

ROBERTO'S RAINFOREST

A simulation of a canoe trip down a river to explore a tropical rainforest

SANDY TERRELL has degrees from San Diego State University, a B.A. in speech pathology and special education as well as an M.S. in education. Sandy teaches communicatively handicapped, regular, and gifted students in the San Diego Unified School District. Sandy has written other science, literature, and musical units for Interact.

Artwork by Jason Kessel.

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Interact
10200 Jefferson Boulevard
P.O. Box 802
Culver City, CA 90232-0802
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The author wrote ROBERTO'S RAINFOREST and other science units in this passport series because she is concerned by a national trend discussed in the April 9, 1990, issue of Newsweek:

"Whether out of boredom, laziness, or the allure of other pursuits, American students are fleeing math and science in droves. 'By the third grade, half of all students don't want to take science any more,' says Edward Pizzini, associate professor of science education at the University of Iowa. 'By the eighth grade, only one in five wants to keep going. Fewer than half ever take a math or science course after the 10th grade.' "

ROBERTO'S RAINFOREST is a scientific canoeing trip that allows naturalists (K-3) to explore a tropical rainforest in South America. It is designed to broaden the students' scientific knowledge through the study of life forms found in the rainforest. The 11 lessons include information on tropical rainforest weather, insects, plants, water, birds, people, and animals. Other scientific and travel-related concepts are emphasized throughout the unit. ROBERTO'S RAINFOREST is a science program that stimulates young learners through well-planned activities. The unit's activities are a base on which to build required science concepts for grades K-3.

During the scientific canoeing trip, students will experience:

Knowledge (Based on science guidelines grades K-3)

1. There is great diversity among living things that can be described and classified by their characteristics and behaviors.
2. Living things have adaptations that enable them to live in particular environments.
3. Plants and animals have basic requirements that need to be satisfied in order for them to survive.
4. Living things shelter themselves in special places called habitats and share their particular environments with other living things to form communities.

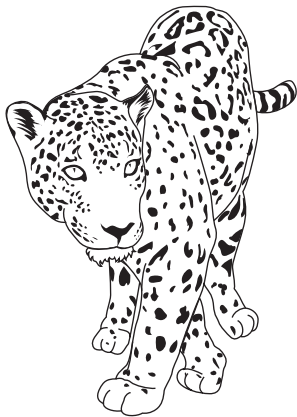
Feelings

1. Feeling positive toward science.
2. Appreciating nature and its habitats.
3. Experiencing the simulation of canoeing on a river.

Skills

1. Studying scientific concepts carefully to understand terms and definitions.
2. Creating multi-dimensional projects.
3. Enhancing vocabulary, language, and public speaking.
4. Experimenting, gathering information, and estimating in the field of science.
5. Learning to read directions to complete an activity.
6. Following oral and written directions.

Taylor's Scientific Travel



Adventures

You should have a good time naming a science travel agency after yourself!

ROBERTO'S RAINFOREST is run by your travel agency. You become the scientific travel guide who escorts the students through the rainforest along the mighty rainforest river in canoes. As your scientists travel they collect specimens from the rainforest and build a rainforest in your room. As a culminating activity your students will invite other classrooms into the rainforest that you have built throughout the unit.

You are aided by a large map of ROBERTO'S RAINFOREST that you will post on a bulletin board. The map is an important visual aid as the lessons' activities are centered around it. The map shows the many animals and plants that will be studied as well as the mighty river that runs through the rainforest.

Each student is required to use a Passport to Adventure that is stamped at the end of each activity. A post card is filled out and sent home at the beginning of the unit to alert parents that their child is going to embark on a scientific canoe trip and will guide someone from another class through the rainforest via the collection of specimens during the unit.

A simple map of Roberto's Rainforest is prepared by the students to stress the importance of reading maps. Many multidimensional activities are planned to aid in teaching the science concepts and vocabulary that are pertinent to each unit.

ROBERTO'S RAINFOREST is organized into cooperative learning teams. Team members help each other complete an activity before they get their passports stamped. The passport contains personal information on each tourist, a snapshot created by each traveler, and boxes to be stamped.

The 11 lessons contain options and enhancement activities that build on the basic concepts taught in the lesson. Each lesson also has patterns and ideas on how to build the rainforest in your classroom. At the end of the unit, Lesson 12, you give your students a brief final test. It covers concepts, vocabulary, and closure questions students have experienced throughout the unit.

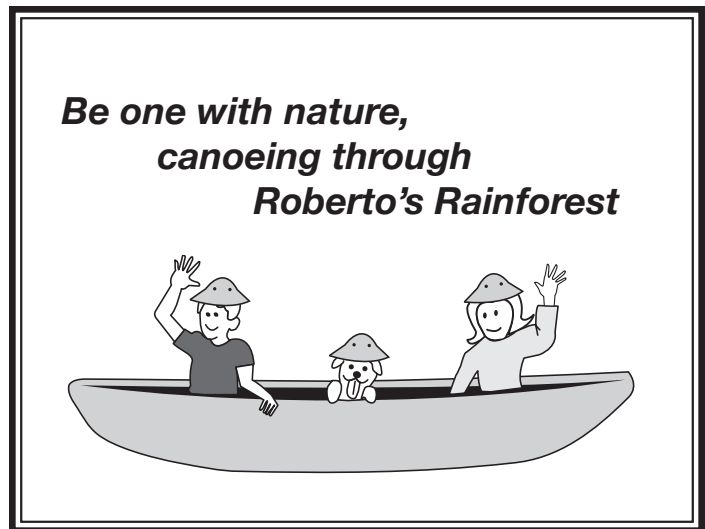
As the young scientists finish their investigation of the rainforest they will be ready to share their findings with other students and adults. You will want to set up the classroom to simulate a rainforest environment. As your class learns about the rainforest, wall and floor space will be needed. Many suggestions throughout the unit will spark ideas to make the rainforest tour a success. The section on Rainforest Setup (pages 6–7) will be very helpful.

*We always found
someone on staff
was saving what we
needed "just in case."*

*The travel advertise-
ment may be used to
entice "tourists" to
your classroom.*

*The custodians will love
your "messy" room dur-
ing ROBERTO'S RAIN-
FOREST. Remember
students retain informa-
tion through hands-on
activities.*

1. **Initial understanding and staff support:** Take a moment to read through this Teacher Guide. Pay particular attention to various lessons. Notice the special supplies needed as you may need to start saving a few items. Post your needs list in the faculty lounge so that other faculty members can help you collect items you don't have available.
2. **Bulletin board:** Create a focal point for ROBERTO'S RAINFOREST by making a bulletin board display.
 - a. Place the fold-out map of ROBERTO'S RAINFOREST in the center of the display. This map is referred to throughout the unit.
 - b. Create a real travel advertisement for the unit. Check the travel section in the newspaper to get a feel for the jargon that sparks a traveler's curiosity (i.e., Explore Roberto's Rainforest, Be one with nature, Canoeing through Roberto's Rainforest). When the students



present their simulated rainforest to other classes they will want to create a travel slogan to entice their tourists.

- c. Clear out! Allow your floor space, bulletin boards, and wall space to collect the specimens for the students' simulated rainforest.
- d. Place a canoe for each team on the bulletin board. Use the canoe to reward team with individual points throughout the unit. More information about the canoes may be found in Lesson 1.

*ROBERTO'S
RAINFOREST
activities make
wonderful
portfolio items.*

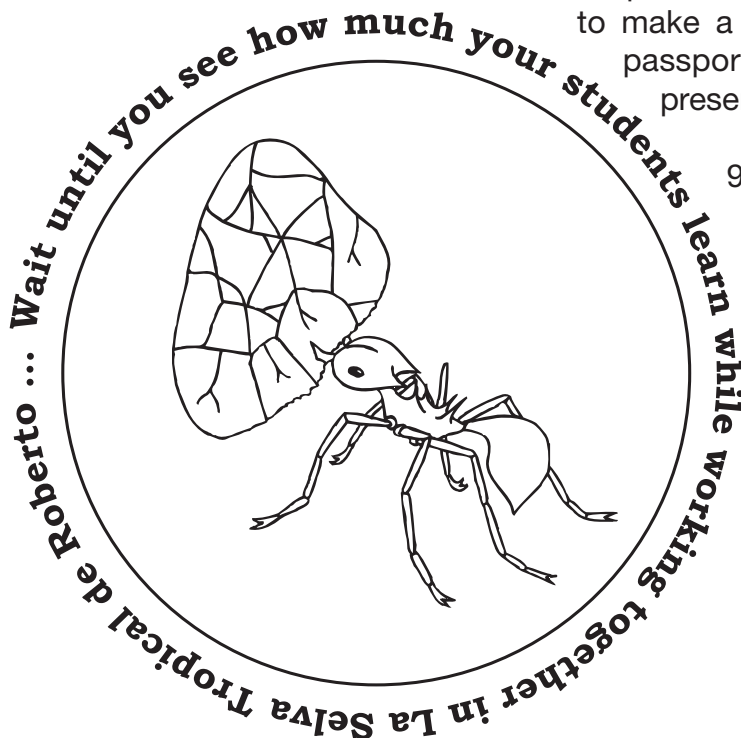
*The author has
found that it
is important
to establish
responsibilities and
standards when
setting up the
groups. We model
and role play how
each monitor will
carry out his/her
responsibility.*

*Two stamps are
provided—one for
English; one for Spanish.*

- e. Display student activities as well as a sample of the passport and any photos that you take. An instant camera is a great “travel tool” to have in the classroom for spontaneous snapshots. This array of student work can also be used as “research documentation” to reinforce the authenticity of the simulated rainforest.
 - f. Feature the bulletin boards and simulated rainforest during open house. It is also a highlight for parent conferences.
3. **Unit length:** ROBERTO'S RAINFOREST can run as long as you'd like, depending on which materials you choose for your students. The activities for each of the 11 lessons are developed as basic scientific information for young learners. The basic activities should take approximately 30–40 minutes to complete. The option and enhancement activities have been included to expand the basic concepts and for students who are ready for higher-order thinking opportunities.
4. **Student grouping:** This unit utilizes cooperative learning.
 - a. Group your students in advance to include equal distribution of students' abilities. Strive to set up fair cooperative learning groups.
 - b. Select each group's leader/organizer to begin the unit. (**Option:** rotate roles so that all students have a chance to be the leader and to be responsible for the group's duties. The team leader is responsible for everyone, making sure everyone completes each activity.
 - c. Designate a duty for each team member (i.e., monitors for the rubber stamp, crayons, scissors, paste, paper, etc.).
5. **Passports and stamps:** Get a generic rubber stamp or stickers that will fit inside the passport squares. Either can be used to stamp the passports after completion of lessons 3 through 11. This stamp simulates the stamping of real passports when entering and departing countries. The passport has boxes for each lesson. The stamp monitor stamps each team member's passport upon completion of each lesson. If options and enhancements are used, stamp the lesson box again or put additional stamps on the canoes posted on the bulletin board. (See Lesson 3 for more details.)
 - a. Designate a student in each canoeing group to do the stamping. Demonstrate how it is done. (**Note:** each

*ROBERTO'S
RAINFOREST
provides practice
in essential
fine-motor skills.*

*Schedule the
ceremony toward the
end of the day. This
assures that passports
may get home!*



team must be responsible for everyone on its canoeing team to complete each activity. This is a component of cooperative learning stressed for young learners.)

- b. Reward teamwork and individual accomplishment by giving bonus points. These points can be accumulated throughout the unit and used as a behavioral objective. Use your own judgment on how frequently team and individual points are rewarded. Record the points on the team canoes posted on the bulletin board.
6. **Supplies:** Basic classroom supplies to have on hand include scissors, paste/glue, construction paper, pencils, crayons, non-permanent markers, yarn, ink pad. Refer to individual lessons for more specific needs.
 7. **Duplication:** Materials needed are found with each lesson plan. Realize duplicate patterns and worksheets are needed. The lesson plan suggest how many copies are needed per activity.
 8. **Certificates:** A certificate of completion is found in the passport.
 - a. Organize a ceremony at the end of the unit. Sign the certificate and present passports to the travelers/tourist guides.
 - b. Hole punch the passports so a string can be inserted to make a neck strap for each passport. Place passport around each traveler's neck when presenting them.
 9. **Cooperative learning:** Each team must be responsible for everyone on its team to complete each activity. This is a component of cooperative learning stressed for young learners. This unit gives students a chance to excel as leaders, followers, and doers as cooperative learning needs all these types of learners in each team. Set the standards on how to use this behavioral objective in a positive way.



The author has used fluorescent paint on all rainforest specimens. Using a black light with the lights out and playing rainforest sounds created an atmosphere of a real rainforest.

Simulating a rainforest in your classroom will provide a chance for students to experience a rainforest environment that, for most of us, is not easily accessible within our communities. The rainforest is an important habitat that makes our complicated ecosystem on Earth functional. The conservation aspect of saving the rainforest is addressed superficially and, if so desired, can be enhanced by you. Political and personal suggestions regarding conservation appear in various formats throughout the unit.

Each lesson concentrates on one aspect of the tropical rainforests of South America and Central America. These Rainforest Setup suggestions complement what has been studied in each lesson. Some of the specimen patterns are provided in each lesson so each canoe group can make a different item for the rainforest therefore creating many species of plants and animals to place in the simulated rainforest. Use the specimen patterns to make a display copy or enlarged picture of the plants and animals. Trace/transfer the patterns onto cardboard or heavy paper and provide each canoe group with enough patterns to keep busy. Tempera paints provide a bright array of colors that will make your rainforest beautiful. Appropriate plant and animal colors and sizes of each specimen are suggested. If so desired, you could assign students to research the plants' and animals' color and size as an enhanced research project.

Collect refrigerator boxes that you cut down one side. Line your room with the boxes so they become the walls for the rainforest. Your room will be totally engulfed when it becomes time for the tour.

Put the call out early and start collecting small ropes, yarns, tissue paper, boxes, tissue paper rolls, and more items to simulate vines, leaves, trees, etc.

