda House
Godalming
Surrey GU7 1XR United Kingdom

These organizations can provide classroom materials.

There may be a "rain forest" close to your home. Some zoos and museums have rain forest exhibits.
Have you ever been to a rain forest? If not, you've probably heard of rain forests. Sometimes people call them "jungles." In rain forests you can find colorful birds calling, monkeys leaping through trees, giant flowers—more kinds of plants and animals than anywhere else on earth.
Most rain forests are tropical rain forests.

They are in the tropics, near the equator.

From the air, a lowland tropical rain forest looks like a green ocean. It stays green all year.
A rain forest is a good place for growing plants, with year-round warm temperatures of 70°-90°F (22°-32°C) and plenty of sunlight and water.

Rain forests get from six feet to more than thirty feet of rain a year. Most afternoons it rains—often very hard. Inches of rain can fall in just a few hours.

Plants soak up much of the water that falls in the rain forest, but some of the water is carried away by rivers.
The Amazon river, flowing through the biggest rain forest in the world, carries one-sixth of all the earth’s water that flows into oceans. Along the river, trees and plants form a wall of green. The rain forest’s rich plant life provides food and homes to an incredible number of mammals, birds, and insects.

Fruit-eating macaws flap into the sky. Fish gobble fruit that splatters into the water. A family of giant otters, as big as people, splashes in the river, playing, and chasing fish to eat. A caiman floats in the river, looking like a log.
By the riverbank, where there is plenty of sunlight, rain forest plants grow thick and tangled.
Big animals also make the forest floor their home. A giant anteater slurps up a lunch of termites with its long, sticky tongue. Tapirs, peccaries, and deer chew on plants and seeds in the Amazon rain forest, while jaguars watch.

There are different large animals in other rain forests. Leopards live in African and Asian rain forests. Tigers can be found in Asia. The big animals on the forest floor are rarely seen by people. They stay hidden in the rain forest.
Listen, it is quiet. At first all you can hear is the *pat pat pat* of raindrops dripping from the leaf tips above. A bird calls, yodeling a song. Then *thud!* a piece of fruit falls nearby. A monkey is dropping part of its breakfast. A group of spider monkeys dangles and leaps high up in the trees, rustling the leaves.

There are many layers of life in the rain forest. Each layer provides a different kind of home to the plants and animals that live there. The top layer of trees, called the *canopy*, is a thick garden of leaves basking in the sunlight.
Lesson 2
Lesson 2: What is the climate of a rain forest? How does it compare to that of New England?

Language objectives:
Students will read about and describe the climate of a rain forest.
Students will read directions about how to create a terrarium.
(ESL Goal 2, Standard 2)

Content objectives:
Students will research and compare the rain fall amounts of the Amazon Rain Forest and New England.
(Science PreK-2.8; Social Studies 10; Language Arts 4.1; Language Arts 4.5)
Students will create a terrarium and learn how it is similar to a rain forest.
(Science 3.3)

Functions:
Reading  Writing  Navigating a web site
Drawing  Measuring  Following directions

Notions:
Rain forests  Geography
Plants  Weather

Materials:
2. Tape measure for each group, or one for the groups to share
3. Modified directions for web site
4. Worksheet for website
5. Sheets of construction paper cut into heights of 12”
6. Rainfall measuring device.
7. Terrarium Materials (for each group)
   Large plastic or glass bottle for each group with wide mouth lid
   Sand
   Peat moss
   Small pan of water (such as a peanut butter jar lid)
   Small plants: mosses, ferns, begonias, houseplants

Time:
Two forty minute class periods

Classroom setup:
Students should be placed in groups of three.

Vocabulary:
Climate  Temperature  Terrarium
Rainfall  Wind  Moisture
Foot (measurement)  Soil
Introduction: 5 minutes

Students help to read objectives. Pin vocabulary word *climate* to shirt, and tell students that will be their main vocabulary word for the day. Write a definition of climate on the board: *the average weather conditions of a place described by temperature, rainfall amounts and wind.*

Ask students to describe the climate of New England. Have the students break the descriptions down by season, as it might be difficult for them to think of average yearly weather conditions since New England weather is constantly changing. Advanced students can create sentences to describe the New England climate. Beginner students can circle the words to describe the climate of New England. Both levels of students should be given a worksheet including the three components of climate to help them be thorough in their descriptions.

Groups share their introduction activity to the class. The teacher writes on the board a description for each component of climate for each season which the students can refer later in the assessment section of the lesson.

Mini-lesson: 10 minutes

Ask the students if they can tell anything about the climate of the Amazon Rain Forest based on its name. Give the students an introduction to the climate of the Amazon using the same vocabulary as used in describing the climate of New England. Refer to the maps from the last lesson to note how the equator plays a factor in temperature. Show pictures of the rain forest layers to demonstrate how the canopy traps heat and moisture.

Application: 15 minutes

In groups students go to the website: [http://www.eduweb.com/rain/rainfall.html](http://www.eduweb.com/rain/rainfall.html) to research rainfall amounts. Give all levels of students modified directions for the website and activity. Each group has a worksheet in which they will color in a square for each foot for the rainfall amounts of the Amazon and New England. For a reference to the amount of rain, they also have to help measure each others height, and color in one square for each foot of their height. In case the students are not familiar with our system of measurement, show them how to measure a foot using the tape measure. Demonstrate how to measure the height of one or two students, and how they will be coloring in one square for each foot of height on their worksheet. If they are unfamiliar with using feet and inches, allow them to round off to the nearest half foot.

Finally, post graphs and a few worksheets on the bulletin board under the heading: “What is the climate of the Amazon Rain Forest?”

Assessment: 10 minutes

As a class, create a Venn diagram to compare climates of New England and the Amazon. Over the diagram write the question: *Is the climate of New England ever like the climate of the Amazon?*

If time, students as a class create a life size representation of the amount of rainfall of New England, the Amazon and a student of average height in the class as a display somewhere in the classroom or school building to give them an even more concrete visual representation of the rainfall amounts.
For the duration of the unit place a rainfall measuring device outside of the classroom so the students can actually begin to measure real rainfall amounts in New England. This will also help them become more familiar with measuring in inches and feet.

**Introduction: 10 minutes**

Introduce the students to the vocabulary word *terrarium* and show an example of one. Give an overview of how a terrarium is similar to a rain forest in that it traps heat and moisture.

**Mini-lesson and Application: 25 minutes**

Introduce students to vocabulary words and ingredients needed for making the terrarium. This will vary based on the kinds of plants you choose, but be sure to include words such as soil, slant, pond, fern, moisture, etc.

Give groups modified directions for making a terrarium. Especially for beginner students, model one step at a time and allow the groups to complete the step before moving on. Advanced students could be given the opportunity to follow only the modified written directions.

**Assessment: 5 minutes**

Throughout the rest of the unit students keep a log of what happens in the terrarium, such as to see if the plants grow, or if moisture is visible, etc. Beginner students can draw pictures of their observations, and label the parts of the terrarium. Advanced students can create sentences (along with drawings) to note their observations of the terrarium.
Summary of Modifications: Lesson 2

Vocabulary word label:

By pinning *climate* to the teacher’s shirt the students will know what the focus of the lesson is, and because they are seeing it throughout the lesson, they will remember it. By placing the definition on the board, it will also help them to remember the components by which climate is measured: temperature, wind and rainfall.

Description of New England climate:

Giving students a worksheet broken down into both seasons and the three components of climate will help them to focus their description much more easily than had they simply been asked to describe the climate of New England without the worksheet. Beginner students have all of the language given to them; they just have to choose what is appropriate. Since the students are working in groups, if some of them have not lived in New England for an entire year and are not familiar with all of the seasons, other group members can help.

Amazon Interactive Website:

Students have two modifications to help them with this assignment. The first is a set of directions with simplified language and pictures. While this is especially important for the beginners, it will help students of all levels of English. The second is a worksheet for them to record their findings on. By comparing the rainfall amounts of New England and the Amazon to something the students are very familiar with, their height, it will give them a better idea of how much rain the Amazon actually gets because their frame of reference relates directly to them. Pictures at the top of each column give them a clue about what sort of information they are recording.

Venn Diagram:

This activity gives the students a visual representation connecting something they are directly familiar with to something they have had little direct interaction with. It combines a visual with text, which gives them additional support and yet another way to identify the information.
Modeling tape measure use:

The students might not be familiar with the US system of measurements, or how to use a tape measure. By modeling its use the students will know how to measure their height in feet when they get to that part of the activity.

Rainfall measuring device:

The idea of measuring rainfall can seem rather foreign to some students, regardless of their language. If it rains during the unit, it will help them connect a rainstorm that they experience to the kinds of rainstorms it would take to equal the approximate 9 feet of rainfall the Amazon gets each year.

Making a terrarium:

Students will have two modifications for this activity. They will have modified directions to follow. They will also have the teacher modeling each direction for them one at a time. Therefore, the beginner students have the benefit of seeing the directions written out clearly. If they do not have the language to fully understand the directions, they also have the support of the teacher demonstrating each step. Because the teacher will wait for all students to finish a step before modeling another, the students will be sure not to miss anything. Advanced students will have the flexibility to read the directions on their own to try to complete the project if they do not need the additional support of the teacher.
### Climate

**Circle the words below that describe the climate of New England in the SPRING**
(March - June)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Rainfall</th>
<th>Wind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot</td>
<td>A lot of rain</td>
<td>A lot of wind</td>
</tr>
<tr>
<td>Warm</td>
<td>Some rain</td>
<td>Some wind</td>
</tr>
<tr>
<td>Cool</td>
<td>Little rain</td>
<td>Little wind</td>
</tr>
<tr>
<td>Cold</td>
<td>No rain</td>
<td>No wind</td>
</tr>
</tbody>
</table>

**Circle the words below that describe the climate of New England in the SUMMER**
(June - September)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Rainfall</th>
<th>Wind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot</td>
<td>A lot of rain</td>
<td>A lot of wind</td>
</tr>
<tr>
<td>Warm</td>
<td>Some rain</td>
<td>Some wind</td>
</tr>
<tr>
<td>Cool</td>
<td>Little rain</td>
<td>Little wind</td>
</tr>
<tr>
<td>Cold</td>
<td>No rain</td>
<td>No wind</td>
</tr>
</tbody>
</table>
Circle the words below that describe the climate of New England in the FALL
(September - December)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Rainfall</th>
<th>Wind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot</td>
<td>A lot of rain</td>
<td>A lot of wind</td>
</tr>
<tr>
<td>Warm</td>
<td>Some rain</td>
<td>Some wind</td>
</tr>
<tr>
<td>Cool</td>
<td>Little rain</td>
<td>Little wind</td>
</tr>
<tr>
<td>Cold</td>
<td>No rain</td>
<td>No wind</td>
</tr>
</tbody>
</table>

Circle the words below that describe the climate of New England in the WINTER
(December - March)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Rainfall</th>
<th>Wind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot</td>
<td>A lot of rain (or snow)</td>
<td>A lot of wind</td>
</tr>
<tr>
<td>Warm</td>
<td>Some rain (or snow)</td>
<td>Some wind</td>
</tr>
<tr>
<td>Cool</td>
<td>Little rain (or snow)</td>
<td>Little wind</td>
</tr>
<tr>
<td>Cold</td>
<td>No rain (or snow)</td>
<td>No wind</td>
</tr>
</tbody>
</table>
Climate

Circle the words below that describe the climate of New England in the SPRING (March - June)

Temperature  
Rainfall  
Wind

Circle the words below that describe the climate of New England in the SUMMER (June - September)

Temperature  
Rainfall  
Wind
Circle the words below that describe the climate of New England in the FALL
(September - December)

Temperature

Rainfall

Wind

Circle the words below that describe the climate of New England in the WINTER
(December - March)

Temperature

Rainfall

Wind
1. Read the description of how many feet of rainfall the Amazon gets each year. On your worksheet in the first column, color in one square for each foot of rainfall.