Each specimen has a short elementary description that can be used in various ways. Simply make a copy of the description and pin it close to the specimen in your simulated rainforest for tourists to read as they visit your rainforest. Have students read and memorize the descriptions so a select few can tell the tourists about the animals and plants as they tour the rainforest. Another suggestion is to audiotape students reading the descriptions and run the tape during the tours. It is suggested to tape or read only a few descriptions for each



Streamers of green and brown crepe paper work well too. Strive for a thick, lush rainforest look which can be accomplished with many unusual materials.

tour group as the monotony will quickly drain your tourists. You could also make more than one tour format and rotate the speakers and tapes for different tour groups so all of your students have a chance to be heard orally or on tape.

Each lesson contains ideas of how the projects can be incorporated into other activities during the day. Use the specimen patterns in the most productive way so you will finish the lessons in the unit about the same time you finish building the rainforest. It is important for maximum retention of facts and to keep motivation high to conduct tours through your rainforest immediately after the unit is completed.

We found videos were useful for visual children and/or if we needed a lesson plan for a substitute.

Videos

The videos listed in this section are long for young children, but they can be previewed and shown in small segments. The real-life animals are quite impressive and can be used as a research source for animal colors and size.

National Geographic Video: Amazon: Land of the Flooded Forest, Vestron Video, approx. 60 min., P.O. 4000, Stamford CT 06907

National Geographic Video: Search for the Great Apes, Vestron Video, approx. 60 min., P.O. 4000, Stamford CT 06907

Vanishing Rain Forests: Rain Forest Rap, World Wildlife Fund, 1250 Twenty-Fourth Street, NW, Washington, D.C. 20037

The Amazon Video, distributed by Chevron

Rand McNally: Exploring Tropical Australia, 58 minutes, International Video Network, 2246 Camino Ramon, San Ramon, CA 94583, 107 Power Road, Chiswick, London, W45PL

Some of the resources in this section are above grade level, yet they provide beautiful and specific pictures that you may want to use as visuals.

Magazines

National Geographic Magazine, The Rain Forest, Vol. 163, No. 1 January 1983

National Geographic Magazine, Macaws, Vol. 185, No. 1 January 1994

Rain Forests, Kids Discover, May 1993. Back orders are available, 212-242-5133, Kids Discover, 170 Fifth Avenue, New York, NY 10010. This magazine has marvelous real-life photographs on many aspects of the rainforest.

Junior Scholastic S.O.S. Planet Earth What You Can Do To Help, Vol. 93 No. 16, April 19, 1991, ISSN 0022-6688. The articles in this Scholastic deal with the destruction of the Amazon Basin. It has K-3 ability level activities and resources.

Color The Rainforest: Mothers and Others for a Livable Planet, 40 West 20th Street, New York, NY 10011

Save the Rain Forests! A coloring and activity book, Phoebe Yeh and Nancy E. Krulik, Scholastic Inc., New York

Teacher Resources

People of the Tropical Rain Forest, University of California Press, Berkeley, CA 94720

The Enchanted Canopy, Andrew W. Mitchell, Macmillan Publishing Company, 866 Third Avenue, NY 10022

The Land and Wildlife of Tropical Asia, Time Inc., NY

Picture Books

Read aloud or have canoe teams research a book and present it to the rest of the class.

Amazon: A Young Reader's Look At The Last Frontier, Peter Lourie, A Highlights Company, Honesdale, PA 18431

At Home in the Rain Forest, Diane Willow and Laura Jacques, Charlesbridge Publishing, Watertown, MA 02172

A Walk in the Rainforest, Kristin Joy Pratt, Dawn Publications, Nevada City, CA 95959

Going Fishing: A story set in Bangladesh, Rachel Warner, A&C Block Publishers Limited, Scholastic Inc., NY

Life in the RainForests: Animals People Plants, Lucy Baker, Scholastic Inc. NY

Our Endangered Planet: Tropical Rainforests, Cornelia F. Mutel and Mary M. Rodgers, Lerner Publications Company, Minneapolis

The River: A First Discovery Book, Scholastic Inc., NY

The Rain Forest: A First Discovery Book, Scholastic Inc., NY

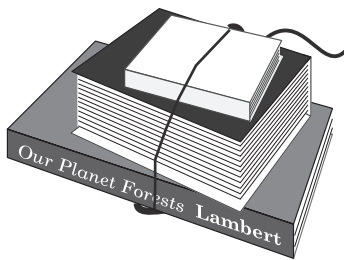
The Great Kapok Tree: A Tale of the Amazon Rain Forest, Lynne Cherry, Harcourt Brace and Company, San Diego, New York, London

Where The Forest Meets the Sea, Jeannie Baker, Scholastic Inc., NY

Our Planet Forests, David Lambert, Troll Associates, Mahwah, NJ 07430

The Brazilian Rain Forest: Imagine Living Here This Place Is Wet, Vicki Cobb, Walker Publishing Company Inc., USA

Nature's Green Umbrella: Tropical Rain Forests, Gail Gibbons, Morrow Junior Books, NY



QUESTIONS ANSWERS

- Q.** *I have never had my students work in teams before. Can cooperative learning really be successful?*
- A.** Yes. Children can work cooperatively in groups very successfully. Research shows we can learn a great deal from our peers whatever the age. ROBERTO'S RAINFOREST is an introductory unit to cooperative learning for young people. Give it a good try. Be open minded and be willing to try different strategies within the cooperative-learning framework. Keep behavioral objectives clear throughout the unit. Be generous with praise and points for the teams that work well together.
- Q.** *Must all the activities be done in teams?*
- A.** No. The activities can be done in a large group as well as in small groups. The idea of working together on a canoeing trip adds an element to the unit that children enjoy. Complete most activities in the canoeing teams to carry out the canoeing theme.
- Q.** *How do you arrange it so one or two children in each group do not do all the work?*
- A.** Many of the lessons are set up so everyone ends up with an individual project. You may find a few students more eager for everyone to finish their project. Thus they help verbally or, if needed, physically. When you assign job responsibilities in each group, stress that the task was given because you know that the individual will do an excellent job. More than likely only one or two students will not work successfully in team activities. Team pressure will enable the student to tune into the spirit of ROBERTO'S RAINFOREST.
- Q.** *How long should it take to finish the unit? Do I have to do every lesson?*
- A.** The unit is divided into 11 lessons and a short quiz. Each lesson activity, option, and enhancement take approximately 30-40 minutes. There is enough material to keep busy for week upon week. It is suggested that you go through the lessons and pick the activities, options, and enhancements most important and appropriate to your class. Set your own unit length from the activities you want to use.

QUESTIONS ANSWERS

- Q.** *Why should I teach these science concepts with a simulation game?*
- A.** A simulation format maximizes students' learning potential. Students really buy into a game format and get caught up in the excitement without realizing how much they are learning during the unit. A simulation definitely captures students' full attention.
- Q.** *Some of the basic lesson activities are too easy for my students. Do I have to do them?*
- A.** Of course not. That is why the options and enhancements are included. Some teachers hate dragging out supplies day after day, so the activities, options, and enhancements present a balance of skill level and preparation.
- Q.** *My students already know some of the concepts in ROBERTO'S RAINFOREST. Should I repeat these concepts?*
- A.** Do not overestimate the need that all young students should experience color, cut, and paste. High-achieving students, especially, often demonstrate their knowledge verbally. They should also be expected to demonstrate their knowledge physically through active learning lessons. Therefore, select lessons, options, and enhancements that will challenge your students' learning while they are practicing important early skill development.
- Q.** *Is it all right for students to add more detail to projects than suggested?*
- A.** Yes, that is part of creativity. Be certain students have first included all basics of the project. Then allow them to add their details. Watch that they are relatively accurate in whatever they add. A camel in the middle of the rainforest or a peccary in the emergent layer may not be appropriate!

We do a lot of our duplicating before beginning the unit.

Read this section prior to starting the lessons. It will give you a feeling for the diversity in this unit. Tailor the unit to your students' needs.

Note: If an asterisk (*) is present, you must do certain preparation prior to teaching the lesson. This preparation may mean assembling the passport before Lesson 3 or it may mean you will have to supply some items for the lesson. When supplies are required, more information is given in each lesson plan. The following overview does not cue you to the duplication needed. That is in each lesson. Read the materials section in each lesson for more details.

Lesson 1: Canoeing Teams

- Activity: Canoeing crossword. Students complete a crossword by filling in words.

Dear

My class is going to take a canoeing trip to Roberto's Rainforest. It is a huge rainforest that is awesome to study.

We are going to learn about plants and animals that live in different areas in the rainforest. We are going to have passports to keep track of everything we study.

Don't worry, I'll be home after school because our canoeing trip will take place in my classroom.

Love,

To:



Roberto's
ainforest

Lesson 2: Post Card

- Activity: Post card. Students make a post card about the impending rainforest tour to take home.

Lesson 3: Passport

- Activity: Passports. Fill in personal information on passports. *Assemble one passport per student prior to this lesson. Passport stamp and ink pad will be used in the rest of the lessons.

Lesson 4: Roberto's Rainforest Map

- Activity: Roberto's Rainforest Map. Design, color, cut, paste to simulate a map of a rainforest.
- Enhancement: Rainforest Big Book. Students assemble a book.

Lesson 5: Plants in Roberto's Rainforest

- Activity: Plants in the Rainforest. *Transfer plant patterns to cardboard or heavy paper. Students paint cardboard plants and attach to rainforest background.
- Option 1: Plants in Poetry. Students practice reading poems about plants for rainforest tour.
- Enhancement: Fruit Roll It! Students play a math game using dice and plant names. A pair of dice per team is needed.

Send a note to parents with a list of special supplies needed. They will start saving materials for the lessons.

Lesson 6: Birds in Roberto's Rainforest

- Activity: Birds in the Rainforest *Transfer bird patterns to cardboard or heavy paper. Students paint cardboard birds and attach to rainforest background.
- Option 1: Birds in Poetry. Students practice reading poems about birds for the rainforest tour.
- Option 2: Bird Puppets. Students use bird patterns and turn them into puppets with tongue depressors.
- Enhancement: Researching Roberto's Birds. *Research books, nature magazines, encyclopedias, bird books, etcetera are used to make a report on birds.

Lesson 7: Insects in Roberto's Rainforest

- Activity: Insects in the Rainforest. *Transfer insect patterns to cardboard or heavy paper. Students paint cardboard insects and attach to rainforest background.
- Option 1: Insects in Poetry. Students practice reading poems about insects for the rainforest tour.
- Enhancement: Collecting Insects in the Wild. *Students place a sheet on the ground under a tree or bush to collect insect specimens to study.

Lesson 8: Animals in Roberto's Rainforest

- Activity: Animals in the rainforest. *Transfer animal patterns to cardboard or heavy paper. Students paint cardboard animals and attach to rainforest background.
- Option: Animals in Poetry. Students practice reading poems about animals for the rainforest tour.
- Enhancement: Rainforest Roundup. *Nature magazines, encyclopedias, rainforest picture books, etc. are used to search for rainforest animals as non-killing hunters.

Lesson 9: People in Roberto's Rainforest

- Activity: People in the Rainforest. *Transfer people patterns to cardboard or heavy paper. Students paint cardboard people and attach to rainforest background.
- Option: Natives in Poetry. Students practice reading poems about people for the rainforest tour.
- Enhancement: Keep in Touch. Students decide which items from the worksheet they would take on a two-year stay in the rainforest.



At this point, some parent volunteers or cross-age tutors could have fun helping out—and be very useful.

Lesson 10: Conservation in Roberto's Rainforest

- Activity: Write and Save. Students write postcards to influential organizations regarding conservation in the rainforest.
- Option: Poster Power. Students make posters to advertise the upcoming rainforest tour offered in their classroom.
- Enhancement: Rainforest Roulette. Students play a match game with a picture card of a rainforest object and the words that describe that object.

Lesson 11: Touring Roberto's Rainforest

- Activity: The Tour. *Students dress in appropriate rainforest guide garments and give tours to other classrooms. Invitations should be sent to classrooms, parents, or other significant tourists prior to the scheduled tour times.
- Option 1: Rainforests Around the World. Students color a map of rainforests on earth.
- Option: Open House. Consider holding your open house in the rainforest that your students have created.
- Enhancement: Tribal Role-playing. Turn your students into native tribes and simulate living in the rainforest. Leave the rainforest up for a while and pretend you are a band of natives.

Lesson 12: Roberto's Quiz

- Activity: Roberto's quiz. Students answer an 11-question true/false quiz. You can use your students' answers to check their understanding of concepts and vocabulary introduced in the unit.
- Enhancement: Creative Questioning. Lead discussion groups about the rainforest unit using questions that are developed for higher-order thinking.

Lesson 1: Canoeing Teams

Concept

Students work in cooperative teams to complete activities.

Vocabulary

- | | | |
|------------|---------------|-----------|
| 1. working | 3. help | 5. paddle |
| 2. teams | 4. rainforest | 6. canoe |

Materials

- CANOE PATTERN (page 17), one per team
Activity: CANOE FUN PUZZLE
- CANOE FUN PUZZLE (page 18), one per team
- markers and pencils, per team

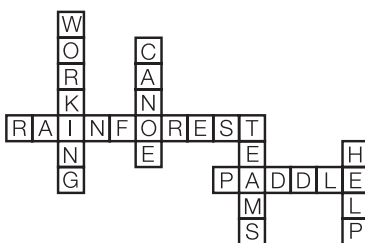
Procedure

- Explain that the class is going to take a canoe trip down a river in the middle of Roberto's Rainforest. The ____ (fill in your name) Travel Agency will guide the exploration to Roberto's Rainforest.
- Tell students they will paddle by canoe through the simulation of a South American rainforest. Each canoe team will be a group of scientists studying the surroundings. All students will have a passport that will keep track of all their activities and adventures.
- Assign students into canoe teams according to your previous cooperative learning decisions. Space teams around the room so that they will have adequate working space.
- Have teams select names. Put each team name on a canoe.
- Post all the canoes on the bulletin board. Use the canoes to reward the teams. If a team is working well, put a star on its canoe. Do as desired with the accumulated points.
- Put each team name on a stand-up name tag. Place these name tags on tables to denote each team's working space.
- Talk about how students will like working as a team. Lead a brief discussion on proper rules to follow. Make these rules clear in behavioral terms that your students can understand.
- Stress to students that everyone on the team must finish each activity before the team is considered finished. After everyone has finished or contributed to the group project, the passports will be stamped. You and the teams may want to act out proper teamwork behavior. Explain that the points each team earns will be posted on the team canoe.

Teaching
tip →

You might suggest to the teams that their team names have something to do with the rainforest.

If desired, include individual students' name on the team tag. Write small!



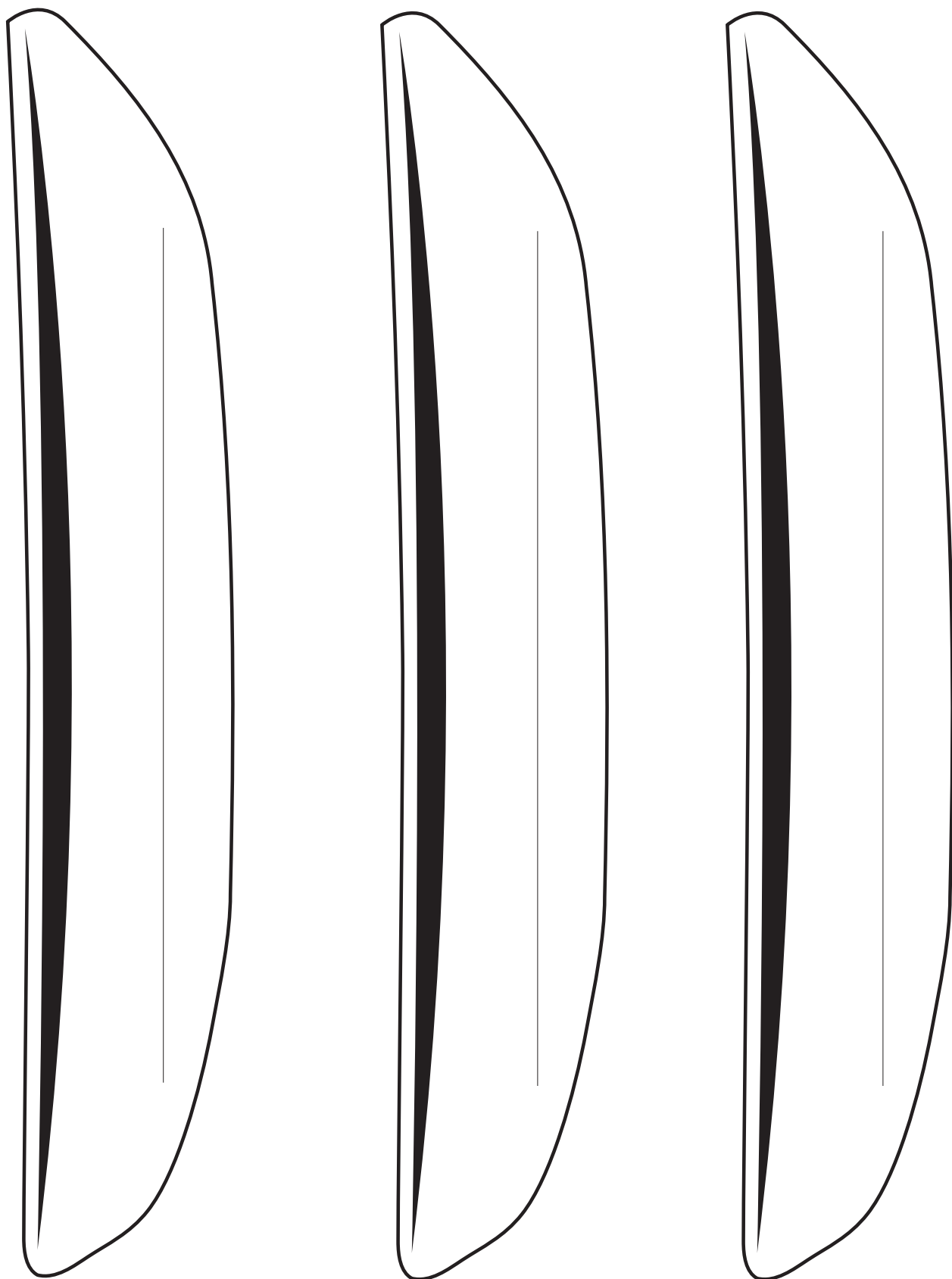
Activity: CANOE FUN PUZZLE

- To stress teamwork, give one copy per team and have the entire team work the puzzle.
- Students fill in the crossword puzzle with the vocabulary words emphasized in this unit.

Lesson 1

Activity

CANOE PATTERN

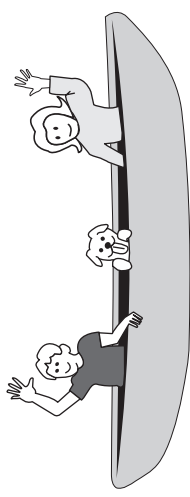


Lesson 1 Activity

Directions: Write the words in the correct boxes.

Team name: _____

WORDS:
working
teams
help
rainforest
paddle
canoe



Lesson 2: Post Card

Concept

When you take a trip you send a post card to someone you know to tell them what you are doing on your trip.

Vocabulary

- | | |
|--------------|--------------|
| 1. weather | 4. souvenirs |
| 2. passport | 5. tour |
| 3. post card | 6. travel |

Materials

Activity: POST CARD

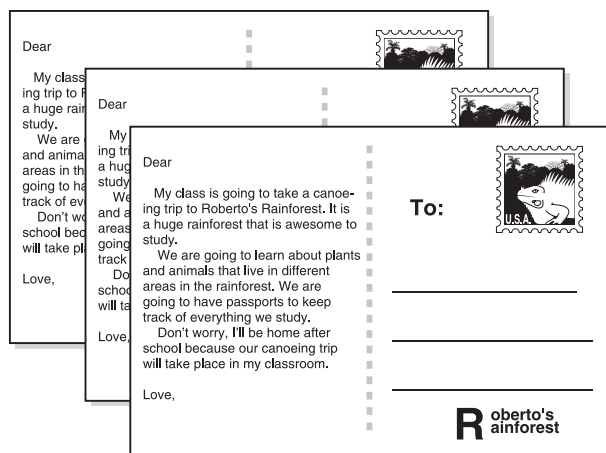
1. POST CARD (page 21), one per student
2. markers/crayons/pencils
3. scissors

Procedure

1. Put students in canoe teams.
2. Explain the concept and vocabulary in simple terms. For example:
 “A passport is a small booklet that is used when people travel from one country to another country. We are going to pretend that Roberto’s Rainforest is a country because we are going to explore the land, borders, animals, plants, and insects in Roberto’s Rainforest.”
3. Do POST CARD activity.
4. Ask teams closure question: What is a post card?

Activity: POST CARD

1. Briefly review the canoe trip to the rainforest that the class is going to take.
2. Hand out POST CARDS.
3. Read or have a student read the POST CARD to the entire class. Talk about the vocabulary that appears on the POST CARD.
4. Have students fill in the name to whom they wish to send the POST CARD.
5. Students sign the POST CARD.
6. Students design the front of the POST CARD with ideas they generate about the upcoming canoe trip and by checking Roberto’s Rainforest Map on the bulletin board.
7. Have students take home the completed POST CARD.



Lesson 2

Activity

POST CARD

Directions: Duplicate on heavy paper. Cut with pinking shears, if available. Each student receives one post card.

Dear

My class is going to take a canoeing trip to Roberto's Rainforest. It is a huge rainforest that is awesome to study.

We are going to learn about plants and animals that live in different areas in the rainforest. We are going to have passports to keep track of everything we study.

Don't worry, I'll be home after school because our canoeing trip will take place in my classroom.

Love,

To:



Roberto's
ainforest

Dear

My class is going to take a canoeing trip to Roberto's Rainforest. It is a huge rainforest that is awesome to study.

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Love,

To:



Roberto's
ainforest

Lesson 3: Passport

Concept

When you travel from one country to another country you carry a passport that tells who you are and where you have been traveling. The passport has important information about you that all countries require. Carry your passport with you at all times when you are in a foreign country.

If you have a real passport you are comfortable displaying, do so, explaining what an important and valuable document it is.

Vocabulary

1. Passport: A passport is a small booklet that people use when they travel from one country to another country to tell who they are.

Materials

Activity: PASSPORT

1. PASSPORT (pages 25–26), one per student
2. science stamp
3. ink pad
4. pencils, crayolas

Procedure

1. Prior to lesson time assemble the two-page PASSPORT.
2. Have students work in canoe teams.

Activity: PASSPORT

1. Hand out PASSPORTS for students to inspect.
2. Explain the purpose of a passport when traveling. Stress to students that we will pretend that Roberto's Rainforest is a country because we are going to explore the borders, animals, plants, people, and insects in Roberto's Rainforest.
3. Explain and show spaces where the science stamp will go when each activity is completed.
4. Have students fill out the personal information in the PASSPORT. This may take more than one day. Help from home on address, spelling of last name, etc. is acceptable.
5. When completed, have teammates check each other's PASSPORTS for accuracy.
6. As students finish personal information section, have them draw and color a picture of themselves in the space located in the PASSPORT as they think they will look in the rainforest.
7. Ask Closure Question: What is a passport?
8. When the lesson is complete, stamp the box marked Lesson 3. Assign one student from each team to do the stamping. To move this stamping process along, have the "stampers" stamp, while other teammates clean up the group areas. Use this same procedure throughout the unit.
9. Store passports according to teams. A shoe box per team works fine.

Very likely you will wish to shift the responsibility so that all students on the canoeing team get to stamp members' passports on at least one day.

Assign one student for each team to pass out and store the passports during the unit. Change students' other responsibilities as needed.

Lesson 3

PASSPORT

PASSPORT

to adventure
Roberto's Rainforest



Name : _____

Completion Certificate

It is certified that

took a GUIDED TOUR to
Roberto's Rainforest



Travel agent

Date

PASSPORT

Information

Name: _____
last first

Birthdate: _____
month day year

Travel agent: _____

Travel agency: _____

Home address:

number street

city state zip code

Use your rubber stamp in the boxes below as you complete certain activities.

Lesson 3	Lesson 4	Lesson 5
Lesson 6	Lesson 7	Lesson 8
Lesson 9	Lesson 10	Lesson 11

My snapshot

Lesson 4: Roberto's Rainforest Map

Concept

A specific area can be organized by using a map. A rainforest has many different plants, insects, people, and animals that live and grow in special places in the rainforest. The rainforest, with its millions of plant and animal species, make up a special community called an ecosystem. This term means house or place. Of all the ecosystems on earth, tropical rainforests are the most complex. Every rainforest is different, but a general rule applies to the plants, animals, insects, people, and birds found in the tropical rainforests along the equator, South America, Central America, Madagascar, Australia, Africa, and Southeast Asia.

Stress that the "picture" created in this lesson is a map.

Vocabulary

1. **Map:** A map is a drawing of the earth or a special part of the earth.
2. **Tropical rainforest:** The rainforests are very special places. They are home to half of the earth's animal and plant species but cover only about seven percent of the earth's land. The tropical rainforest is really different worlds stacked one on top of the other. It rains almost every afternoon. Some rainforests get more than 30 feet of rain each year. Temperatures in tropical rainforests are fairly constant, ranging between 68°F and 85°F.
3. **River:** The muddy river winds through the warm, rainy forest for 4,000 miles. Large lily pads can be found in the river. Many animals, including the peccary, come to the river for a drink.
4. **Forest floor:** The dim forest floor receives very little sunlight. This layer of the rainforest has almost 100% humidity. There is also very little wind. Even during a windy rain the forest floor remains calm. Few plants grow on the forest floor because there is so little light. The small plants that need little light, such as ferns, grow here. Some plants, animals, and insects that live on the forest floor are: termites, giant earthworms, anteaters, tarantulas, leaf-cutting ants, moss, large snakes, jaguars, armadillos, poison arrow frogs, flightless birds, wood turtles, and small brown and light green plants. The inhabitants that live on the forest floor are decomposers that live on leaf litter and decaying plants and animals. They recycle the forest waste to provide nutrients for plants to use.
5. **Understory:** This is the second layer of the rainforest. It is dim and humid. Bushes, shrubs, vines, and small trees grow here. This tangle of shrubs, young trees, palms, and woody plants grow in the shade of the taller trees. Some of the trees will eventually grow taller and become part of the third layer. Some plants, insects, and animals that live in the understory are: ferns, banana trees, spider monkeys, tarantulas, jaguars, and most of the insects of the rainforest.

6. **Canopy:** The tops of very tall trees in the forest form this layer. Canopy trees may reach a height of 150 feet. Slender trunks branch out into leafy crowns, forever reaching for the sun. Some of the plants, animals, and insects that live in the canopy are: three-toed sloths, parrots, bromeliads, large-leafed vines, hummingbirds, howler monkeys, tree frogs, iguanas, butterflies, air plants, tall trees, and bats.
7. **Emergent:** Some canopy trees stretch to get above the crowd of trees in the canopy layer to form the emergent layer. These trees may grow to 300 feet tall. These trees receive the full brunt of the hot sun, wind, and rain. The tops of the trees are umbrella shaped and grow on long, thin trunks. Buttresses or stilt roots often help support the trees' shallow root systems. Some of the plants, animals, and birds that live in the emergent layer are very tall trees, parrots, and eagles.

Materials

Activity: Roberto's Rainforest Map

1. Crayons in appropriate colors for animals, insects, birds, water, etc.
2. Glue or paste, per team
3. Scissors, share within teams
4. Blue construction paper, 11"x17", for background, one sheet per student
5. RIVER PATTERNS, color blue mixed with brown, glue river to background, one per student
6. EMERGENT PATTERNS, white construction paper, color appropriately and glue as the top rainforest layer, glue word emergent at the upper left of the map, one per student
7. CANOPY PATTERNS, white construction paper, color trees and animals appropriately, glue below emergent layer with the tree bottoms reaching the forest floor, glue word Canopy below emergent layer, one per student
8. UNDERSTORY PATTERNS, white construction paper, color foliage and animals, glue so plants and animals appear stacked below the Canopy tree with shrubs reaching the forest floor, glue word Understory below the canopy layer, one per student
9. FOREST FLOOR PATTERNS, run on white construction paper, color foliage light green and brown, color animals appropriate colors, glue to bottom of map, glue words Forest Floor to the bottom section of map, one sheet per student
10. Yellow construction paper scrap, yellow sun glued high on the map
11. Cotton balls, three per student for clouds in emergent layer

Enhancement: RAINFOREST BIG BOOK

1. Magazine pictures that depict rainforest layers
2. RAINFOREST BIG BOOK pattern, page 42

The colors on the map are really bright.