2. Use your mouse to click on the map of the United States to find New England. On your worksheet in the middle column, color one square for each foot of rainfall.

3. Use your tape measure to find out how tall your group members are. In the last column, color in one square for each foot of how tall you are.
Name:
Date:

Directions: Color in one square for each foot based on the questions below.

How many feet of rain does the Amazon Rainforest get every year?

10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

How many feet of rain does New England get every year?

10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

How many feet tall are you?

10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1
Directions for making a Terrarium (Rain forest in a bottle)

1. Make soil:
   Mix a \( \frac{1}{2} \) cup of gravel, a \( \frac{1}{3} \) cup of sand and a \( \frac{1}{3} \) cup of peat moss.

2. Make a mountain:
   Put the soil mixture into the bottle. Make a slant with the mixture so that it is higher on one side of the bottle and lower at the other.

3. Make a pond:
   Put water in the small pan. Put the pan in the bottle in the low end of the soil mixture, and bury it so the sides of the pan are level with the soil.

4. Make a forest:
   Put plants in soil mixture.

5. Make it "rain":
   Place lid on top of jar to trap moisture. Place terrarium in the sunlight.
Houghton Mifflin English

Venn Diagram

Write details that tell how the subjects are different in the outer circles. Write details that tell how the subjects are alike where the circles overlap.
Lesson 3
Lesson 3: What are the layers of the rain forest?

Language objectives:
Students will read about the layers of a rain forest.
Students will write about the layers of the rain forest.
Students will present information to the class on the layers of the rain forest.
Students will sing a song about the rain forest layers.
(ESL Goal 2, Standard 2; ESL Goal 2, Standard 3)

Content objectives:
Students will research one layer of the rain forest to learn about its characteristics and inhabitants.
Students will create visual representation of their rain forest layer.
(Language Arts 4.2; Language Arts 3.2; Social Studies 9 and 10; Science PreK-2.5)

Functions:
Reading    Writing    Presenting information
Drawing    Summarizing    Singing

Notions:
Rain forests    Animals    Plants

Materials:
Model of rainforest layers prepared by teacher
Re-written text on each layer of the rain forest
Copy of individual pictures of each layer from Evan-Moor Corp.
Copy for each student of green Rain Forest Layers paper from Scholastic.
Song World Above the Ground written on poster board with key vocabulary words in bold.

Time:
Two forty minute class periods

Classroom setup:
Students should be placed in groups of three or four students. The class should have at least four groups, one for each rain forest layer.

Vocabulary:
Emergent    Jungle    Layer
Canopy    Leaves    Branch
Understory    Trunk    Vine
Forest Floor    Roots


Introduction and Mini Lesson: 15 minutes

Students help to read objectives.

Write the names of the rain forest layers on the board, as well as the sentence description about each as given in the model of the rain forest layers. Show students the model. Have an advanced student volunteer to read the sentence about each, and refer to the model for clarification and visual clues about the information being read.

Students repeat out loud the layers of the rainforest as they do TPR for each. For the emergent layer have them stand up tall and reach their hand over their head. For the canopy they can lower their hand to the level of their head. For the understory they can lower their hand to their stomach and for the forest floor their knees or feet.

Introduce the song World Above the Ground (to be sung to the tune of When your happy and you know it clap your hands). Use TPR in the song, such as the actions learned for canopy and forest floor. Use finger to point up for when the title appears in the song. Create actions to represent the different animals. The teacher will model the song and the first few times through will use slowed speech. Sing one line, which the students repeat and mimic the teacher’s actions. Beginners can simply listen and mimic the actions for the first two times the song is sung. They should be able to join the advanced students in repeating after they have heard it a few times. Be sure to return to the song throughout the unit for practice.

Application: 40 minutes

Each group of students is assigned a layer to summarize and to present to the class. Each group first makes the green Rain Forest Layers paper where they divide the paper into the layers. It gives a brief description of the layer and the animals that live there. The groups are also given the re-written text on the layer they are learning about, which is where most of their information will come from.

Each member of the group has a role. Choose from the following roles based on the number of students in each group: reader, writer, editor and presenter. Students work together to summarize the text from both the green paper with information on their layer and the re-written text. They are given a list of what they need to include in their summary. Be sure to review this information with the class before they begin to work.

Advanced students will be able to answer the questions and create a paragraph summary which they will present to the class. They will write a draft, allow the editor to make any corrections, have a brief conference with the teacher, and “publish” a final copy on paper to be put on display. During the teacher conference be sure to give feedback on grammar and accuracy of information.

Beginner students will not write a paragraph. Instead, they will be given the same questions as the advanced students, with four choices of answers. They must circle the best answer for each, using the texts as a reference. The teacher should be sure to check in with the beginners when not conferencing with the advanced students. They will need help looking for the information or might want feedback on their accuracy.
Each group will also color in a copy of a picture of their rain forest layer. When the groups are finished the pictures will be put together to look like the whole forest.

**Assessment: 15 minutes**

The presenter from each group explains their layer to the class. They should be allowed to read their summary if they are more comfortable doing that than just talking about their findings. Beginner students should also be allowed to read the answers that they circled with the information on their layer. Finally, post summaries on display next to visuals of the layers under the heading: “What are the layers of the Amazon Rain Forest?”
Summary of Modifications: Lesson 3

Model of rain forest:

When first introducing students to the concept of the rain forest layers it will be useful for them to have a 3-D model. They will be able to see that the emergent layer is the tallest and made up of only a few trees. They will be able to see that the canopy leaves and branches make a platform of vegetation. This visual gives the teacher something to refer when the students are introduced to each layer and helps the students to clearly see the definition of each layer.

World Above the Ground (Song):

Using a song helps the students become familiar with vocabulary and increases their fluency. In this case it also exposes the students to key vocabulary words from this unit in a new way. Those key words are put in bold as a modification because they are central to the unit and students’ attention will be drawn to them. Because the students will repeat the words after the teacher they should not have any fear of pronouncing the words incorrectly. Having the words written on a poster gives them the opportunity to practice reading and remember the song any time they have the opportunity to look back at the poster. The use of TPR or actions in the song gives the students yet another association with the vocabulary, which will help them to give meaning to those words and will address the needs of kinesthetic learners. A second modification to the song was to take out the sentences in parenthesis from the original version to allow the song flow more easily when the students repeat the words after the teacher.

Group work:

Students are asked to research a layer of the rain forest, synthesize the information and present it to the class. This can be a large assignment for English Language Learners. There are several modifications made for this activity. First, by working as a group the students can call on each other’s expertise and use language to negotiate meaning. Each student has a role in the group which will help them to stay on task. The text was modified in two ways to help the various levels of students in the class. The text was re-written to make it easier to comprehend. Sentences were made shorter and some of the vocabulary was revised to make it consistent with vocabulary being used in this unit. Also, important information was put in bold. This is information that they might want to use in their presentation. The green Rain Forest Layers paper is helpful for the students because it gives a short summary of the layers which supports the larger text they have read. Also, it introduces animals who...
live in that layer in picture and word form. Therefore, if students were not already familiar with the animals in their layer they have a visual reference in context of what they are learning about.

In terms of writing their summary all students are given a list of specific information they need to look for and include in their summary and presentation. Advanced students are expected to produce a paragraph about their layer. They are given the chance to produce a draft of their paragraph first which they can edit and have feedback from the teacher before they produce a final copy. Beginner students do not yet have the language to produce a paragraph, and will need more support. Therefore, instead of writing a paragraph, they are given the language in the form of a list of questions with four possible answers. They must look through the text on their layer to find the best answer among the four to circle.

Finally, when all groups put their visual together with the synthesized information it will help create the “big picture” in which students will have a better idea of how the rain forest layers relate to one another.
Layers of the Rain Forest

Make a stand-up display showing the layers that make up a rain forest.

1. Color the pictures. Cut along the heavy lines.
2. Fold on the dotted lines so that the pictures stand up and the words can be seen.
3. On a sheet of 5" x 8" tagboard, arrange the pictures one behind the other in order of height. Glue them so they stand up on the tagboard.

The emergent layer is made up of tall trees that rise above the rain forest's canopy.

Teacher to prepare in advance to use in introduction to the layers.

Teacher: This project is continued on page 13. Reproduce both pages on heavy paper.
Layers of the Rain Forest

The canopy is the main top layer of the rain forest. It is made up of trees whose tops are very close together.

The understory is made up of shrubs, ferns, and small trees.

The forest floor is made up of fungi (plants that do not have flowers or leaves), mosses, and decaying leaves.

Teacher: This project is continued from page 12. Reproduce both pages on heavy paper.
World Above the Ground

In the jungle there's a world above the ground
Leaves and branches touch the sky
In the CANOPY so high
In the jungle there's a world above the ground.

The CANOPY is plush and lush and green
Nearly 60 feet or more
Up above the FOREST FLOOR

The CANOPY is home to many beasts.
Some may never, ever go
To the FOREST FLOOR below

They leap and climb and fly among the trees
Monkeys, spiders, sloths and slugs
Frogs and snakes and birds and bugs

They leap and climb and fly among the trees.
EMERGENT LAYER

Emergent trees are 130 to 180 feet tall. These trees grow far apart from each other. They get lots of sunlight. Emergent trees have small leaves and straight trunks. Their roots are shallow. They grow buttresses which are roots that spread out at the forest floor.

When emergent trees die and fall down, smaller trees get more sunlight. These smaller trees can then grow and become emergent trees. In the past it has been hard for scientists to learn about the emergent layer because it is so high. They have developed a sky-raft which sits on top of the rain forest. The sky-raft has helped them to discover that there are 30 million kinds of insects.

CANOPY

The canopy is between 60 and 130 feet tall. The branches and leaves of the canopy trees make a platform. This is where most of the rain forest animals live, such as monkeys, snakes, birds and insects. There is lots of noise and activity from the different kinds of animals. There is lots of food and shelter for the animals in this layer. The animals almost never have to leave the canopy.

The canopy catches lots of sunlight. Only a little bit of sunlight gets below the canopy to other layers because the canopy is so thick. The leaves on canopy trees get lots of rain. The leaves have special tips so the rain drips down to other layers. This helps the leaves to stay dry and healthy.
UNDERSTORY

The understory is 60 feet tall. It is made up of the trunks of canopy trees, shrubs, plants and smaller trees. Small trees grow slowly because there is little sunlight. They are waiting for an emergent tree to fall down to give them more space and sunlight to grow. Some understory plants have leaves that grow very big, up to 20 feet. This helps them to absorb more sunlight. Other trees have adapted to the shade and do not need as much sunlight to grow. Vines called lianas attach themselves to young trees. As the young trees grow up towards the sunlight, the lianas get a free ride to the canopy layer. They spread out at the canopy and attach to many trees.

THE FOREST FLOOR

The forest floor has lots of shade, and almost no sunlight. Very little plant life grows on the forest floor. The soil does not have what plants need to be able to grow. As leaves, branches and dead animals from the other layers fall to the forest floor, they break down quickly. The high temperature, moisture and termites, earthworms and fungi help break them down. The nutrients from this matter are quickly absorbed by the trees roots.
THE LAYERS OF THE RAIN FOREST

Read the information about your group's rain forest layer. Circle the correct answers to these questions about your group's rain forest layer.