The size of the plants and animals are not in actual proportion.



Start building the rainforest map with the river, then Emergent layer, Canopy, Understory, and finally Forest Floor. It makes the lower layers more visible.

My students love plastering all the pieces of water, birds, trees, etc. they can cut and paste on the appropriate page until they have completely covered every inch of the page.

Procedure

1. Put students in canoe teams.
2. Tell students that they are going to make a map of Roberto's Rainforest. Explain the habitat of the tropical rainforest (see concept and vocabulary).
3. Do map activity. Follow directions on the pattern pages.
4. After activity, ask teams closure questions: Name some things that are found in the tropical rainforest. What does the land look like as you canoe through the rainforest? What would the rainforest look like if you saw it from an airplane? (Answers are in concept and vocabulary.)
5. Stamp passports when activity is completed.

Activity: Roberto's Rainforest Map

The map is a layered look of the rainforest. Many plants and animals are provided for this activity. Some may be omitted if the map becomes too cluttered.

Enhancement: RAINFOREST BIG BOOK

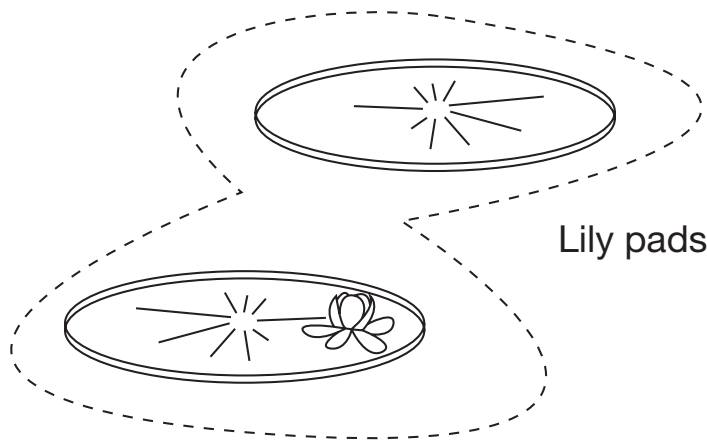
Have students build a Roberto's Rainforest big book map. The book will look like a colorful collage of each of the rainforest layers. On each page cut and paste from magazines pictures that depict each rainforest layer. Add the rainforest layers labels to each page. Share and read aloud Roberto's Rainforest big book map with other classrooms as a literature experience.

Lesson 4

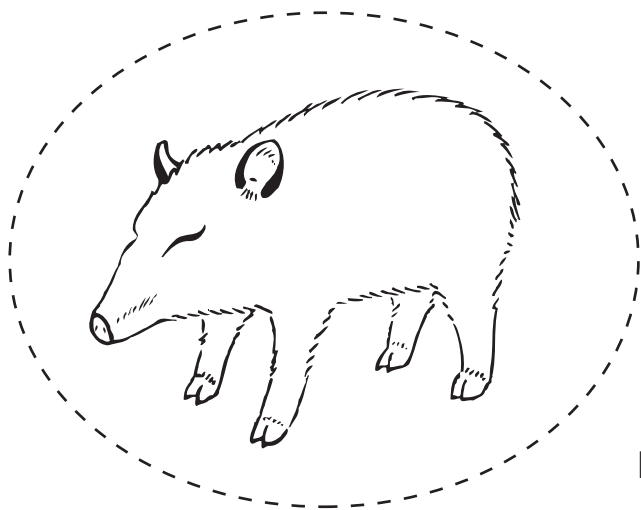
Activity

RIVER PATTERNS

Directions: Color, cut, and glue to 11"x17" blue construction paper.



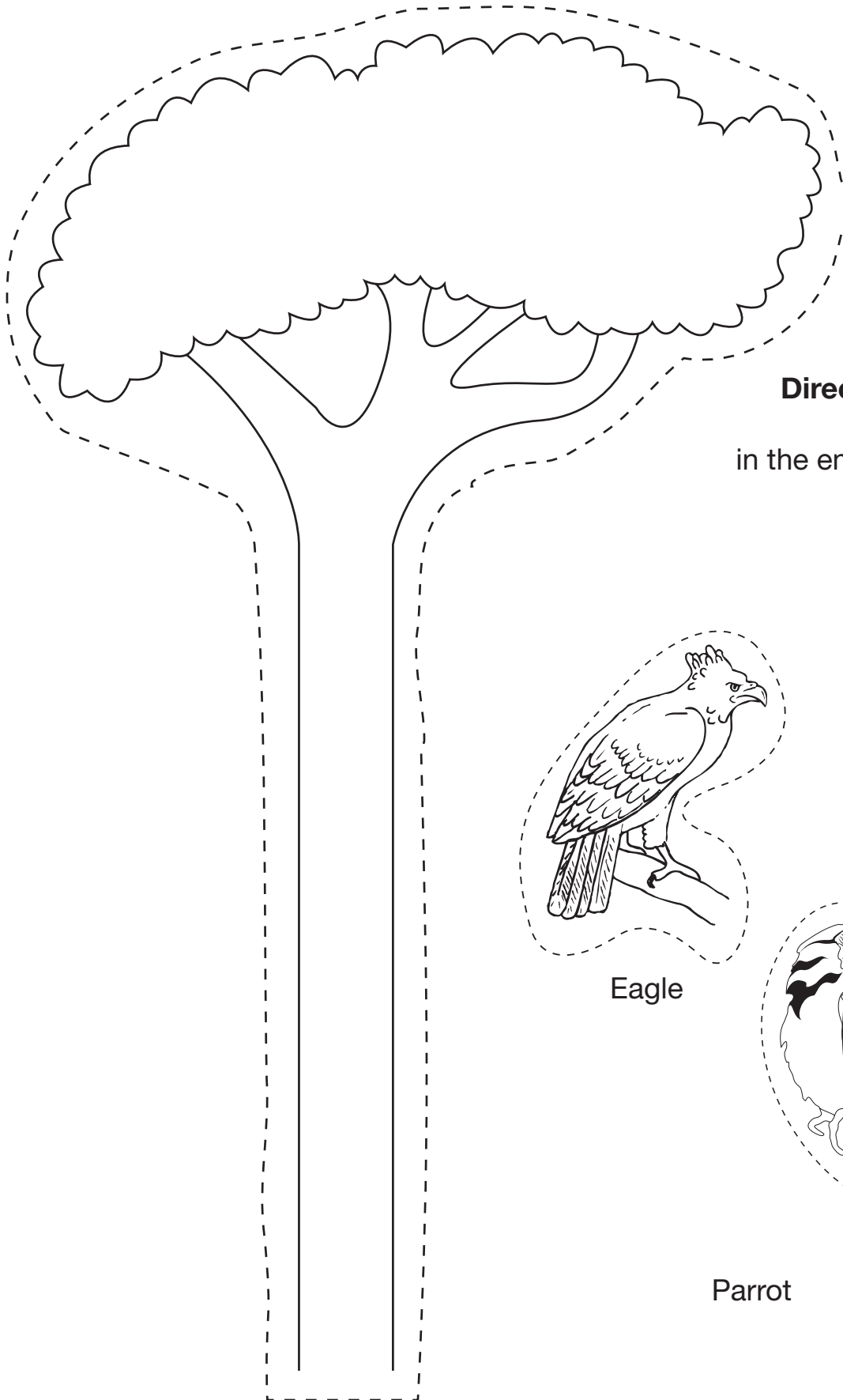
Lily pads



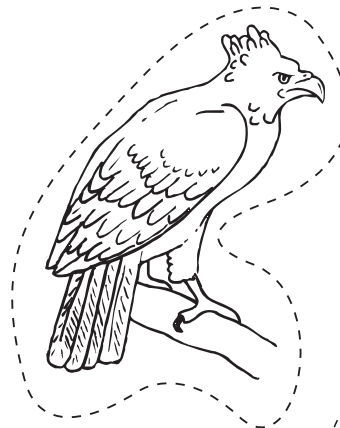
Peccary

Lesson 4
Activity

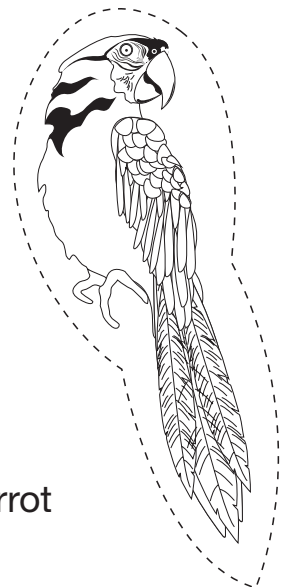
EMERGENT PATTERNS



Directions: Color,
cut, and glue
in the emergent layer.



Eagle

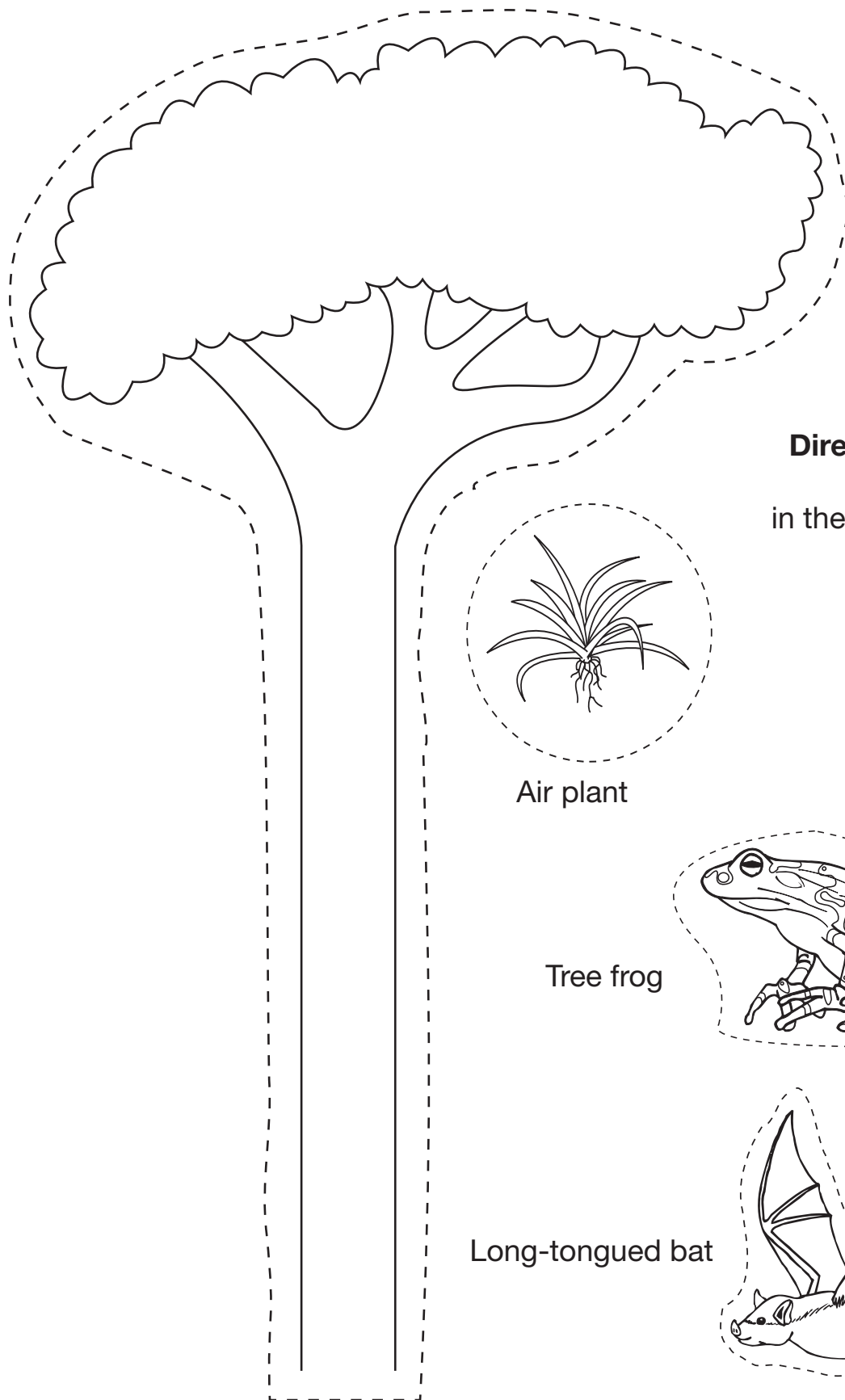


Parrot

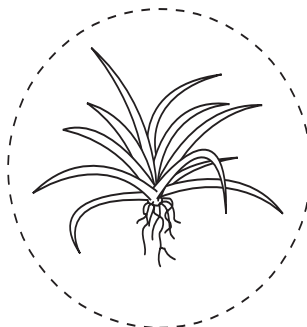
Lesson 4

Activity

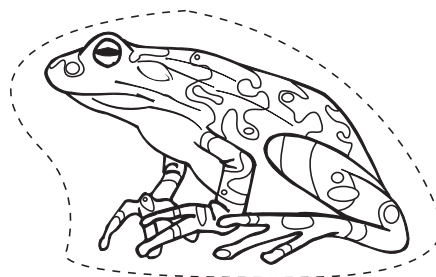
CANOPY PATTERNS - 1



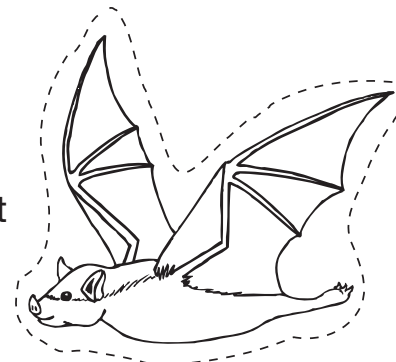
Directions: Color,
cut, and glue
in the canopy layer.