1. How tall is your layer of the rain forest?
   - 130 - 160 feet tall
   - 60 - 130 feet tall
   - 60 feet tall
   - 0 feet tall (on the ground)

2. What kinds of plant life are found in your layer of the rain forest?
   - Tree trunks, shrubs, plants and small trees
   - Branches and leaves which make a platform
   - Very little plant life; the roots from other trees
   - Emergent trees

3. What kinds of animals are found in your layer?
   - Jaguar, red-eyed tree frog, tree boa constrictor
   - Agouti, anteater, worms, termites
   - Morpho butterfly, squirrel monkey, quetzal
   - Bat, toucan, sloth

4. How much sunlight does your layer get?
   - Lots of sunlight
   - Little sunlight
   - No sunlight; lots of shade

5. Are there other interesting facts about your layer?
   - Matter that falls to the floor is broken down quickly into nutrients and absorbed into tree roots.
   - Scientists made a sky-raft to learn about this layer.
   - The animals never have to leave this layer.
   - Lianas are vines which attach to other trees and get a free ride towards sunlight.
THE LAYERS OF THE RAIN FOREST

Find the answers to these questions about your group's rain forest layer in the information given to you.

1. How tall is your layer of the rain forest?

2. What kinds of plants are found in your layer of the rain forest?

3. What kinds of animals are found in your layer?

4. How much sunlight does your layer get?

5. Are there other interesting facts about your layer?
This level is called the

It __________________________

___________________________

___________________________

___________________________

This is the __________________________

layer.

It __________________________

___________________________

___________________________

___________________________

Copy pictures for each group to color their layers. If possible, enlarge them.
The second layer from the top is the _______________.

It _______________

The part growing on the ground is called the _______________.

It _______________
The Review

*The Great Kapok Tree* is a wonderful book to read when studying the environment. Lynne Cherry gives us a glimpse of the marvels of the rain forests, and what will be lost if they continue to be destroyed. The back of the book contains a useful map of the locations of the rain forests, as well as a diagram of the many layers that make up a rain forest. The illustrations are remarkable, with lots of detail!

The Activities

1. After reading the book to your class, engage them in a discussion about what the rain forest means to so many animals. Try to recall as many animals mentioned as you can, and list what they use the rain forest for.

2. **Draw a diagram of the layers of the forest:** Emergents, where macaws live; the Canopy, where woolly monkeys and tamarinds play; the Middle layer, home to coati and hoatzin; the Shrub layer, where plant life and insects thrive; and the Herb layer, home to anteaters and tapirs.

3. Have each student choose a layer, and write a report on what life in that layer is like. What would we find in that layer?

4. Finally, have the entire class help to paint a wall sized mural depicting the layers of the rainforest. Label the layers and even the animals so that others may learn something new as well!
THE RAIN FOREST REVUE

Narrator: Ladies and gentlemen, welcome to “The Rain Forest Revue.” Today we’ll be taking you on a journey into the exciting and mysterious world of tropical rain forests—a world where it’s warm and green year-round and where it rains nearly every day.

JUNGLE RAIN

Drip, drop, pour, and patter
Plip, plop, spit, and spatter
Drizzle, dazzle, drain
Jungle rain

Slip, slop, ripple, run
Trickle down, fall upon
Leaf and limb and flower
Jungle shower

Crash, smash, lightning flash
Raindrops splash, creatures dash
Sticky, steamy, warm
Jungle storm

Rivers run, full and flowing
Plants are lush, green, and growing
Clouds begin to fizzle
Jungle drizzle

Sun comes out, shines and gleams
Scattered drops and rising steam
Are all that now remain
Of jungle rain

snap fingers in rhythm
rub hands together in rhythm, getting faster
pat knees in rhythm, getting even faster
rub hands together in rhythm, getting slower
all groups say—rhythms slow down and finally stop

WORLD ABOVE THE GROUND

(Sing to the tune of “When You’re Happy and You Know It”)

In the jungle there’s a world above the ground
(Above the ground!—say it out loud)

In the jungle there’s a world above the ground
(Above the ground!)

Leaves and branches touch the sky
In the [canopy] so high
In the jungle there’s a world above the ground.
(Above the ground!)

The [canopy] is plush and lush and green
(Lush and green!)

The [canopy] is plush and lush and green
(Lush and green!)

Nearly 60 feet or more
Up above the [jungle floor]
The [canopy] is plush and lush and green.
(Lush and green!)

The [canopy] is home to many beasts
(Many beasts!)

The [canopy] is home to many beasts
(Many beasts!)

Some may never, ever go
To the [forest floor] below
The [canopy] is home to many beasts.
(Many beasts!)

They leap and climb and fly among the trees
(Among the trees!)

They leap and climb and fly among the trees
(Among the trees!)

Monkeys, spiders, sloths, and slugs
Frogs and snakes and birds and bugs
They leap and climb and fly among the trees.
(Among the trees!)

All groups repeat the first verse together.
The Layers of a Rain Forest

EMERGENT LAYER
Thrusting their leafy heads above the canopy platform, the emergent trees are 130 to 180 feet tall. These giant trees are thinly dispersed (only one or two in every couple of acres) and are drenched in open sunlight. They generally have small pointy leaves, long straight trunks with few branches, and very shallow root systems. To support their mass, many species grow "buttresses"—broad woody roots that spread horizontally just under the forest floor. When these giants, weakened by damage or old age, fall, they create a wide clearing and allow sunlight to reach the smaller trees, which eventually replace them.

Scientists are coming up with new techniques to study this once inaccessible part of the jungle, including an inflatable "sky-raft" that literally sits on top of the rain forest. The more scientists look, the more they find. For instance, biologists increased a previous estimate of 2 million insect species to 30 million!

CANOPY
The limbs and leaves of the tall slender trees form a dense platform of vegetation 60 to 130 feet off the ground. This is the canopy—the layer supporting the majority of rain forest animals. Insects hum and nibble, reptiles slither along limbs, monkeys chatter as they swing between branches, and jewel-colored birds dart among leaves. The canopy offers such an abundance of shelter and food that many animals never need to descend.

Apes in the understory
Catching most of the sunshine, the canopy allows only a tiny amount of light to reach the ground. The leaves on their knobby crowns also absorb the first impact of rain, but they have pointed shapes that form little spouts or "drip tips" that allow water to run off. This keeps the leaf surfaces dry and discourages mold and mildew.

**UNDERSTORY**
The understory rises to about 60 feet and consists of the trunks of canopy trees, shrubs, plants, and smaller trees. Some of the young saplings are slow growing, waiting for a giant to come crashing down and give them space and sunlight. Many remain in the shadows, their crowns growing long and pointed as they seek light.

While some plants grow huge leaves—up to 20 feet—to absorb as much light as possible, many have adapted to growing in shade and don't need much light for photosynthesis. Others, like the woody vines called lianas, attach themselves to young trees. As the saplings grow, the vines get a free ride toward the light, and once reaching the canopy may spread out among many trees.

**THE FOREST FLOOR**
The image we often see in movies of people hacking through jungles with machetes is necessary only near a river or some other clearing where sunlight reaches the floor. Most of the rain forest's ground level is in deep shade, and plant life is quite sparse.

Soil quality on the rain forest floor is very poor compared to temperate forests. A lot of "litter" falls to the ground (about 5 tons per acre every year!) in the form of leaves, limbs and trunks, and the remains of dead animals. The debris breaks down very quickly because of the high temperature, humidity, and the activity of termites, earthworms, and fungi. The organic matter, recycled into nutrients, tends to stay on the surface where it's quickly absorbed by the trees' shallow roots.
Lesson 4
Lesson 4: What animals live in the rain forest?

Language objectives:
Students will listen to and help read *Here is the Tropical Rain Forest* as a class.
Students will read about an animal found in the rain forest.
Students will write about an animal of the rain forest.
Students will present information to the class about their animal.
(ESL Goal 2, Standard 1; ESL Goal 2, Standard 2; ESL Goal 2 Standard 3)

Content objectives:
Students will research one rain forest animal to learn about its anatomy, diet and habitat.
(Language Arts 4.1; Language Arts 3.2; Science PreK-2.5; Science 3.4)

Functions:
Reading  Writing  Presenting information
Listening  Summarizing

Notions:
Rain forests  Animals  Diet
Anatomy  Habitat

Materials:
Book: *Here is the Tropical Rain Forest* by Madeleine Dunphy
Word flashcards of rain, frog, bromeliad, tree, sloth, eagle, monkeys, peccaries, jaguar, caiman, river (plant life should be in green, animals should be written in red and rain and river in blue)
Pocket chart
Transparency of rain forest animals
Print outs of information on rain forest animals from www.enchantedlearning.com
Copies of Animal ID cards (double sided for advanced students)

Time:
Two forty minute class periods

Classroom setup:
The class can be in a group at a meeting area while listening to the story. Then students can work independently at their desks.

Vocabulary:
Rain  Frog  Bromeliad
Tree  Sloth  Eagle
Monkeys  Peccaries  Jaguar
Caiman  River  Diet
Anatomy  Habitat
Introduction: 15 minutes

Students help to read objectives.

Read Here is the Tropical Rain Forest by Madeleine Dunphy. In each page a new word is introduced. Place the flashcard with the new word in the pocket chart. Students hear the word and say it. Point out the word in the pictures of the story. The next time it is repeated in the story point to the flashcard and the students will read it. Because all of the words are repeated on every page after they are introduced students will be reading a lot of the story themselves. Beginners can be allowed to simply listen silently the first few times they hear a word repeated, but should be able to join the class in repeating as the story goes along. Slow reading pace slightly to ensure that students will keep up.

Mini Lesson: 15 minutes

Have a brief discussion with the students, using the flashcards and the story, about the interconnectedness of rain forest life. (This will be discussed in greater detail in Lesson 5.)

Give each student a copy of the page with rain forest animals from Forests. Using the transparency as a model, students label the animals on their worksheets.

The students by now have had several references to animals in the rain forest: from their rain forest layers activity, from Here is the Tropical Rain Forest, and from Rain Forest Secrets. Have students choose one of these animals to research and present.

Application and Assessment: 40 minutes

Post the following definitions on the board:

Habitat – home; the place or environment where a plant or animal naturally or normally lives and grows (draw picture of a house)
Anatomy – the makeup or parts of an animal’s body (draw stick figure of person and label parts of body)
Diet – the food an animal eats regularly (draw picture of plate, fork and knife)
Carnivore – an animal that eats meat (draw steak)
Herbivore – an animal that eats plants (draw carrot)
Omnivore – an animal that eats meat and plants (draw steak and carrot)

Students research an animal found in the Amazon Rain Forest. Advanced students can have their choice of conducting their research online at www.enchantedlearning.com or reading printouts with highlighted text. If their language level is especially advanced they should also be given the opportunity to expand their research to include multiple sources such as library books or other websites. Beginner students will use the modified printouts from the website.

Beginner students will be expected to list nouns for the name, habitat, diet and anatomy of the animals. Advanced students will have to be more descriptive and include at least one adjective for each noun in particular relating to the anatomy of their animal. In addition, advanced students will also complete the back of their animal identification card to include other interesting facts about their animal.
information can be found in the printouts from Enchanted Learning, or from other research conducted online or in the library independently by the students.

Students draw their animal in its habitat at the top of the card.

Students share their identification card with the class. Students first read the information about anatomy, diet and habitat before they reveal which animal it is. Other students have the opportunity to guess. Post ID cards on the layers of the rain forest from the last lesson, so all students can see which animal lives in which part of the rain forest.
Summary of Modifications: Lesson 4

Here is the Tropical Rain Forest:

One of the reasons for reading this story with the class is to introduce them again to animals and plant life in the rain forest, and to begin to introduce the concept of interconnectedness among life in the rain forest. Two modifications are made for this story. The first is the flashcards with words from the story on them. Because this is not a big book, the students would otherwise have trouble reading the words directly from the book. This gives them the opportunity to see and read the words clearly. Since the words are written in a color according to classification, it gives the students another visual clue about the meaning of the word.

The second modification is to have the students participate in reading the story. This gives them a sense of ownership and accomplishment. It will also help them to remember the words. Because there is so much repetition in the book, even beginners should be able to read the vocabulary words on their own by the end of the story.

Research project:

To be able to complete the task of researching a rain forest animal students will first need additional vocabulary support. The definitions will be written on the board for introduction and for student reference during the activity. A simple picture will be drawn for each vocabulary word for added visual support. These vocabulary words match exactly what the students will be including in their animal identification card and what they will see in their research. The students need this consistency to develop understanding and to be able to create a product out of their research.

The text was chosen from www.enchantedlearning.com due to the labeled diagram of each animal, and because the text is broken down into logical categories. Modifications include highlighting of key words in the text. Key words related to anatomy are highlighted in yellow. Words related to diet are highlighted in pink. Words related to habitat are found in purple. Beginner students are expected to list items from each category as found in their text on their animal identification chart.

In relation to anatomy advanced students must find at least one adjective to describe each part of the anatomy they list. They should be able to recognize the adjectives based on their knowledge of vocabulary and English sentence structure. Since advanced students have greater language abilities they should be given the opportunity to further research their animal independently to find information to complete the front of the card or to find other interesting facts to go on the back of the card. When presenting information about their animal without revealing which animal it is, gives other students the
opportunity to practice their listening skills and apply what they have learned so far about rain forest animals.
Here Is the Tropical Rain Forest

Madeleine Dunphy

ILLUSTRATED BY Michael Rothman
Here is the tropical rain forest.
Here is the rain
that drizzles and pours
and may fall every day
in this lush and wet world:
Here is the tropical rain forest.
Here is the frog

who bathes in the rain

that drizzles and pours

and may fall every day

in this lush and wet world:
Here is the tropical rain forest.
Here is the bromeliad
that shelters the frog
who bathes in the rain
that drizzles and pours
and may fall every day
in this lush and wet world:
Here is the tropical rain forest.
Here is the tree,
which holds the bromeliad
that shelters the frog
who bathes in the rain
that drizzles and pours
and may fall every day
in this lush and wet world:
Here is the tropical rain forest.
Here is the sloth
that hangs from the tree,
which holds the bromeliad
that shelters the frog
who bathes in the rain
that drizzles and pours
and may fall every day
in this lush and wet world:
Here is the tropical rain forest.
Here is the eagle who hunts the sloth that hangs from the tree, which holds the bromeliad that shelters the frog who bathes in the rain that drizzles and pours and may fall every day in this lush and wet world: Here is the tropical rain forest.
Here are the monkeys
that flee from the eagle
who hunts the sloth
that hangs from the tree,
which holds the bromeliad
that shelters the frog
who bathes in the rain
that drizzles and pours
and may fall every day
in this lush and wet world:

Here is the tropical rain forest.
Here are the peccaries
that eat the figs,
which are dropped by the monkeys
that flee from the eagle
who hunts the sloth
that hangs from the tree,
which holds the bromeliad
that shelters the frog
who bathes in the rain
that drizzles and pours
and may fall every day
in this lush and wet world:
Here is the tropical rain forest.
Here is the jaguar
who stalks the peccaries
that eat the figs,
which are dropped by the monkeys
that flee from the eagle
who hunts the sloth
that hangs from the tree,
which holds the bromeliad
that shelters the frog
who bathes in the rain
that drizzles and pours
and may fall every day
in this lush and wet world:
Here is the tropical rain forest.
Here is the caiman
that fights the jaguar
who stalks the peccaries
that eat the figs,
which are dropped by the monkeys
that flee from the eagle
who hunts the sloth
that hangs from the tree,
which holds the bromeliad
that shelters the frog
who bathes in the rain
that drizzles and pours
and may fall every day
in this lush and wet world:
Here is the tropical rain forest.
Here is the river,
which is home to the caiman
that fights the jaguar
who stalks the peccaries
that eat the figs,
which are dropped by the monkeys
that flee from the eagle
who hunts the sloth
that hangs from the tree,
which holds the bromeliad
that shelters the frog
who bathes in the rain
that drizzles and pours
and may fall every day
in this lush and wet world:
Here is the tropical rain forest.
Here is the rain
that fills the river,
which is home to the caiman
that fights the jaguar
who stalks the peccaries
that eat the figs,
which are dropped by the monkeys
that flee from the eagle
who hunts the sloth
that hangs from the tree,
which holds the bromeliad
that shelters the frog
who bathes in the rain
that drizzles and pours
and may fall every day
in this lush and wet world:
Here is the tropical rain forest.
The animals shown below live in the tropical rain forests of Central and South America. Tropical rain forests also exist in Africa and Southeast Asia and in other lands along the equator. Tropical rain forests are very rich in wildlife — half of the world's animal and plant species make their home there.

Like many natural environments, tropical rain forests are threatened by human activities. If you would like to find out ways to help protect tropical rain forests, you can write to National Wildlife Federation, Division 811, 1400 16th Street, NW, Washington, DC, 20036.
Rain forest Animal Identification Card

Name: ____________________________

Habitat: __________________________

Diet: _____________________________

Anatomy: _________________________
Other interesting facts:
The keel-billed toucan, *Ramphastos sulfuratus*, is a South American bird with a huge beak. This social bird lives in small flocks in lowland rainforests. It is a poor flyer, and moves mostly by hopping around trees. Toucans roost in holes in trees. They have a croaking call that sounds like RRRRK.

**Anatomy:** The toucan is about 20 inches (50 cm) long. The toucan’s enormous bill is up to one-third of its length. The bill is brightly colored, light-weight, and edged with toothed margins. It has four toes on each foot; two toes face forwards and two face backwards. Males are slightly larger than females, but their coloration is similar.

**Diet:** Toucans eat mostly fruit, but also eat bird eggs, insects, and tree frogs. Toucans swallow fruit whole and then regurgitate the seeds; this disperses viable (living) seeds in the forest.

**Reproduction:** Females lay 1 to 4 white eggs in each clutch (a set of eggs laid in one nesting period). The eggs are laid in a hollow tree cavity. Both parents incubate the eggs, and both parents feed the chicks.
The Sloth is a slow-moving, nocturnal mammal that spends its entire life hanging upside-down in trees. This arboreal (tree-living) mammal is found in the tropical rain forests of South and Central America. The sloth is nocturnal (most active at night), and it sleeps about 15 hours each day.

**Anatomy:** Sloths have a thick brown (and slightly-greenish) fur coat and are about the size of a cat (roughly 2 feet = 61 cm long). They have a short, flat head, big eyes, a short snout, a short or non-existent tail, long legs, and tiny ears. Many sloths have colonies of green algae encrusting their fur, camouflaging the sloth in its forest environment.

**Behavior:** The sloth is an herbivore (a plant-eater) that eats at night. It eats leaves, tender young shoots, and fruit.

**Predators:** The jaguar and harpy eagle are the main predators of sloths. The sloth's main defense against predators is to claw and nip at an attacker. A camouflaged coat and slow movement make sloths hard to see among the leaves.
Scarlet Macaw

The Scarlet Macaw (*Ara macao*) is a large type of parrot that is found in tropical rain forests of Central and South America, including Mexico, Guatemala, Belize, Colombia, Ecuador, Peru, and Brazil. It lives in the canopy (the tree leaves) and emergent layer (the tops of the very highest trees) of the rainforest. Scarlet Macaws are an endangered species due to their capture as pets, and loss of habitat.

These noisy, magnificent birds can fly at speeds up to 35 miles per hour (56 kph), often flying in pairs or small flocks. In captivity, Scarlet Macaws have a life span of up to 80 years.

**Anatomy:** The Scarlet Macaw is about 35 inches (90 cm) long. The feathers are bright red with bits of yellow, orange and blue on the wings. The bill is very curved. The feet are zygodactylous; the 2 outer toes point backwards and grip in opposition to the 2 forward-pointing toes. Males and females are similar in appearance.

**Diet:** Scarlet Macaws eat fruit, seeds, and nuts. Like other parrots, they are seed predators; they destroy the seeds that they eat and do not disperse them. Some macaws are sometimes seen eating clay from river banks.

**Eggs and Nests:** Macaws nest in holes located high in deciduous trees. Females lay 2 plain white eggs in each clutch (a set of eggs laid at one time). Both parents incubate the eggs. The young stay with the parents for up to 2 years.

The Howler Monkey is the loudest **monkey** and the loudest land animal. The only animal that is louder than the Howler Monkey is the Blue Whale. The Howler's call can be heard up to three miles (4.8 km) away.

The Howler is the largest New World monkey (monkeys from **South, North, and Central America**). These social primates live high in the **trees** (the **canopy** of the **rain forests** of southern Brazil, northern Argentina, Paraguay, and Bolivia). Howlers have a life span of about 20 years. These monkeys are in decline due to a loss of habitat.

**Anatomy:** Adult male Howlers are black to brown; females and the young are lighter in color. Howlers grow to be about 2 to 4 feet (0.6 to 1.2 m) tall and weigh from 8 to 22 pounds (3.5 to 10 kg). They have a long tail, a short snout, and wide-set, round nostrils. Adults females usually have one baby at a time.

**Diet:** Howlers eat mostly **leaves**, but occasionally supplement their diet with **fruit** and **maggots**.

**Predators:** Large birds of prey (like the harpy eagle) prey upon the howler monkey.

Red-Eyed Tree Frogs are amphibians (animals that spend part of their lives under water and the remainder on land). These little frogs live in lowland tropical rainforests in Central America and northern South America. Red-Eyed Tree Frogs are nocturnal (most active at night); they rest on the undersides of large leaves during the day.

**Anatomy:** Red-Eyed Tree Frogs are named for their large, bulging, red eyes. These bright eyes may serve to startle predators. The body is bright green and the sides are blue with pale yellow stripes. The feet are red/orange; the upper legs are blue. They have long, powerful jumping legs, suction cups on the toes, and a very short backbone. Females (about 3 inches long) are larger than males (about 2 inches long).

**Life cycle:** Red-eyed tree frogs spend their lives near water (usually rivers) because they must return to the water to lay their eggs. Adult males make a loud croaking sound to establish their territory and to attract females. Female Red-Eyed Tree Frogs lay eggs on the undersides of leaves (that are right above the water); the male fertilizes the eggs as they are deposited. When the eggs hatch into tiny brown tadpoles, they fall into the water below. The tadpoles breathe with gills and swim with a tail. As they mature, they lose their tail, they develop lungs (for breathing air), and they become brightly colored.

**Diet:** The Red-Eyed Tree Frog is a meat-eater (carnivore). It eats mostly insects, catching them with its long, sticky tongue. It also eats other small invertebrates and sometimes will
even other eat small frogs.

**Enemies:** Some bats, snakes, and birds eat the Red-Eyed Tree Frog.
The Harpy Eagle is one of the largest eagles and most powerful birds of prey in the world. It is a magnificent meat-eater that lives in Central and South American rainforests. This large eagle makes whistling and clicking calls. It is an endangered species because of the fragmentation and destruction of its habitat, and also because of hunting.

**Anatomy:** Harpy Eagles are about 2.8 ft (86 cm) long and have a wingspan of about 6.5 ft (2 m). Females are about a third larger than males. On average, female harpies weigh 14-18 pounds (7-9 kg), and male harpies weigh 10-16 pounds (5-8 kg). Their curved talons are up to 5 inches (12.5 cm) long, as long as the claws of a grizzly bear.

**Diet:** Eagles are carnivores; they hunt and scavenge during the day (they are diurnal). Harpies eat sloths, monkeys, opossums, large reptiles (like iguanas), large rodents, and other birds. The eagle dives down onto its prey and catches it with outstretched, clawed feet.