Air plant



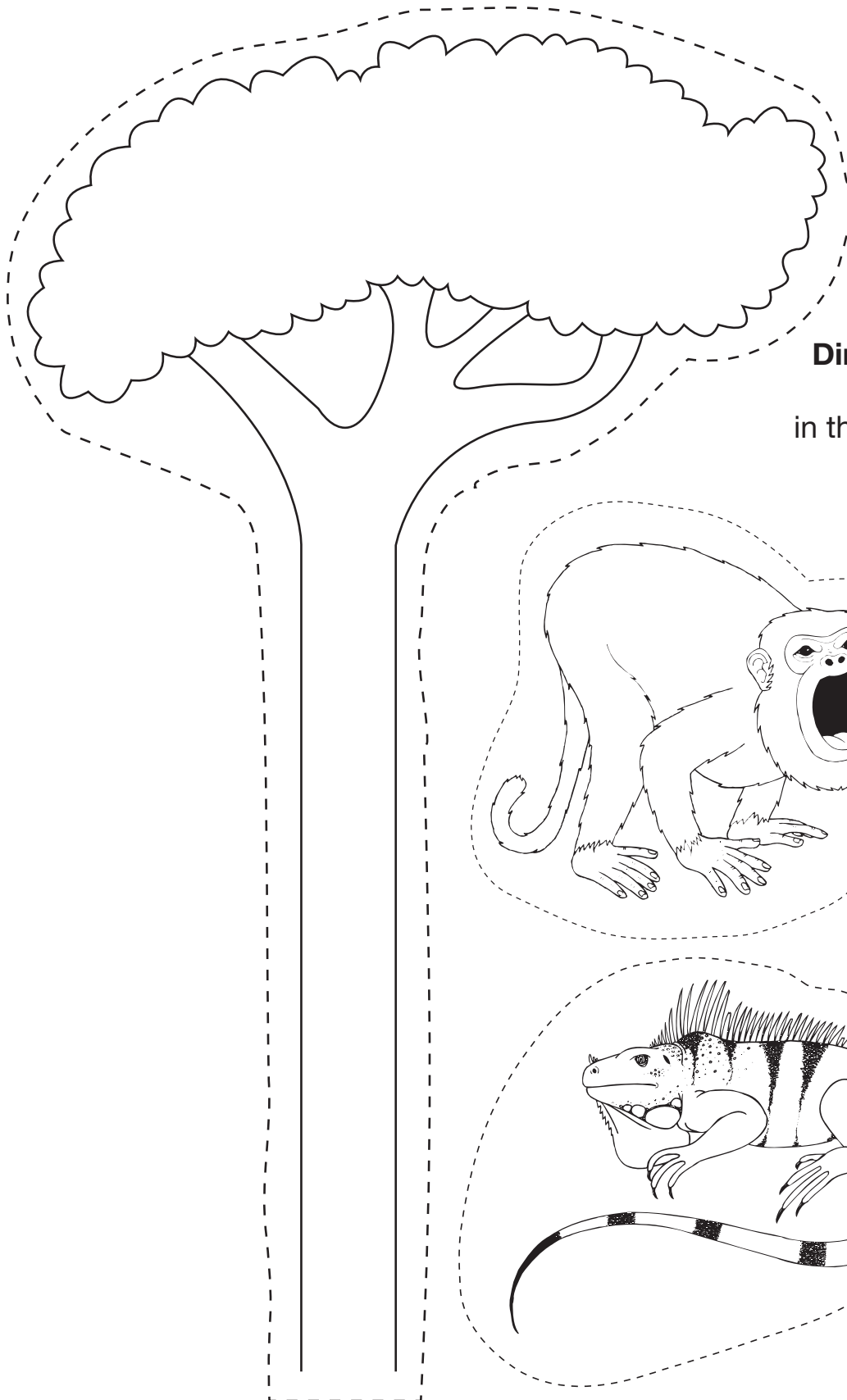
Tree frog



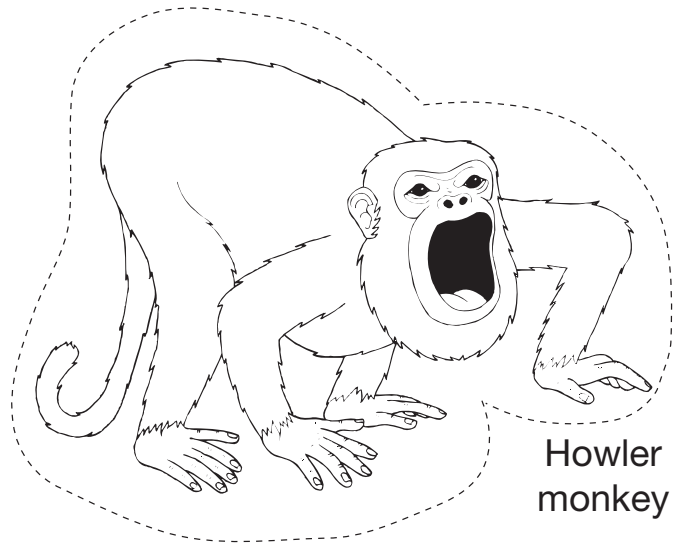
Long-tongued bat

Lesson 4
Activity

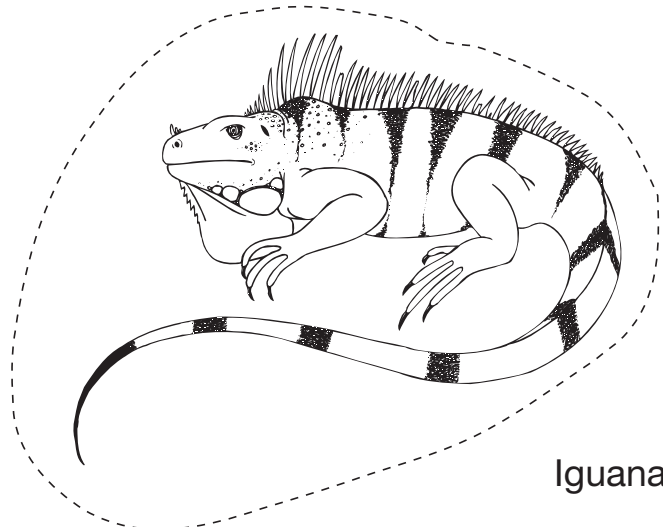
CANOPY PATTERNS - 2



Directions: Color,
cut, and glue
in the canopy layer.



Howler
monkey



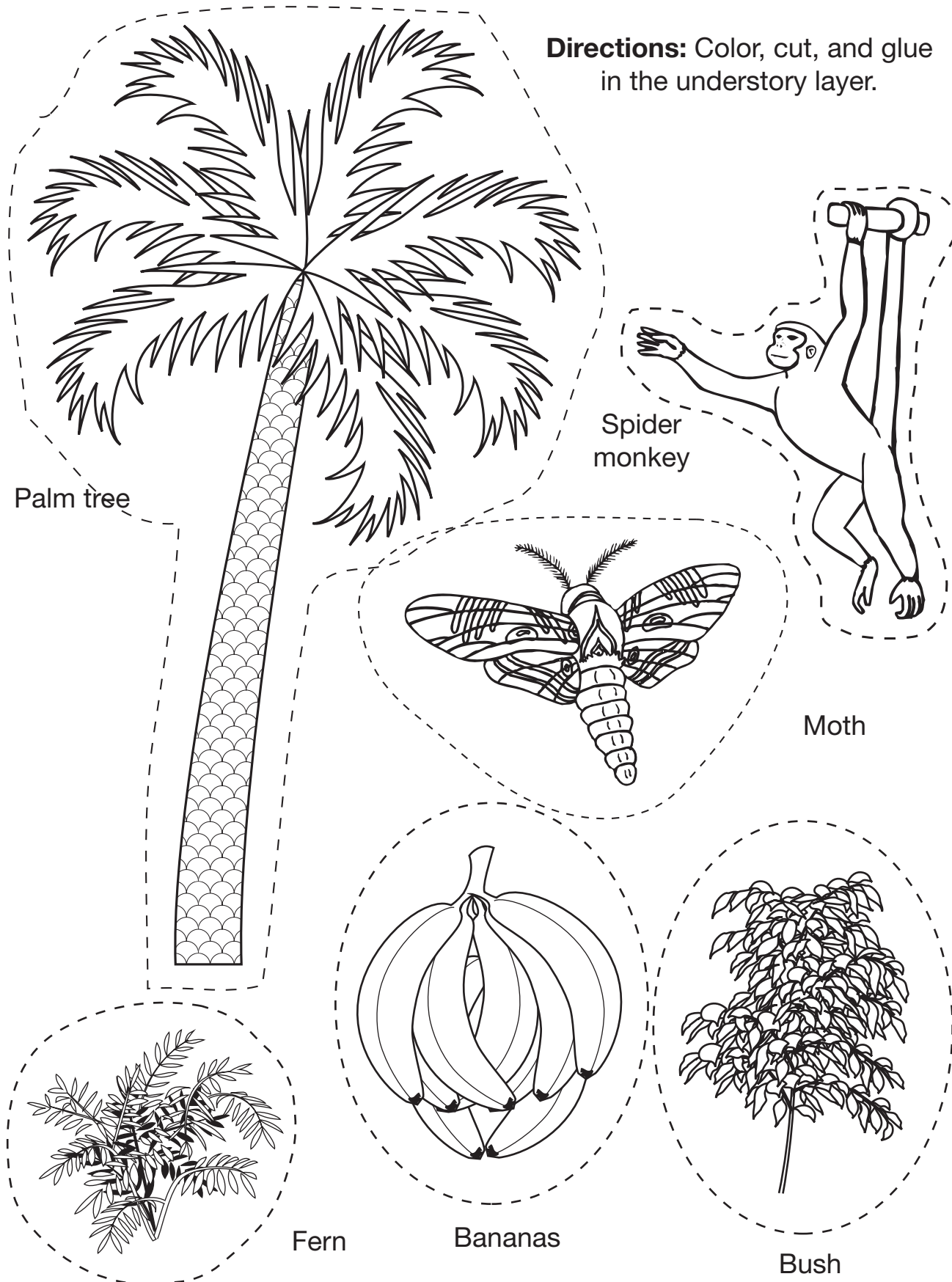
Iguana

Lesson 4

Activity

UNDERSTORY PATTERNS

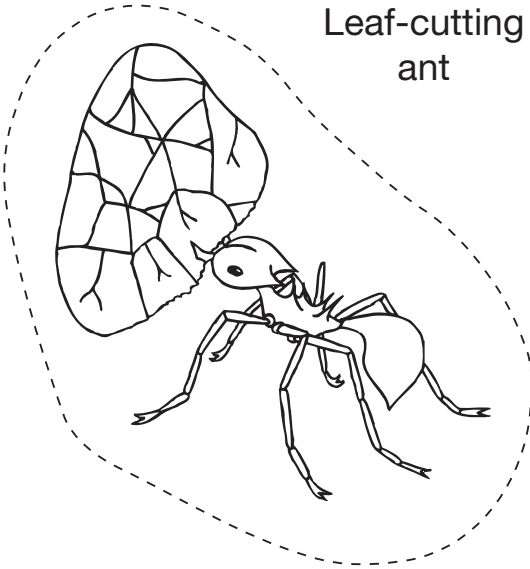
Directions: Color, cut, and glue in the understory layer.



Lesson 4
Activity

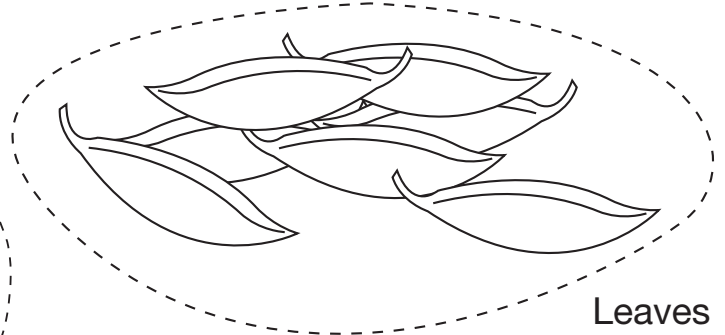
FOREST FLOOR PATTERNS

Leaf-cutting
ant



Directions: Color dark green and brown, cut, and glue in the forest floor layer.

Leaves



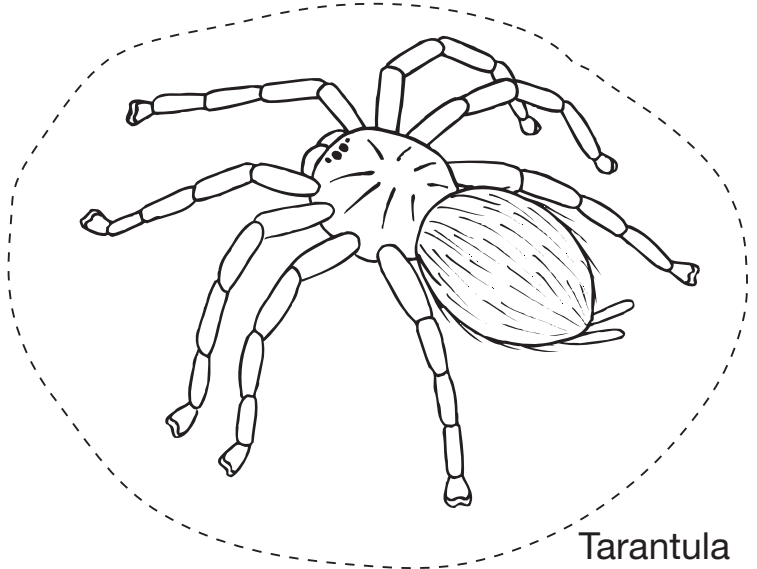
Moss



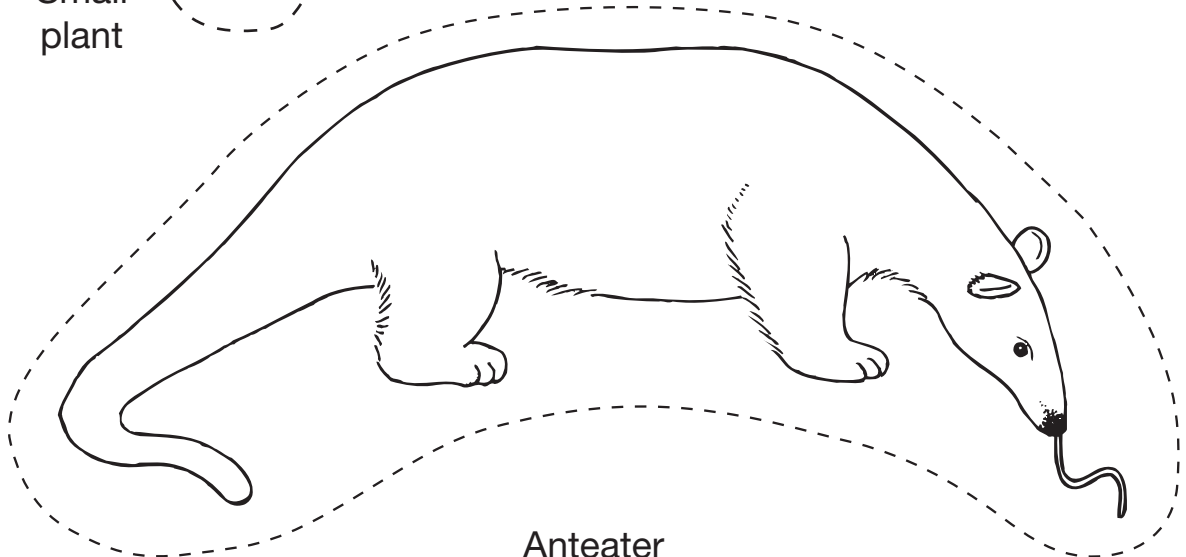
Small
plant



Tarantula



Anteater



RAINFOREST BIG BOOK

Directions: Use these labels for the cover and subsequent pages in Roberto's Rainforest Big Book.



Roberto's Rainforest Big Book



The River in Roberto's Rainforest



The Forest Floor in Roberto's Rainforest



The Understory in Roberto's Rainforest



The Canopy in Roberto's Rainforest



The Emergent in Roberto's Rainforest

Lesson 5: Plants in Roberto's Rainforest

Concept

A rainforest is covered with many different kinds of plants. A variety of plants live in the different layers of the rainforest according to their environmental needs. All of the plants that grow in the rainforest require large amounts of rain or humidity. The plants of the rainforest provide us with many important products used throughout the world: tropical fruits and vegetables, spices and flavors, coffee, tea, important medicines, hardwoods, canes, fibers, house plants, gums, resins, and oils. The rainforest supplies oxygen in the air. The many plants in the rainforest give off oxygen for animals and humans to breathe.

A lot of tropical plants will probably come to mind when you do this lesson.

Vocabulary

1. **Tropical fruit trees and vegetables:** Many of our tropical fruits and vegetables were discovered in the rainforest. The animals of the rainforest use the fruits, vegetables, and seeds as food. Some of these fruits are: avocado, banana, coconut, grapefruit, guava, heart of palm, lemon, lime, mango, orange, papaya, passion fruit, pineapple, plantain, and tangerine.
2. **House plants:** Many leafy plants from the rainforest have been adapted for house plants. These plants are found on the forest floor and understory layers of the rainforest. Some of these plants are: African violet, begonia, bird's nest fern, bromeliad, Christmas cactus, corn plant, dumb cane, fiddle-leaf fig, orchid, philodendron, rubber plant, snake plant, umbrella tree, and zebra plant.
3. **Woods:** Many short and tall trees grow in the canopy and emergent layers of the rainforest. Some of these woods have been used to make furniture, floors, doors, toys, and cabinets.
4. **Spices, flavors, nuts:** The rainforest supplies the world with many spices and flavors discovered by early explorers. The native people of the rainforest have used the spices, flavors, and nuts for many years. Some of these products are: coffee, cashew, cola, macadamia, tapioca, tea, pepper, allspice, cayenne, chili pepper, cocoa, cinnamon, cloves, ginger, mace, nutmeg, paprika, turmeric, and vanilla.
5. **Medicines:** One-fourth of prescription drugs in the United States contain a natural compound often from the rainforest. These drugs come from tropical plants, vines, roots, bark, and flowers. Scientists continue to identify and study rainforest plants for use as medicines and food.

Materials

Activity: PLANTS OF THE RAINFOREST (pages 35–39)

1. Rainforest plant patterns, two or three copies of the same page per canoe group
2. heavy chipboard or cardboard on which to transfer plant pattern

3. appropriate tempera or fluorescent paints for plants, per team
 4. brushes and clean up supplies, per team
- Option: PLANTS IN POETRY (page 40)*
1. plants scripts for rainforest tour, make desired copies
 2. display copies of plant scripts if you plan a group presentation of the scripts
- Enhancement: FRUIT ROLL IT (page 41)*
1. pair of dice, per team
 2. FRUIT ROLL IT game sheet, one per team
 3. pencil, per team

Procedure

1. Put students in canoe teams.
2. Explain the concept and vocabulary in simple terms.
3. Do chosen activity.
4. Ask teams closure questions: Where do most tropical fruits and vegetables come from? Name three tropical fruits. Why do you think some plants from the rainforest can live in your house? Many spices, flavors, and nuts come from the rainforest. Name three of them. How do we use wood from the rainforest? If you got sick and the doctor gave you medicine where might that medicine have been discovered?
5. Stamp passports after activity is finished.

Activity: PLANTS OF THE RAINFOREST

After the plants have been painted and dried, pin them on the background you have provided for the rainforest. The plants will provide the background structure that the rest of the rainforest will build upon. You can put the names of the plants next to each or even put a copy of the poem in the rainforest for students to see and read. The information in the concept could also be transferred to the rainforest walls.

Option: PLANTS IN POETRY

Students practice the poems about the rainforest plants. If the poems are too easy or difficult, adjust for your students. These poems can be recited by teams when you have other classrooms tour the rainforest.

Enhancement: FRUIT ROLL IT

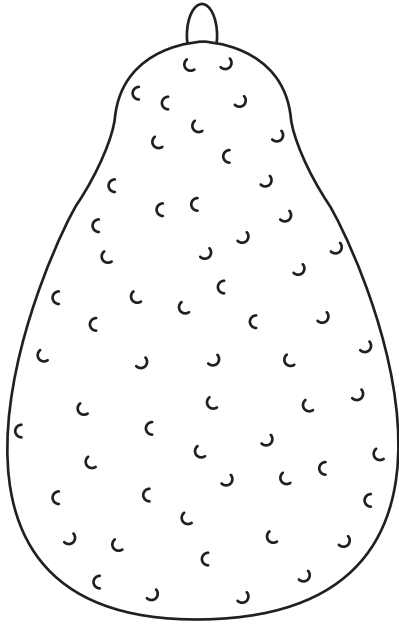
Plant Roll It is played with the game sheet and a pair of dice. Allot a certain amount of time to play the game, usually seven to 12 minutes is plenty of time. Each person on the team takes a turn to roll the dice. Taking turns continues until the game is over. Each number on the dice represents a plant on the game sheet. The number rolled is recorded with an X in the corresponding column on the game sheet. After game time has run out, teams observe which number was rolled the most, therefore appointing a winning fruit. The plant winner's name is written on the line at the bottom of the game sheet.

*Your students
will enjoy
this game.*

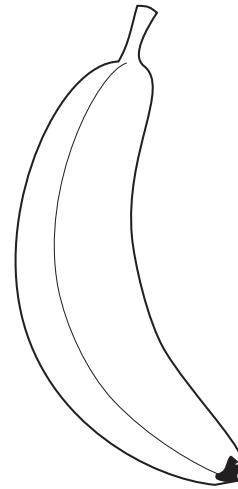
Lesson 5
Activity

PLANTS OF THE RAINFOREST - 1

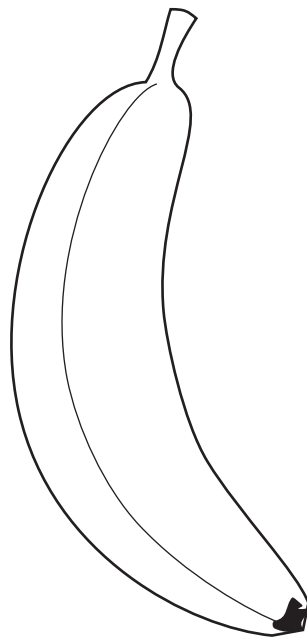
Directions: Transfer these patterns to a more natural size on heavy material.
Have a canoe team paint them.



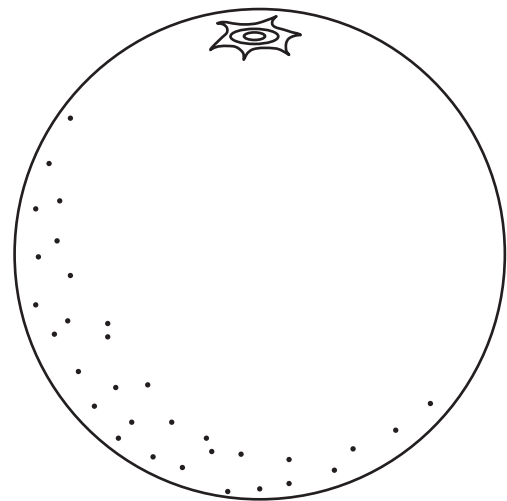
Avocado



Plantain



Banana



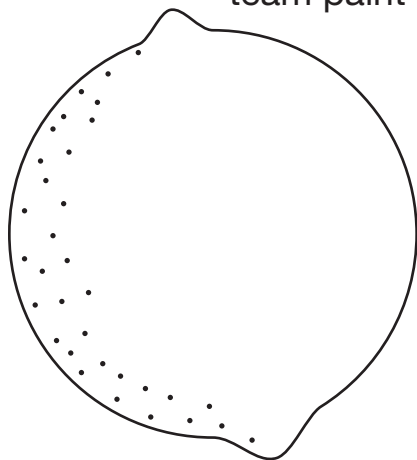
Orange

Lesson 5

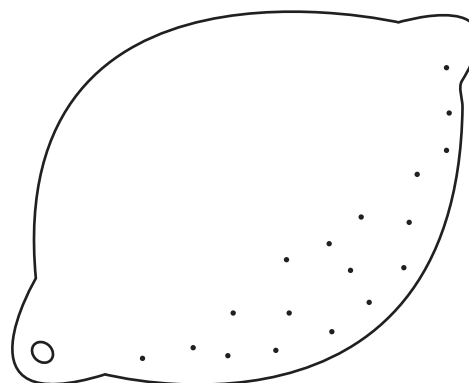
Activity

PLANTS OF THE RAINFOREST - 2

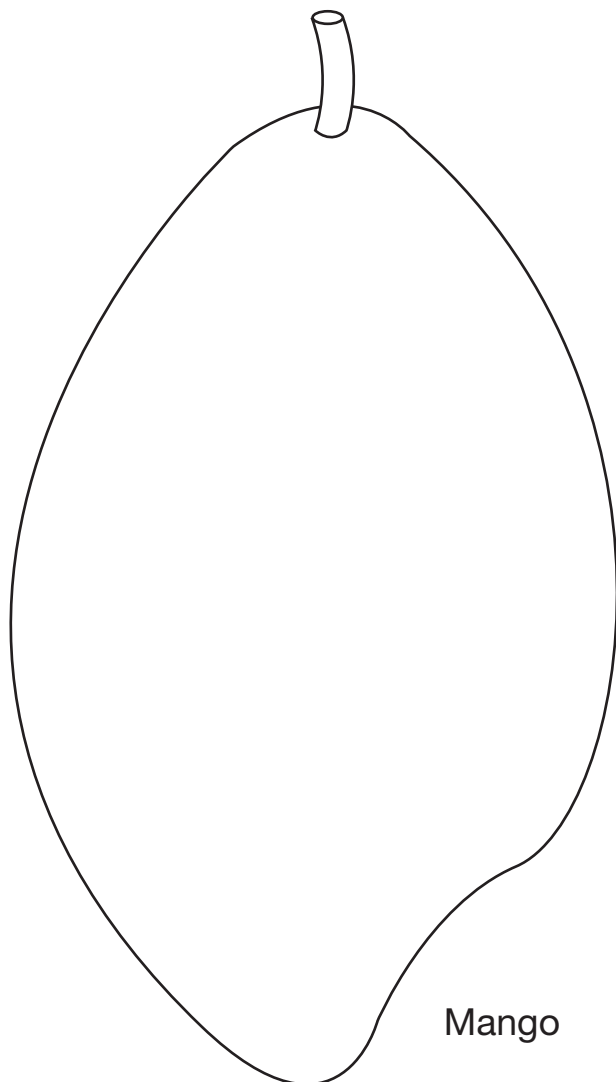
Directions: Transfer these patterns to a more natural size on heavy material. Have a canoe team paint them.