**Eggs and Nests:** Harpy Eagles mate for life; they build a large nest made of sticks and twigs. Nests are usually located very high (often over 130 ft—40 m) in trees or on cliffs. Females lay 1-2 eggs in each clutch (a set of eggs laid at one time), but only one survives. The incubation period is about 53 to 56 days. Both parents care for the young.
Jaguar

Jaguars are wild cats that live in rain forests, swamps, deserts, and shrubby areas from South and Central America. These solitary felines often have dens in caves. Jaguars are territorial. They are very good swimmers. Jaguars are an endangered species due to loss of habitat and over-hunting by man.

**Anatomy:** These graceful cats grow to be about 4-6 feet (1.2-1.8 m) long; the tail is 2-3 feet (0.6-0.9 m) long. Jaguars are bigger than leopards, and their dark markings are arranged in a rosette of 4 or 5 spots placed around a central lighter-colored spot.

**Diet:** These large cats are **carnivores** (meat-eaters). They hunt mammals, reptiles, birds, and eggs, including capybaras, peccaries, tapirs, turtles, and alligators. They often bury their prey after killing it, in order to eat it later. They hunt mostly at night; they are **nocturnal**.
The Boa Constrictor is a large, solitary snake from Central and South American rainforests, savannas, and semi-arid areas. Boas are kept as house-snakes in parts of South America, where the boas help by catching and suffocating rats. The Boa Constrictor is related to the larger Anaconda. Boas give birth to live young; up to 64 2-ft (60-cm) long baby snakes are born at one time. All species of boas are either endangered or protected.

**Hunting and Diet:** Boa Constrictors are carnivores (meat-eaters). They mainly hunt at night (they are generally nocturnal). Boas kill by constricting (squeezing) the prey until it can no longer breathe. Sometimes they drown the prey. Like all snakes, they swallow the prey whole, head first. The boa's top and bottom jaws are attached to each other with stretchy ligaments, which let the snake swallow animals wider than itself. Snakes don't chew their food, they digest it with very strong acids in the snake's stomach.

Boa Constrictors eat birds, small mammals (like monkeys, peccaries, and rodents), and some reptiles (including iguanas, young crocodilians and lizards). After eating a large animal, the snake needs no food for a long time, and rests for weeks.

**Anatomy:** Like all snakes, Boa Constrictors are cold-blooded; they are the same temperature as the environment. They continue to grow all their lives, getting bigger and bigger each year. Adult Boa Constrictors average about 6 to 10 feet (1.8-3 m) long and weigh over 60 pounds (27 kg). The largest boa constrictor ever found was 18.5 feet (5.5 m) long. Boa Constrictors have coloration that camouflages them; they have varying patterns of cream, brown, tan, gray, and black with ovals and diamonds. The scaly skin glistens but is dry is to the touch. It has no fangs. The forked tongue senses odors. There are heat sensors under the upper lip; these help the snake locate warm-blooded prey, like mammals and birds.
Lesson 5
Lesson 5: What can we learn about the rainforest from *The Great Kapok Tree*?

**Language objectives:**
Students will listen to *The Great Kapok Tree* as a class.
Students will discuss interdependence among living things in the rainforest.
Students will write a letter from the perspective of a rain forest animal.
(ESL Goal 2, Standard 1; ESL Goal 2, Standard 2; ESL Goal 2, Standard 3; ESL Goal 3, Standard 1; Language Arts 4.2; Language Arts 4.1)

**Content objectives:**
Students will learn about interdependence among living things in the rainforest.
Students will develop an understanding of the chain of problems associated with deforestation.
(Science.PreK-2.5; Science 3.3; Science 3.6; Social Studies 12)

**Functions:**
Reading  Writing  
Listening  Discussing

**Notions:**
Rain forests  Animals  
Deforestation  Interdependence

**Materials:**
Book: *The Great Kapok Tree* by Lynne Cherry  
Word and picture flashcards for vocabulary words for playing “Concentration” 
Listening guide  
Index card with each character/animal from the story with a string attached so they can be worn around someone’s neck  
Paper for letter writing  
Envelops  
Large index card for post card writing  
Stickers for pretend postage stamps  
Card for each student for KWL chart

**Time:**
Three forty minute class periods

**Classroom setup:**
The class can be in a group at a meeting area while listening to the story and for the interdependence activity. The students might want clip boards to take notes on their listening guide.

**Vocabulary:**
Kapok Tree  Chop down  Ax  
Pollen  Oxygen  Homeless  
Toucan  Macaw  Tree frog  
Jaguar  Porcupine  Anteater  
Boa constrictor  3 toed sloth  Yanomamo Tribe
**Introduction: 20 minutes**

Students help to read objectives.

Introduce students to vocabulary words found in the book. First, have the students help to pair up a word card and picture. For new words that have not been seen yet in the unit, put a vocabulary list on the board with the Spanish equivalent as follows:

- **Pollen** – polen
- **Homeless** – destituido; sin casa
- **Oxygen** – oxigeno
- **Chop down** – cortar
- **Ax** – hacha
- **Porcupine** – puerco espín

Play the game “Concentration”. Mix the cards up and turn them so the word and picture are face down in columns and rows. One student can turn two cards over at a time. If the two cards match, they may leave them face up, if not, the cards are turned over again and another student has a turn, until all pairs are found.

**Mini Lesson: 30 minutes**

Give the students some background information on deforestation such as what it is, why and where it happens. Put a definition of deforestation on the board. “Deforestation: the action of clearing or chopping down forests”.

Give students listening/discussion guide and write the question on the board: How are the animals in the story connected to each other? Explain that the class will discuss the answer to the question after reading the text. Review the questions on the listening guide. Advanced students will just have the questions with key words in bold. Beginner students will have the same question with part of a sentence to answer. They must listen for a key word to fill in the sentence.

Read the story to the students twice. The first time read the story through without stopping to note the question flags. The second time through, read the question flags and ask the students for their thoughts. Give them a minute to write down some notes on their guide and allow for a brief discussion for each question.

**Application: 30 minutes**

Lead a guided discussion about the book regarding the central question: How are the animals in the story connected to each other? Refer to the individual questions on the listening/discussion guide. Write important points on the board. The class can generate a graphic organizer to help explain interdependence among the living things in the rain forest. It might look like a web with the Kapok Tree in the middle. This will depend on how the discussion is shaped based on student responses. It might be appropriate to introduce vocabulary words to help the students such as survival, shelter, etc.

Interdependence activity:
This activity might have to be modified to accommodate different numbers of students in the class. Each student chooses a card from a bag with the name of a character from the book on it and wears the card around his or her neck. One student’s role is the tree. He or she stands in the middle of the circle and holds a dowel with enough strings attached for each student. The other students stand in a circle around the Kapok Tree and take one of the strings attaching them to the tree. A narrator reads the
modified script developed by Alana Noseworthy which can be found in the original lesson plan section of lesson 5. If there are many students then there can be a narrator for each role. Advanced students will narrate while beginner students will participate by holding the string for each animal. If there are not many students, choose one narrator for the whole activity, or have the teacher be the narrator. As the text is read about each animal, their string is cut by the narrator (or another designated student), detaching them from the Kapok Tree. Following the activity, discuss what would happen to the animals if the tree had in fact been cut down and how they felt when they were separated from the tree.

**Assessment:** 40 minutes

As a follow up to the interdependence activity, students write a letter in the voice of either the animal they researched in lesson 4 or the animal they played the role of from the last activity. The letter should be a creative writing piece stating what the animal would say to the man cutting down the tree if it could talk. Review a letter writing format including date, greeting, body of the letter and a closure with signature. Advanced students will write at least one paragraph for the letter persuading the man to not cut down the tree and explaining why the tree is so crucial to their survival. Each student also will get an envelope in which to place their letter. Create a fictional mailing address. Students write their own return address. Give each a sticker to be used as a postage stamp.

Beginner students will create a post card rather than a letter. On the front of the post card they can draw a picture illustrating how they need they need the Kapok Tree for survival. On the back they can list the importance of the tree for their survival, such as food, shelter, etc. They should be specific to the animal chosen. They should also write the fictional mailing address on their postcard and be given a sticker to serve as a postage stamp.

Both advanced and beginners should write a draft before completing their final copy. They work with a partner to read and edit each other’s work before the final copy is created. Each student should have at least one comment for their partner on how their letter/post card could be better. Their suggestion could relate to spelling, amount of information, run-on sentences or sentence fragments, etc.

Students share their letters and postcards with the class.

Refer back to KWL chart from lesson one. Students fill out another card with what they learned about the rain forest. Review as a class what was learned.
Summary of Modifications: Lesson 5

Vocabulary introduction:

The students will already be familiar with some of the story’s animal vocabulary from their research projects, but this activity provides them with a review and will activate schema. To activate schema and introduce new words from the story the class plays a game where the students must match a word to its picture in “Concentration”. Using native language support for new vocabulary will help give meaning to the words in the game as they are taken out of context. However, when they are used in the story the students will have a rich context to associate them with.

Deforestation:

It is unlikely that students will be familiar with this term or the act of deforestation unless they come from an area that has experienced it. This is a concept that is central to the story The Great Kapok Tree and also to the study of rain forests. Therefore, the students will need to be given a bit of background on this concept before reading the story. Writing the definition on the board will give the students a visual clue and something they can refer back to later in the lesson. The definition was modified to include the verb chop down which is consistent with the vocabulary from the story.

The Great Kapok Tree:

This text was modified in several ways. First, the students are given a central question that they will discuss after reading the text. They are given listening/discussion guide that help them note key information from the text. This way, they are listening for a purpose. The class will have a guided discussion about what they learned from the story for which all of the students will be prepared. In the story there are question flags on specific pages that help the students focus their thoughts and begin to cultivate an idea of how to answer the central question posed about the story. This allows the students to develop an answer to the central question with several instances of supporting evidence from the text. Because the question flags match their listening/discussion guide the students will be made aware when to listen for information they need for their answers.

Specific words and phrases in the story are highlighted to help the listener to focus on crucial information. This information not only helps to answer the questions posed in the listening/discussion guide, but it also gives them the main idea on each page. The story is read twice to give the listener two opportunities to hear the information, to absorb the text and to think about possible answers to the central question.
Beginner students would not necessarily be able to produce enough language to answer the questions. Therefore, their listening/discussion guide has an answer to the questions in the form of a sentence with a key word missing. Some of the missing words are the vocabulary items that are written on the board with the Spanish equivalent. They have that additional support from list including how to spell the words.

When it comes time for the discussion the teacher might need to help the students with a few more vocabulary words as needed to help them synthesize the information and develop a cohesive answer to the central question. If the class is able to develop a web or graphic organizer as a result of their discussion it will help all students to visually see the concept of interdependence and the connection between all living things in the rain forest.

**Interdependence activity:**

In this activity the students are given the opportunity to empathize with the animals from the story. It gives advanced students practice reading out loud. All students have the chance to listen to the story in a summarized state which will again help them to review the content. This is an excellent activity to help them mentally prepare for their letter writing assignment. Since they will be writing from the perspective of their animal, this will help them begin to think like their animal.

**Letter writing assessment:**

This task serves as a culminating activity to help connect what they have learned about the rain forest and its inhabitants. Some students will not have ever written or received a letter and may not know what components are necessary. Therefore, it is important to review what is needed for letter writing with the students before writing begins. This is an important skill that they will use throughout their lifetime, but one which they will need the opportunity to practice. This applies to both letters and postcards.

Advanced students have a greater knowledge of the language needed for this assignment, which is why they are expected to create a paragraph to convey their message. Beginners will not yet have the amount of language needed to write a full letter, and will instead use illustration and a postcard format to convey their message. Both letter and postcard writing relates to the real world, which will make this activity meaningful for the students. Both groups of students will have support from language posted around the classroom from past activities in this unit. They will also have the web on the board from the guided discussion, as well as their listening/discussion guides. Students have the
opportunity to share their work with a peer before their final copy is written. This will allow them to have some feedback on their work and also to apply their editing skills.
Central question:

How are the animals in the story connected to each other?