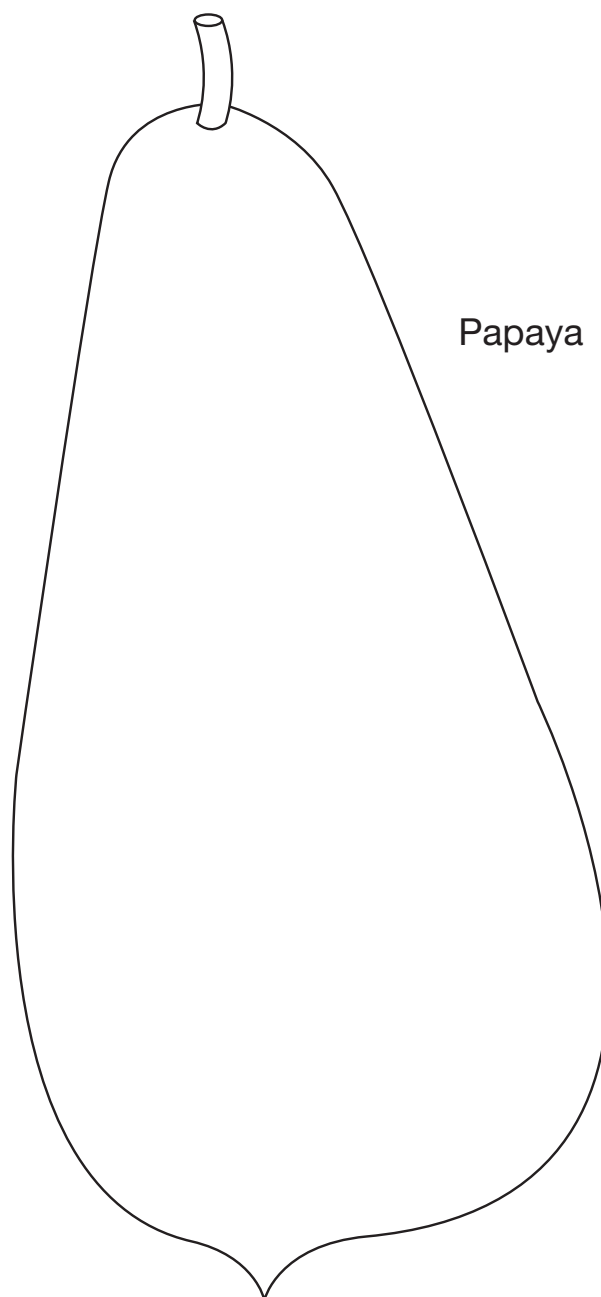
Lemon



Lime



Mango

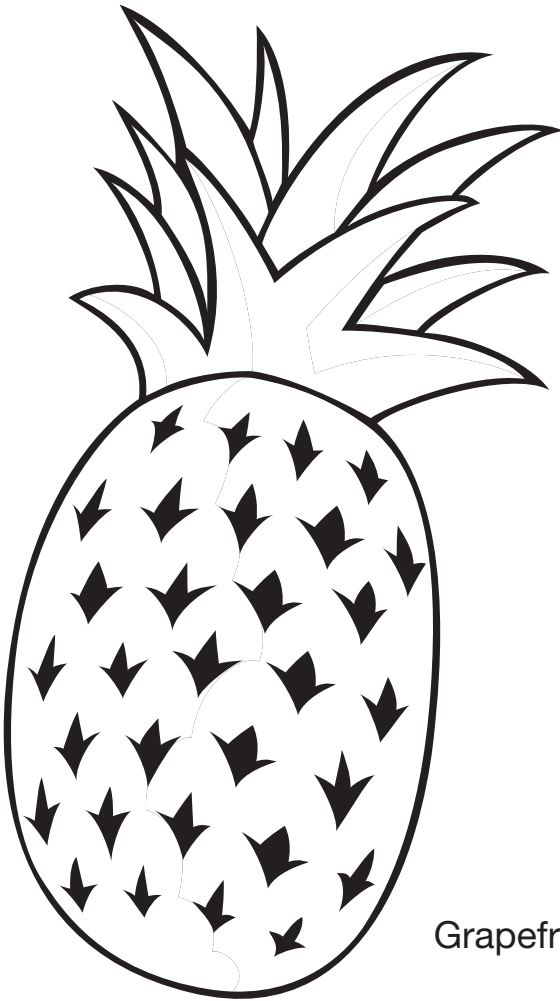


Papaya

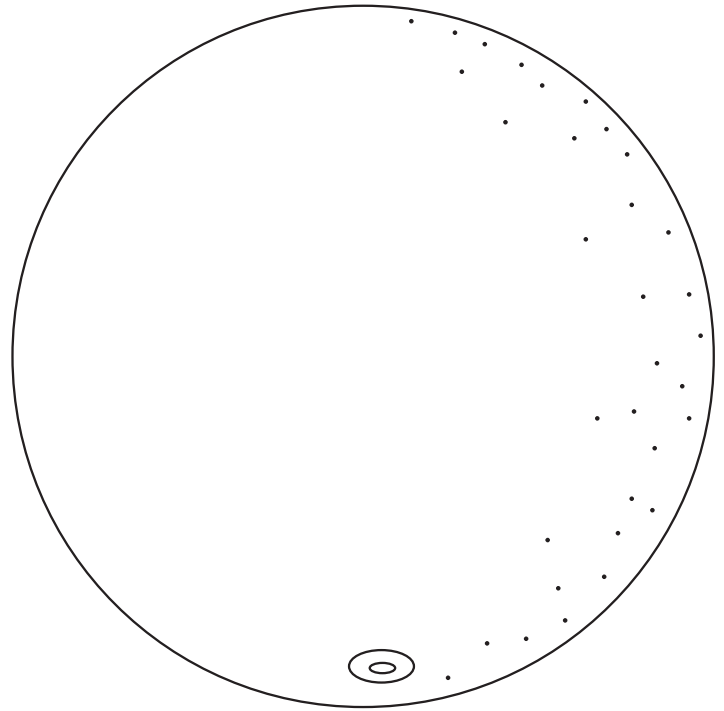
Lesson 5
Activity

PLANTS OF THE RAINFOREST - 3

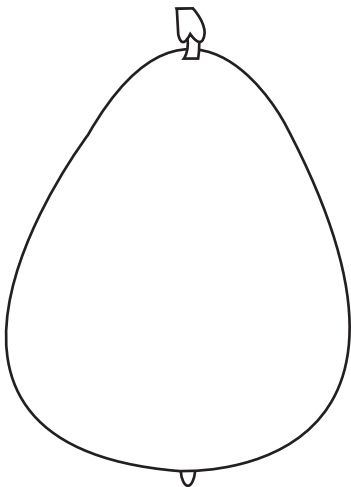
Directions: Transfer these patterns to a more natural size on heavy material. Have a canoe team paint them.



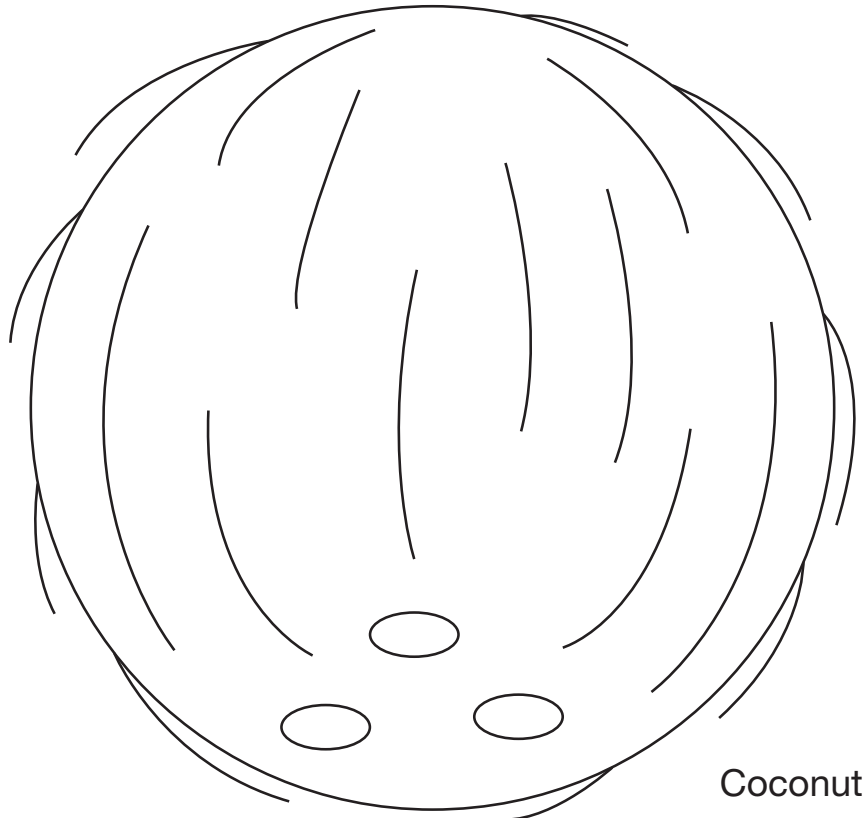
Pineapple



Grapefruit



Passion fruit

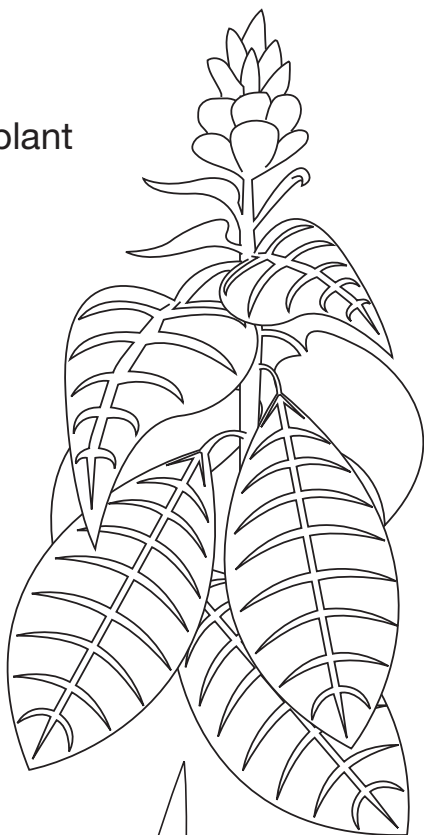


Coconut

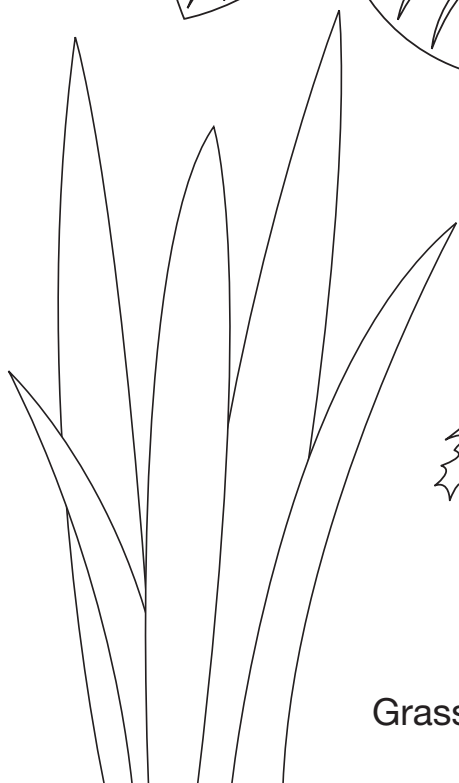
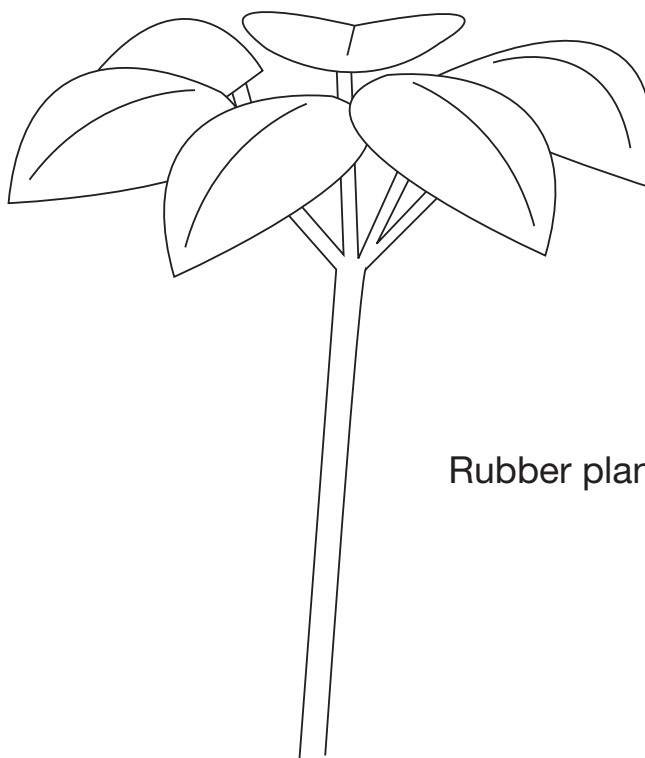
PLANTS OF THE RAINFOREST - 4

Directions: Transfer these patterns to a more natural size on heavy material.
Have a canoe team paint them.