As you listen to the story try to answer these questions:

1. How does the BEE make a connection to other living things in the rain forest?
   The bee brings ______________ from one flower to another. He helps them to grow.

2. How does the FROG make a connection to other living things in the rain forest?
   The frog knows that many animals and plants will be ______________ if the Kapok Tree is chopped down.

3. How does the JAGUAR make a connection to other living things in the rain forest?
   In the Kapok Tree the jaguar finds his ______________. He eats animals that live in the tree to survive.

4. How do the PORCUPINES make a connection to other living things in the rain forest?
   The porcupines know that trees produce ______________ that all living things need.

5. Why did the man decide not to chop down the tree in the end?
   The man realized how many animals depended on the ______________ to survive.
Central question:

How are the animals in the story connected to each other?

As you listen to the story try to answer these questions:

1. How does the **BEE** make a connection to other living things in the rain forest?

2. How does the **FROG** make a connection to other living things in the rain forest?

3. How does the **JAGUAR** make a connection to other living things in the rain forest?

4. How do the **PORCUPINES** make a connection to other living things in the rain forest?

5. Why did the man decide not to chop down the tree in the end?
THE GREAT KAPOK TREE
A TALE OF THE AMAZON RAIN FOREST
by Lynne Cherry

Central Question: How are the animals in the story connected to each other and to the Kapok Tree?
Two men walked into the rain forest.
Moments before, the forest had been alive with the sounds of squawking birds and howling monkeys. Now all was quiet as the creatures watched the two men and wondered why they had come.

The larger man stopped and pointed to a great Kapok tree. Then he left.
The smaller man took the ax he carried and struck the trunk of the tree. Whack! Whack! Whack! The sounds of the blows rang through the forest. The wood of the tree was very hard. Chop! Chop! Chop! The man wiped off the sweat that ran down his face and neck. Whack! Chop! Whack! Chop!

Soon the man grew tired. He sat down to rest at the foot of the great Kapok tree. Before he knew it, the heat and hum of the forest had lulled him to sleep.
A bee buzzed in the sleeping man's ear: "Senhor, my hive is in this Kapok tree, and I fly from tree to tree and flower to flower collecting pollen. In this way I pollinate the trees and flowers throughout the rain forest. You see, all living things depend on one another."

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How does the BEE make a connection to other living things in the rainforest?
A troupe of monkeys scampered down from the canopy of the Kapok tree. They chattered to the sleeping man: "Senhor, we have seen the ways of man. You chop down one tree, then come back for another and another. The roots of these great trees will wither and die, and there will be nothing left to hold the earth in place. When the heavy rains come, the soil will be washed away and the forest will become a desert."
A toucan, a macaw, and a cock-of-the-rock flew down from the canopy. "Senhor!" squawked the toucan, "you must not cut down this tree. We have flown over the rain forest and seen what happens once you begin to chop down the trees. Many people settle on the land. They set fires to clear the underbrush, and soon the forest disappears. Where once there was life and beauty only black and smoldering ruins remain."
A bright and small tree frog crawled along the edge of a leaf. In a squeaky voice he piped in the man's ear: "Senhor, a ruined rain forest means ruined lives . . . many ruined lives. You will leave many of us homeless if you chop down this great Kapok tree."

How does the FROG make a connection to other living things in the rain forest?
A jaguar had been sleeping along a branch in the middle of the tree. Because his spotted coat blended into the dappled light and shadows of the understory, no one had noticed him. Now he leapt down and padded silently over to the sleeping man. He growled in his ear: "Senhor, the Kapok tree is home to many birds and animals. If you cut it down, where will I find my dinner?"
Four tree porcupines swung down from branch to branch and whispered to the man: "Senhor, do you know what we animals and humans need in order to live? Oxygen. And, Senhor, do you know what trees produce? Oxygen! If you cut down the forests you will destroy that which gives us all life."

How do the porcupines make a connection to other living things in the rain forest?
Several anteaters climbed down the Kapok tree with their young clinging to their backs. The unstriped anteater said to the sleeping man: “Senhor, you are chopping down this tree with no thought for the future. And surely you know that what happens tomorrow depends upon what you do today. The big man tells you to chop down a beautiful tree. He does not think of his own children, who tomorrow must live in a world without trees.”
A three-toed sloth had begun climbing down from the canopy when the men first appeared. Only now did she reach the ground. Plodding ever so slowly over to the sleeping man, she spoke in her deep and lazy voice: "Senhor, how much is beauty worth? Can you live without it? If you destroy the beauty of the rain forest, on what would you feast your eyes?"
A child from the Yanomamo tribe who lived in the rain forest knelt over the sleeping man. He murmured in his ear: "Senhor, when you awake, please look upon us all with new eyes."
The man awoke with a start. Before him stood the rain forest child, and all around him, staring, were the creatures who depended upon the great Kapok tree. What wondrous and rare animals they were!
The man looked about and saw the sun streaming through the canopy. Spots of bright light glowed like jewels amidst the dark green forest. Strange and beautiful plants seemed to dangle in the air, suspended from the great Kapok tree.

The man smelled the fragrant perfume of their flowers. He felt the steamy mist rising from the forest floor. But he heard no sound, for the creatures were strangely silent.
The man stood and picked up his ax. He swung back his arm as though to strike the tree. Suddenly he stopped. He turned and looked at the animals and the child.
He hesitated. Then he dropped the ax and walked out of the rain forest.
Lynne Cherry traveled to the Amazon rain forest in Brazil to research the illustrations for *The Great Kapok Tree*. As she sat by a jungle stream, a troupe of monkeys swung through the trees above her head, a paca scurried by her feet, and a hummingbird hovered only a foot away.

She wrote and illustrated *The Great Kapok Tree* to give her readers a glimpse of the awesome beauty of the rain forest and the marvelous creatures that inhabit it, and to remind them that it is being destroyed at an alarming rate.

Lynne Cherry has written and illustrated many books for children, including *When I'm Sleepy, Who's Sick Today?*, and *If I Were in Charge of the World*. Among the awards she has won are the New York Academy of Science Annual Children's Book Award, National Science Teachers Association Award, and the New Jersey Institute of Technology Award for Outstanding Children's Book Illustration.

REINFORCED BINDING
PRINTED IN SINGAPORE

Gulliver Books
Harcourt Brace Jovanovich, Publishers
1250 Sixth Avenue, San Diego, CA 92101
111 Fifth Avenue, New York, NY 10003
Checklists
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<td>Concentration game</td>
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<td>Research rain forest layers</td>
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Original Lessons
ACTIVITIES

Parrot Talk KWL (LANGUAGE ARTS)

MATERIALS reproducible page 18 ♦ paper ♦ colored markers ♦ crayons ♦ tape or stapler

A KWL classroom chart helps students to keep track of what they Know about tropical rain forests, what they Want to find out, and what they've Learned.

DIRECTIONS

1. Make copies of the parrot pattern on page 18. Have students color some red, some blue, and some green. All can have yellow beaks.

2. Divide a section of wall or a bulletin board into three parts, with the third section twice the size of the first two. Label the first What We Know About Tropical Rain Forests; the second What We Want to Find Out, and the third What We've Learned About Tropical Rain Forests.

3. Challenge students to write facts they already know about the rain forest, such as "Many monkeys live there" or "Rain forests are hot and wet," on red parrot shapes. Collect the red parrots, sort out the duplicate facts, and attach them in the Know section.

4. Then ask the students what they want to find out about the rain forest. You can whet their imaginations with questions such as "Are all rain forests hot?" or "What's the biggest bug in the rain forest?" Ask them to write their questions on their blue parrot shapes and again collect, sort out the duplicates, and attach in the Want to find out section.

5. As your class ventures through its rain forest unit, Want to find out questions will be answered. Set aside some time every so often to invite students to answer as many of the these questions they can. The newly learned facts are then written on green parrot shapes, sorted for duplicates, and attached to the Learned section of the KWL chart. At the close of your unit, revisit the KWL chart by asking students to help you read and celebrate each rain forest fact. Students will be amazed at all they’ve learned.
What Makes a Forest?

- Make an overhead transparency of page 29.

Ask students to tell what they already know about forests. (You may need to ask questions to help get them started.)

Write their comments on a chart entitled “Forests.” Explain that there are different kinds of forests depending on the amount of rainfall and the types of trees. Show the rainforest transparency to help generate more information.

- Read books such as Exploring Forests by Barbara Behm & Veronica Bonar (Gareth Stevens Publishing, 1991) and Forest Life by Barbara Taylor (Dorling Kindersley, 1993), or show a video about forests. Discuss what students learned from the reading. Make additions or corrections to the class logbook page.

Have students write about forests for their individual logbooks using the form on page 4.

There are several types of forests—deciduous forests, coniferous forests, mixed forests—found around the world. The minibook on pages 35–38 describes several forest types. Because of space constraints, the forest activities in this section focus only on plants and animals in the rainforest. You may wish to develop your own activities for other types of forests.
What Is a Rainforest?

- Read books such as *Nature’s Green Umbrella: Tropical Rainforests* by Gail Gibbons (Morrow Junior Books, 1994), *Rain Forest* by Robin Bernard (Scholastic, 1996) and *The Magic School Bus Explores the Rainforest* by Joanna Cole (Scholastic, 1997), and watch a video about rainforests. Discuss the characteristics that make a rainforest different from other types of forests (temperature is hot most of the time, plenty of rain, air feels moist and steamy [humid], lots of plant and animal life).

Record information learned on a chart entitled “Rainforests” for the class logbook.

- If possible take a field trip to a zoo or aquarium that has a rainforest exhibit.

Layers of a Rainforest

- Reproduce page 30 for each student. Read the page together, name the layers, and describe what is found living at each level. Discuss how each layer is like a small habitat with certain plants and animals living there.

- Reproduce pages 31–32 for each student to use to sequence the layers of the rainforest. Students are to name each layer and write about it. Students then cut the sections apart and paste them in the correct order on a sheet of 12" x 18" (30.5 x 45.5 cm) construction paper. Provide rainforest books for students wanting to obtain more information about each layer.

- Add a page entitled “Layers in the Rainforest” to the class logbook.
Rainforest Plants

- Read about rainforest plants in books such as Inside the Amazing Amazon by Don Leesem (Crown Publishers, 1995) and Rainforest by Betsey Cheesen (Scholastic, 1997). Ask students to recall the plants they learned about and to tell one interesting fact about each plant.

  "Orchids don't have roots. They grow on other plants."
  "People use part of the kapok tree in life preservers."
  "Some of the plants we have in our houses came from the rainforest."

- Reproduce page 33 for each student. This page lists some of the items we use that come from plants in the rainforest. Read the list together. Have students match the name of each item to its picture, and then circle any items they have used.

- Add a page entitled “Rainforest Plants” to the class logbook.

Rainforest Animals

- Read about rainforest animals in books such as Animals of the Rain Forest by Stephen Savage (Raintree Steck-Vaughn, 1997) and Animals of the Rain Forest illustrated by Debora Burr (Flying Frog Publishing, Inc., 1997), or watch animal videos. Ask students to recall the animals they learned about and to describe how the animal has adapted to life in a rainforest.

  "A sloth has green stuff (algae) growing on its hair to help it hide in the trees."
  "Some frogs lay their eggs in the water trapped in plants."
  "Flying geckos glide from tree to tree."

- Have each student select one animal to paint. Reproduce the report form on page 34 for each student to complete. Pin the completed paintings and reports on a bulletin board for everyone to enjoy.

- Add a page entitled “Rainforest Animals” to the class logbook.

Summary Activities

- Reproduce the “Forest” minibook on pages 35–38 for each student. Read the book together to review facts about forests.

- Make any additional corrections or additions to the class logbook page on forests. Have students write about forests for their individual logs, using copies of the logbook form on page 4.

- Complete the “Rainforest” section of the Habitats chart begun on page 15.
Student Activity 1

The Great Kapok Tree

by Lynne Cherry

Introduction

In *The Great Kapok Tree*, the animals wanted to stop the man from cutting down the tree because the tree were their homes. Their tree was in the rain forest. There are rain forests in many parts of the world. Where?
With your teacher, please review your school's acceptable use policy for work on the Internet. Also, links to the web often change. Tell your teacher when you find a poor link in this guide.

The Task

Your job is to show on a map where the rain forests are located.

Before you start, you will need a pencil, eraser, and a blank map of the world. You will also need a Learning Log. A blank world map can be printed from the site below. Check with your teacher first.

Blank World Map

Later you will need crayons or felt pens to make your map look good.

The Process: Exploring the Web, Creating a Product

Before you start to follow the directions below, read all of them. If it's o.k. with your teacher, you may want to print them also.

1. Look at your blank paper map. Can you predict where the rain forests are? Very lightly, write some Rs on the map to show where you think the rain forests are.

2. Next, on your blank paper map, make a compass rose showing North, East, South, & West. Put it in the lower, right, corner. It should look like this:
3. Your map now needs to be labeled with the names of the seven continents. When you go to the World Map site, copy the seven continents neatly onto your map. Be careful - there is some extra information.

4. This blank world map shows the world. On it there are two lines going across. The bottom line is the Equator. Label the Equator on your map.

5. Now you need to draw an outline of the rain forest on your map. Go to the Amazon Interactive website. Draw on your map lightly so you can erase if you change your mind. Later you can color inside the outline you drew.

6. Make a key for your map.

7. After you color your map to make it look nice, look at where the rain forests are located. Are they all in a certain area? Write several sentences in your Learning Log.

How You Will Be Graded

Your map should:

- Be neat and easy to read.
- Accurately show where the rain forests are.
- Have a key and a compass rose.
- Show the continents labeled.

Your Learning Log should:
• Have one or two neat and correctly spelled sentences which tell what you decided about where the rain forests are located.
• Have the date written.

You may wish to put a mark on the map to show where you live. If you do, add the mark to your key.

• Resources:

  Blank World Map

  World Map (with continents labeled)

  World Map showing Equator

  Amazon Interactive (shows where rain forests are)

Activity 2 | Activity 3 | Activity 4
Key

A key shows what certain symbols or colors stand for on your map. For example:
Amazon Interactive
Where's the Amazon?

The Amazon is one of the world’s great rainforests. The Amazon river runs 3,000 miles from the Andes to the sea, and is longer than any river but the Nile. The vast Amazon basin covers more than two and a half million square miles, more than any other rainforest. Can you click on the Amazon?

Back to Amazon Interactive Home Page
Back to Educational Web Adventures
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http://www.eduweb.com/rainforest/worldmap.html
3/6/2005
The Amazon spreads across much of South America. Colombia, Ecuador, Peru, Bolivia, Brazil and Venezuela all have Amazonian regions.

Do you know where the word "Amazon" comes from?

- Snake found in the rainforest
- Greek myth
- Spanish explorer's wife
Amazon Interactive
Where did the word "Amazon" come from?

A Greek myth?

That's right!

Francisco de Orellana was a Spanish conquistador and the first European to travel the length of the Amazon river, in 1541-42. Along the way, he and his men ran into a tribe of fierce women warriors, each "doing as much fighting as ten Indian men." Orellana recalled the Greek myth of warrior women and named the entire river "Amazonas."

The Amazon women of South America were only one of many indigenous peoples which Orellana met during his expedition. Most lived along rivers, where canoes made transportation easy. Many of these Indians, or indigenous people, died from diseases brought by Europeans. Others died after being enslaved. Today, there are fewer indigenous people in the Amazon than there were 500 years ago. But other people also live in the Amazon. Who are they?

Who else lives there now?

- Conquistadors
- Mestizos (people with both European and indigenous ancestors)
- Aborigines
- Gringos (people from North America and Europe)
Student Activity 3

The Great Kapok Tree

by Lynne Cherry

Introduction

In the last activity you compared the climate of the Amazon to your town. How does rainfall in the Amazon compare to other places in the United States?

Disclaimer: With your teacher, please review what the rules are for working on the Internet. Also, links to the web often change. Tell your teacher when you find a link that doesn't work.

The Task

In your Learning Log you will write the names of the regions of the United States. You will find the names of...
these regions on a website and record the rainfall information for each area. Then you will look at the information you have gathered and write a summary of what you have learned.

The Process: Exploring the Web, Creating a Product

Before you start to follow the directions below, read all of them.

1. Go to the Amazon Interactive webpage.

2. Read what it says on the page. List in your Learning Log the Amazon and the nine U.S. regions written under the map.

3. Look at the rain gauge. Record how much rain the Amazon gets.

4. Click on the words Pacific Northwest written under the map and record the rainfall for that region.

5. Now find out and record the rainfall for each of the other regions.

6. Look at the information you have gathered. In your Learning Log, write a paragraph of several sentences to tell what you have learned.

How You Will Be Graded
Your list should be:

- Completely filled out.
- Completed neatly.

Your Learning Log should:

- Have at least three complete sentences in your paragraph.
- Show you have compared the rainfall of the Amazon with the United States.
- Have the date written.

Activity 1 | Activity 2 | Activity 4
Amazon Interactive
How rainy is the rainforest?

The Amazon gets nine feet of rain every year!

How much rain do you get where you live?

Click on your part of the continental U.S. to find out how precipitation (rain and snow) in your area compares to the Amazon.

(Apologies to those who live elsewhere.)

Pacific Northwest
West Coast

Rocky Mountains
Southwest

Great Plains

Midwest
Southeast

New England
East Coast

Back to Amazon Interactive Home Page
Back to Educational Web Adventures
Copyright 1996 Educational Web Adventures. All rights reserved.
A Rainforest in a Bottle

- Have the students assist as you make a class “rainforest” in a glass terrarium or help the students make individual “rainforests” in large, clear, wide-mouthed plastic containers with lids.

- Explain that a rainforest is enclosed much like a covered terrarium. In the rainforest, the canopy layer traps the heat and moisture, helping to make more “rain.”

Materials
- large bottle with a wide mouth or a glass terrarium
- gravel
- sand
- peat moss
- small pan of water
- small plants: mosses, ferns, begonias, houseplants
- optional: small tree frog, turtle, or salamander

Steps to Follow

1. Mix equal amounts of gravel, sand, and peat moss for the soil of the terrarium. This will give you good drainage and allow air in the soil.
2. Put the soil in the terrarium. Make sure that the surface of the soil is at a slant (three or four inches thick at one end, slanting to the level of your pond [see step 3] at the other end).
3. Bury the pan of water at the low end. (This is the “pond” and will provide the basis for your water cycle.)
4. Put in the small plants.
5. Add a small animal if you wish.
6. Cover the top of the terrarium with a lid or piece of glass. (If you have added an animal, you must allow some air into the terrarium. Punch holes in the lid or adjust the glass to leave a small opening.) The water in the pond will provide enough moisture for the plants. The “rainforest” will need sunlight.

Feed the animal sparingly and remove uneaten food or it will decay. Frogs and salamanders will eat bits of chopped meat, earthworms, and flies. Turtles eat bits of hard-boiled egg, lettuce, berries, and commercial turtle food.
WebQuest

Hide and Seek in the Rainforest

A WebQuest for Grades 2-3

Designed by
Colleen Muldoon
cmm9v@virginia.edu

Introduction

The rainforest is a home to many different plants and animals. In fact, more plants and animals live in the rainforest than anywhere else in the world. Animals of all shapes, colors, and sizes live in the rainforest.

The rainforest is divided into four main layers: the forest floor, the understory, the canopy, and the emergent layer. Lots of different animals live in each layer. If you visited the rainforest, it would be impossible to see all the animals hiding in each layer.

Let's take a journey into the rainforest and play "Hide and Seek."

The Task

We have been reading and learning about different types of animals in the

rainforest. Now you get to play your favorite game, "HIDE AND SEEK."

Your task is to research ("seek" information on) an animal that lives in the layer of the rainforest that has been assigned to you. Record the information about your animal on the "Hide and Seek" information sheet. You will need to find out where your animal lives, what it eats, what it looks like, and what makes it special from other animals.

Once you have completed your "Hide and Seek" information sheet, you will use this information to write a "Who Am I?" riddle. Other students in the class will try to guess your animal based on your clues and find your "hiding" animal on the class mural.

The Process

1. Meet the animals of the rainforest. Click below on the layer of the rainforest that you have been assigned. Read about the animals living in that layer. Choose one animal to research. Fill in the "Hide and Seek" information sheet for that animal.

   - **Forest Floor Layer**
   - **Understory Layer**
   - **Canopy Layer**
   - **Emergent Layer**

2. Draw a picture of your animal. Remember to include lots of details. Cut out your animal and "HIDE" it on the rainforest mural in the classroom.

3. Write a "WHO AM I?" riddle for your animal. Use your "HIDE and SEEK" information sheet to help you write your riddle. Your clues should include information special to your animal.

4. We will end our unit on the rainforest with a RAINFOREST CELEBRATION. You will read your riddle and play "HIDE AND SEEK" in the rainforest. Make sure to practice reading your riddle before you share it with the class. You and your classmates will have an opportunity to try and find each other's animals on the class mural based on your riddles.
## Evaluation

You will be graded on each part of the Hide and Seek Webquest. See rubric below.

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<td>&quot;Hide and Seek&quot;</td>
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<tr>
<td>Information Sheet</td>
<td>Minimal to no information filled in on information sheet. Inaccurate/messy.</td>
<td>At least half of the information is completed on information sheet. Some inaccurate information/messy.</td>
<td>Information sheet accurately completed. Written neatly.</td>
<td>More than the required amount is included on information sheet. Written neatly.</td>
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<tr>
<td>Animal Illustration</td>
<td>Minimal to no effort on illustration of animal. Little or no color included. (i.e. pencil sketch)</td>
<td>Some effort on illustration of animal. Crayons used. A few details.</td>
<td>Detailed, colored illustration of animal reflecting information learned.</td>
<td>Excellent detailed illustration reflecting animal's unique characteristics. Used more than just crayons to make illustration.</td>
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<tr>
<th>Animal Riddle</th>
<th>Riddle mostly completed. Directions not followed on &quot;WHO AM I&quot; sheet.</th>
<th>Riddle completed neatly and according to &quot;WHO AM I Sheet.&quot;</th>
<th>Riddle reflects unique characteristics of animal. Effort exceeds expected level.</th>
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**Conclusion**

Congratulations! You did a great job finding all the "hidden" animals and

[link](http://curry.edschool.virginia.edu/go/edis771/webquest2000/student/scolleenmuldoon/)
"seeking" information about the animals of the rainforest. I hope you've enjoyed learning about the animals of the rainforest.

Now that you are an expert on the animals, learn about 7 Steps for Kids to Take to protect the rainforest - the home to the fascinating animals you've just finished learning about.

Credits & References

A special THANK YOU to the following websites - most photographs and images were taken from them:

http://www.animalsoftherainforest.com/frames.htm
http://www.ran.org/kids_action/index1.html
http://www.animalsoftherainforest.com/frames.htm
http://www.bsrsi.msu.edu/rfrc/tour/rainforest.html

For more information on the rainforest, check out these books:

Rainforest by Helen Cowcher
Destination: Rainforest (National Geographic Society) by Jonathan Grupper
Red-Eyed Tree Frog by Joy Cowley, Photographs by Nic Bishop
The Most Beautiful Roof in the World: Exploring the Rainforest Canopy by Kathryn Lasky, Photographs by Christopher Knight
Nature's Green Umbrella: Tropical Rain Forests by Gail Gibbons
At Home in the Rainforest by Dilan Willow
A Walk in the Rainforest by Kristin Joy Pratt
Rainforest Birds (Birds Up Close) by Bobbie Kalman
Look Closer: Rain Forest by Barbara Taylor

The Great Kapok Tree: A Social Studies Lesson

Grade Level(s): 1-2
Submitted by: Alana Noseworthy, Multiage 1,2,3

Students will demonstrate an understanding of the interdependence of animals, people and plants in the rainforest by participating in an ecosystem simulation.

Objectives:

Materials:

- ball of yarn
- one 4" x 6" note card for each student
- colored felt pens or crayons
- scissors

Plan:

1. Read The Great Kapok Tree by Lynne Cherry. Ask students to pay attention to the many animals that rely on the Kapok Tree for their needs. (Students will have already have a good understanding of most animals mentioned).

2. After reading, ask students:
   - How important was the Kapok tree?
   - To whom was it important?
   - How do you think the animals in the story felt, when they saw a human who was bigger and stronger than them came to chop down their tree?
   - In the end, who has the final say for what will happen? (humans do)
   - Think of some examples in our community where our ecosystem may be in danger. (i.e. pollution, littering, car exhaust.)

3. Make necktie-cards in advance or have students make the food web cards before the game is played. Reproduce the food web listed below.

A Basic Rainforest Ecosystem

- Kapok Tree
- Tree Frogs
- Boa Constrictor
- Bee
- Monkeys
- Toucan, Macaw
- Tree Porcupines
- Jaguar
- Anteaters
- Sloths
- Yanomamo Tribe Children

Write a single web component on each card. When finished, punch a hole in the two top corners of each card and string a piece of yarn about two feet in length through the holes, tying a loop that can later be placed over the student's head. These cards will be worn by the students to identify their role clearly to the entire class while playing the game. (Use picture cues especially for youngest).

4. Have students draw role cards from a hat, and put them on so their roles are visible.
5. Students form a circle. The student that represents the Kapok Tree stands in the middle of the circle, holding a long dowel upright, with 30 strings attached. (*NB use as many strands as are children in the class). As the narrator (teacher) recites the story, each animal takes a strand of yarn from the "tree". This will form a "web of dependence" on the tree. Once all animals have been presented, the teacher (as a woodcutter) will cut the Kapok Tree down, cutting all "ties" from tree to animals. (See Appendix A for instructions and story retelling) This action will represent "deforestation" and how it harms our ecosystem by creating an imbalance.

Questions:

1. How do you think the animals feel now that the Kapok Tree is gone?
2. What will happen to the animals?
3. What will happen to the people in the rainforest?
4. In a "community" - ecosystem such as the rainforest, animals depend on one another, for food, shelter, and many other things. If a community does not work together, what will be the consequences?

Extension/Evaluation:

Students will create mobiles to reveal their understanding of ecosystem balance. Using coat hanger wire and string, students will construct a "dependence web" utilizing the animal and people-character webbing "constructed" in that lesson. Students will also be evaluated informally during question time and evaluation of the activity. While in group discussion, I will observe whether students are on task, if they are attentive, and if they ask questions of the narrator/teacher.

Appendix A

Students stand in a circle. Kapok in Center, holds ball of yarn.

Narrator/teacher -

When you hear your name called, come to the Kapok Tree and he will give you what you need. (Kapok gives yarn string).

1. The boa constrictor lives in the Kapok Tree. He slithers down the trunk. The Kapok Tree is the boa's home. It has been home for our family for years and years. We are dependent on you for shelter.
2. The bees buzz around the Kapok Tree. They have built their hive in the tree. The bees fly from tree to tree and flower to flower collecting pollen. They pollinate the trees and flowers throughout the rainforest. The Kapok Tree provides a place for bees to build many hives.
3. The monkeys swing from vines to branches of the Kapok Tree. They are dependent on your vines to swing on. The Kapok Tree provides many vines to many monkeys to swing from branch to branch.
4. The tree frogs crawl on your leaves. Tree frogs need the leaves to hide from predators - so they can be camouflaged. Your leaves match our skin perfectly.
5. The jaguar also sleeps in the tree - he finds his lunch and supper in the Kapok tree. The Kapok Tree provides a home to the jaguar's prey - the animals that he depends on for food.
6. The porcupines swing down the Kapok tree from branch to branch. "We need you for our OXYGEN. All animals - people included - need you to breathe!"
7. The anteaters climb down the Kapok Tree with their young clinging onto their backs. They say, "our children are dependent on you. You provide us with a home! Without you, our children have no future!"
8. The sloths began climbing down VERY SLOWLY from the canopy of the Kapok Tree. You are such a beautiful tree. On you, flowers grow and butterflies rest. You make the rainforest a beautiful place.
9. Two children from the Yanomami tribe walked up to the Kapok Tree and said: "You provide shade for the forest floor, and a sturdy trunk for our family's home. On you we depend for fruits and other vegetation to eat!"
10. Then the woodcutter came from the huge furniture factory in Canada. (make up a factory name) He came with a huge, heavy ax and began chopping the Kapok Tree down. Soon, the entire tree was chopped down. (Pretend to "chop" down the tree, cutting all "ties" from Kapok Tree to animals).

Comments:

I am currently completing the final year of my B.Ed from the University of Manitoba in Winnipeg, Canada. The multiage classroom where I student teach has chosen "rainforests" as its global theme for the year. I tried this activity with the students and they LOVED it!
The Review

One day a man starts to chop down a Kapok tree in the rain forest. It is hot and humid, so the man sits down to rest and soon falls asleep. One by one the animals of the forest go to the man and give their reasons why he shouldn't chop down the tree. When the man wakes up he realizes how beautiful the forest is and leaves without chopping down the tree.

The Activities

http://www.eduplace.com/tview/pages/g/The_Great_Kapok_Tree_Lynne_Cherry.html
Habitats
Science Works for Kids Series

Sources of some of the original activities and lessons

- Hands-on activities
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- Easy-to-teach:
  - step-by-step lessons
  - 7 concepts—choose the concept sections you need
- Ready-to-go resources:
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  - minibooks
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Habitats

This science resource book suggests ways to build on your students' previous experiences with different habitats to develop new concepts.

The activities in this book provide students with practice in the skills of:

- observation
- recording information
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- analysis
- critical thinking
- comparison

Areas of study address these major themes found in many science frameworks:

- change
- structure
- cycles
- diversity
- cause and effect
- function

Concepts

A habitat is a place where plants and animals naturally live ..................... 6
A desert habitat has very little rainfall ................................... .. ............. 10
A forest is a tree-covered habitat ....................................................... 25
A pond is a fresh-water habitat .............................................. 39
An ocean is a salt-water habitat ...................................................... 49
A savanna is a grassland habitat ...................................................... 62
A polar habitat is very cold .................................................................. 70

Habitats is one of ten units in Evan-Moor's ScienceWorks for Kids series. See the back cover for a complete list of titles.

Life in the Oceans (EMC 865), one of Evan-Moor's Science Picture Card Sets, contains illustrations of ocean plants and animals.
Life in the Rainforest

Transparencies • Reproducibles • Teaching Guide

PRIMARY SCIENCE RESOURCE GUIDE
Rain Forest

The Latest Information and Hands-on Activities to Explore Animals, Plants, and Geography

by Robin Bernard

Includes a GIANT Full-Color Poster!
DEDICATION
To Tess for all the paints and brushes; to Irving for the chariot mornings; and as always, to Jer, for the dinosaur's lunch.

ACKNOWLEDGMENTS
My thanks to Liza Charlesworth, whose gentle editorial skills continue to delight and amaze me; and to Terry Cooper, whose encouragement led me to discover places beyond East Africa.
LEARN ABOUT

- Nature’s surprises—trees with knees and plants that live on air
- How the rainforests of Brazil affect the air you breathe
- The oldest trees, the tallest forests, and how plants have changed since the Age of the Dinosaurs
- What grows where—the exotic forests of the world
- What leaves, seeds, twigs, and roots can tell us
- Bears, bugs, mosses, maples, and you—protecting the delicate chain of forest life

By Bettina Dudley
Illustrated by Helen L. Driggs

DISCOVER THE WONDERS OF LIFE IN THE WOODLANDS
MEETING THE CHALLENGE

It's easy to feel hopeless when confronted with tropical deforestation. Statistics are grim. According to recent estimates, we're losing an area of rain forest the size of a football field every second, an area the size of Pennsylvania every year. And some scientists estimate that if the current rate of destruction continues, we could lose it all—the toucans, the orchids, the gorillas... everything—in less than 75 years.

Despite the gloom-and-doom predictions, there are some bright spots in the worldwide struggle to protect these tropical treasures, and it's important for everyone to know that. It's also important that they realize they can help. Through the activities in this issue, your kids can discover specific actions they can take to help protect rain forests. They can also find out about the problems associated with deforestation, learn more about the incredible life forms that live in rain forests, and take a look at the many ways people depend on tropical resources.

So, yes, the situation is critical. But everyone can do something to solve the problems. As Edmund Burke, a British statesman and orator, said, "Nobody made a greater mistake than he who did nothing because he could only do a little."

Judy Braus
THE GREAT KAPOK TREE
A TALE OF THE AMAZON RAIN FOREST
by Lynne Cherry
I to my friends Irv and Bernice Kirk for their editorial ice; to the World Wildlife Fund in Washington, D.C., ecially to Rob Bierregaard for sharing his office, his ce photos, and his expertise; to Victor Bullen and, ecially to Rob for facilitating my trip to WWF's base camp Amazon rain forest and to Carlos Miller, the native in who posed as the woodcutter; to Brian Boom, it curator at the New York Botanical Garden, for all ance, especially in Manaus; to Stephen Nash and one of SUNY at Stonybrook; to Russ Mittermeyer, 'takin, and Gary Harrshorn of the World Wildlife nd Tom Lovejoy of the Smithsonian Institution. al thanks to Eric Fersht for his help every step of the d, as always, to my folks, Herbert and Helen Cherry. 

e this story is about the Amazon rain forest, illian spelling senhor has been used.

ght © 1990 by Lynne Cherry

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ed by Michael Farmer

This book is dedicated to the memory of Chico Mendes, who gave his life in order to preserve a part of the rain forest.
Have children choose a rain forest animal that they would like to be. Then ask them to write a few sentences about what they would say to the man with the ax if they were that animal.

TeacherView by Heidi Weber
Grade(s) taught:
Madeira City Schools
Goshen, Ohio USA

The Review
A man goes into the rainforest and, while trying to chop down a tree, he grows tired and falls asleep. While he sleeps, animals of the rainforest come to him and whisper to him to not chop down the tree for many reasons, such as it is a home for many animals, it gives oxygen, and it sustains life. When the man wakes up, he sees all of the animals and a child. He picks up his axe and leaves, thankfully choosing to not cut down the tree.

The Activities

- **Kids' Corner**
  Learn more about rainforests here, part of the Rainforest Action Network web site.
  [http://www.ran.org/kids_action/rainforests.html](http://www.ran.org/kids_action/rainforests.html)

- **Amazon Interactive**
  Play an "Ecotourism Simulation Game". Students will have fun while they build problem-solving and decision-making skills. For further skill-building while learning about the Amazon, play the Edmark CD-ROM *The Amazon Trail* (similar to *The Oregon Trail*).

- **Global Response**
  Have students write letters to various organizations. This web site is a terrific resource.

- The flyleaf of the book has a map of the world bordered by various rainforest animals. Have students count the animals and put them into categories. They can choose physical characteristics, wings or no wings, fur or no fur, birds, reptiles, mammals, etc.
- In the book, the animals talk to the man but the tree never does. Use a tape recorder and have each student pretend they are the great Kapok tree telling the man why he should not cut it down. Students can have fun experimenting with their voices while demonstrating what they've learned about rainforests.