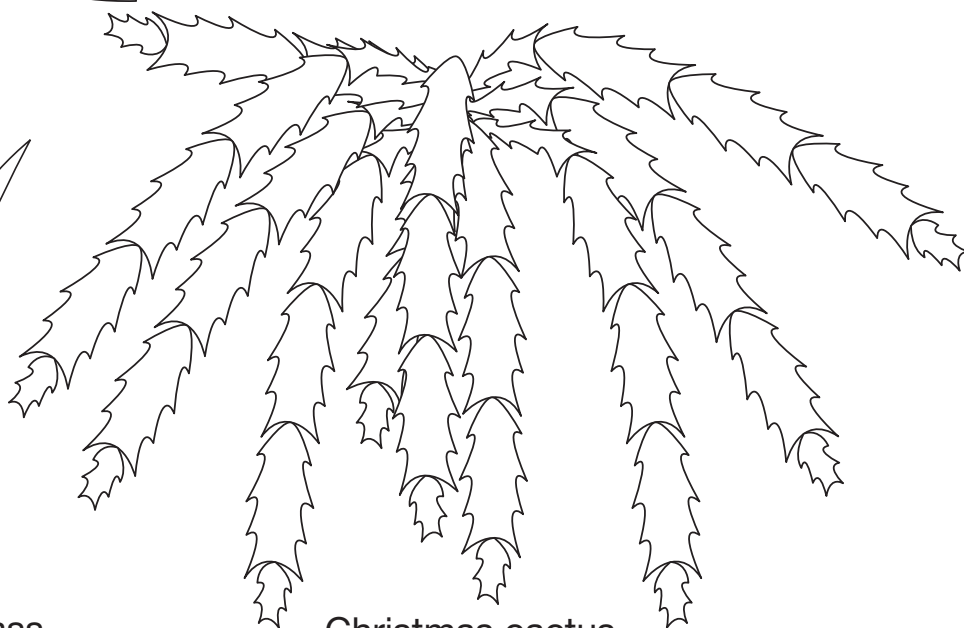
Zebra plant



Rubber plant



Grass



Christmas cactus

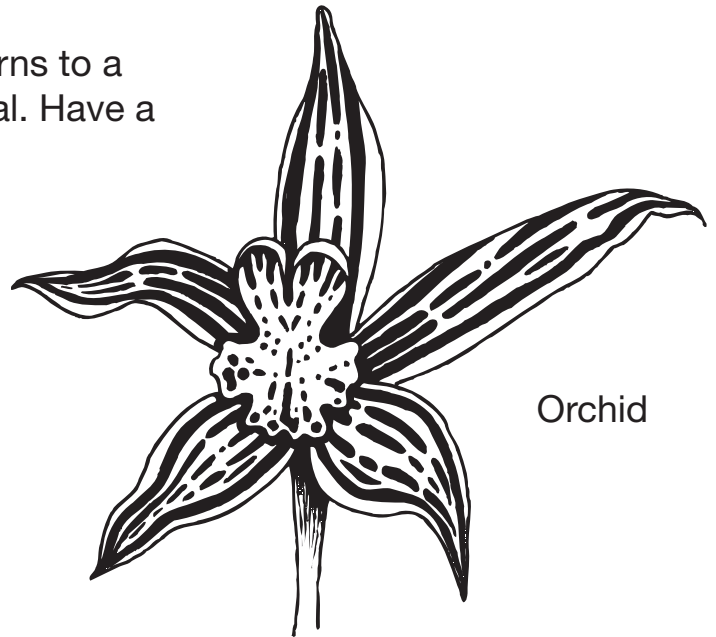
Lesson 5
Activity

PLANTS OF THE RAINFOREST - 5

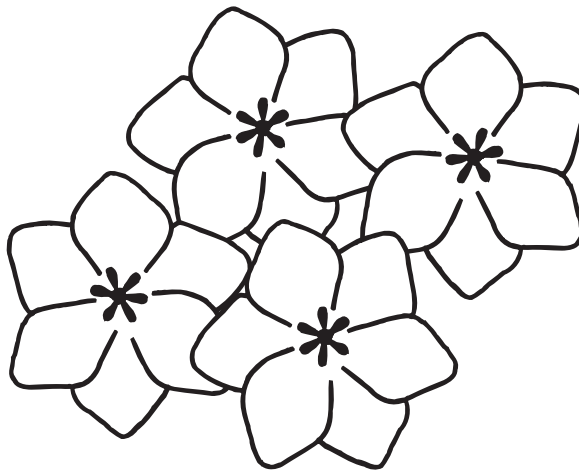
Directions: Transfer these patterns to a more natural size on heavy material. Have a canoe team paint them.



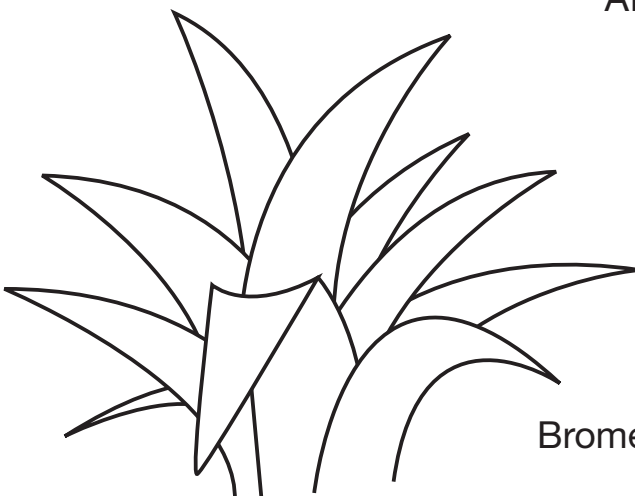
Fiddle-leaf fig



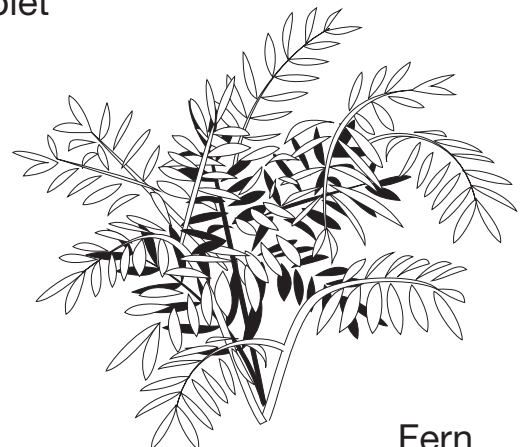
Orchid



African violet



Bromeliad



Fern

Lesson 5

Option

PLANTS IN POETRY

Fruits and Vegetables

Avocado, orange and lime
These are fruits that taste so fine
Pepper, palm and tangerine
The list goes on so it seems
Guava, grapefruit, mango too
All are good for me and you

House Plants

Green leafy plants in your home
In the rainforest they all roam
Sharing plants is good for us
Take just a few if you must

Plants that grow inside and out
Beautiful things just look about
Green leafy plants in your home
In the rainforest they all roam

Woods

In the forest chopping wood
Take a little we know we should
Leave them there so they can do
Jobs that help both me and you
Helping weather, giving air,
Trees are valuable everywhere
Let them stand so tall and proud
Send the message far and loud

Spices, Flavors, Nuts

Pizza tastes great
Take a bite
Spices and flavors
Make them right
With yummy tastes
On our table
Flavors from forests
On the label

Spices in food
Nuts for snack
In our lunch pail
We will pack

Medicines

When you are sick
Doctor might pick
Medicine from the rainforest

When your are ill
Your mom can still
Pick medicine from the rainforest

When you have the blahs
And your dad knows the cause
Pick medicine from the rainforest

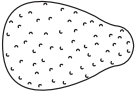
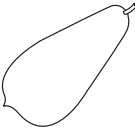
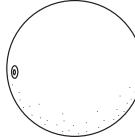


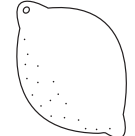
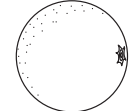

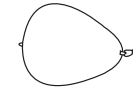
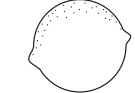

Medicines can cure
Feel better for sure
Pick it from the rainforest

When you are sick
Doctor might pick
Medicine from the rainforest

Lesson 5
Enhancement

FRUIT ROLL IT

Directions: Roll the dice and record your throws on the graph.
Play until the teacher tells you to stop.

	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					

_____ is the winning fruit.

Team name _____

Lesson 6: Birds in Roberto's Rainforest

Concept

Many kinds of birds live in Roberto's Rainforest. In the canopy layer, birds have lots of places to live. They can live in the trees and in the many bushes that grow there. Most birds eat things such as insects, snakes, and worms. Birds also eat fruit, seeds, and vegetables. Each kind of bird has its own favorite food for which it hunts. Most of the birds have brilliantly colored feathers. There are many sizes of birds in the rainforest. Each kind of bird has its place and adds to the makeup of the rainforest ecosystem.

Vocabulary

1. **Macaw:** (Central America and South America rainforests) The husky red-and-blue macaw is a very large parrot that can weigh up to three pounds and measure more than three feet from head to tail. The slightly slimmer scarlet macaw unfurls darker blue wings with brilliant yellow shoulders. The blue-and-yellow macaw flashes more turquoise and gold on its body. All three kinds of macaws have tails as long as their bodies. There are at least 16 different kinds of macaws. Some of them weigh only one pound. They have the most powerful bites in the bird world. Macaws will mate for life. Macaws eat the seeds inside of fruit. Macaws want the seeds and not the fruit which makes them different from most birds of the rainforest. They crack the seeds with their powerful beak and eat them. They also eat the pulp of some fruits and occasionally flowers and leaves. Macaws eat about 60 favorite seeds available in the rainforest. Macaws also eat an interesting thing around riverbanks. They eat river clay. Scientists think they eat the clay for salt and other minerals that they do not get in seeds and fruit.
2. **Hummingbird:** The smallest of all birds is the hummingbird. More than 300 species of hummingbirds make their home in the rainforests. They range from two inches to eight-and-a-half inches long. They come in a variety of colors. Hummingbird feathers shine and shimmer in the sunlight so it looks like they change colors. Many of the hummingbirds are named after jewels—rubies, sapphires, and emeralds. Hummingbirds fly fast—up to 71 miles per hour. Hummingbirds use their long beaks and tongues to sip nectar from the flowers—their main food source. The flowers of the rainforests need the hummingbirds to pollinate them. These birds also eat insects and pollen. Hummingbirds are flying experts and can fly backward.
3. **Toucan:** The toucan has a very large bill. Some toucans' bills are longer than their bodies. The toucan uses his big bill to squash the many kinds of fruits he eats. His favorite fruit is the fig. Scientists think the colorful beak helps the male toucan attract a mate. When he is sleeping, the toucan lays his beak on his back



Many local museums have slides or pictures of birds that they loan. Some museums even have wonderful speakers/activities that they bring to schools. Check it out.

and covers it with his wings and tail. The toucan is very important to the rainforest because he helps spread seeds from the fruit he eats. The seeds will start new plants that grow in the rainforest.

4. Bat: The bat is common in the rainforests. They are not birds, but the world's only flying mammals. Many bats hunt insects but some eat fruit. Bats help to spread seeds around the forest.
5. Eagle: The largest eagle in the world is the harpy eagle. The eagle is three-and-one-half feet tall yet most creatures below it do not notice it. The harpy eagle can suddenly swoop down into the canopy, twisting and turning between the large branches. It hunts for monkeys, birds, snakes, and other reptiles.

Materials

Activity: BIRDS OF THE RAINFOREST (page 45)

1. Rainforest bird patterns, two or three copies of the same bird per canoe team
2. heavy chipboard or cardboard on which to transfer bird patterns
3. overhead projector or opaque projector
4. display copies of patterns
5. appropriate tempera or fluorescent paints for birds, per team
6. brushes and clean up supplies, per team

Option 1: BIRDS IN POETRY (page 46)

1. bird scripts for rainforest tour, make desired copies
2. display copies of bird scripts if you plan a group presentation of the scripts

Option 2: Bird Puppets

1. bird patterns on heavy cardboard or chipboard
2. tongue depressors, one for each puppeteer

Enhancement: RESEARCHING ROBERTO'S BIRDS (page 47)

1. research books about rainforest birds
2. paper, pencils, or crayons

*We were
amazed at
our students'
ingenuity.*

Procedure

1. Put students in canoe teams.
2. Explain concept and vocabulary.
3. Do chosen activities.
4. After activities ask team closure questions: What two to five things do you know about birds in the rainforest? What is the smallest of all birds? Why does a toucan have such a big and colorful bill? About how big does a macaw get? Is a bat a bird or mammal? How does the harpy eagle hunt for its food?
5. Stamp passport when activity is finished.

Activity: BIRDS OF THE RAINFOREST

Before the lesson begins, transfer the bird patterns onto heavy paper or cardboard. Have students paint the birds appropriate colors. After the birds have been painted and dried, pin them high on the background you have provided for the rainforest. You can put the name of the bird next to it or even put a copy of the poem in the rainforest for students to see and read. The information in the concept and vocabulary sections can also be transferred to the rainforest walls.

Option 1: BIRDS IN POETRY

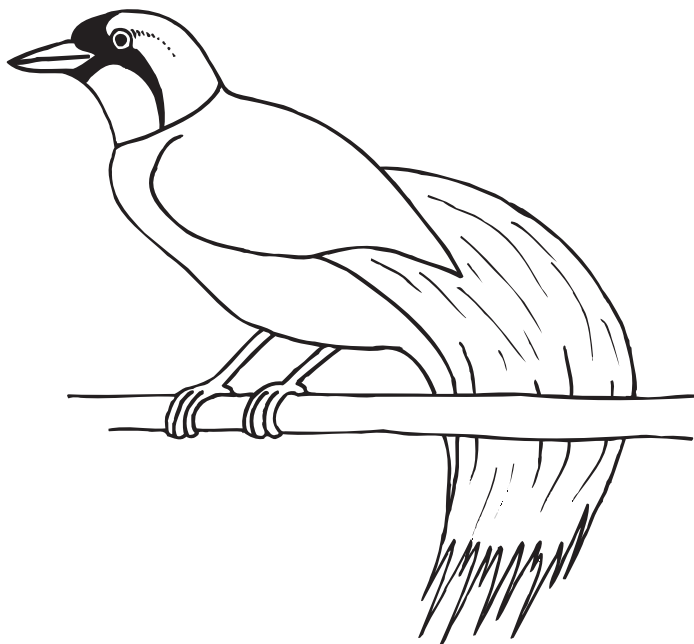
Students practice the poems about the rainforest birds. If the poems are too easy or too difficult, adjust for your students. These poems can be recited by canoe teams when you have other classrooms tour the rainforest.

Option 2: Bird Puppets

Have students glue the birds on large tongue depressors and turn them into puppets. With the puppets they can reenact bird behavior in the wild, including feeding patterns, where they live within the rainforest, what birds might be thinking, nest building, etc.

Enhancement: RESEARCHING ROBERTO'S BIRDS

This project can incorporate some research skills. Have students look at rainforest bird pictures in nature magazines, encyclopedias, bird books, etc. Have students select a bird that they would like to research. They can draw a picture of the bird and tell something they found out about their bird.

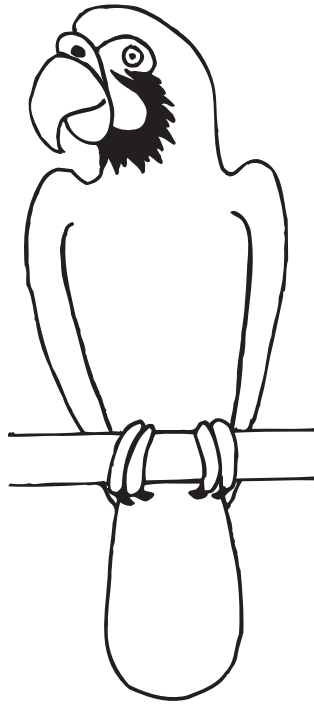


Lesson 6
Activity

BIRDS OF THE RAINFOREST



Macaw



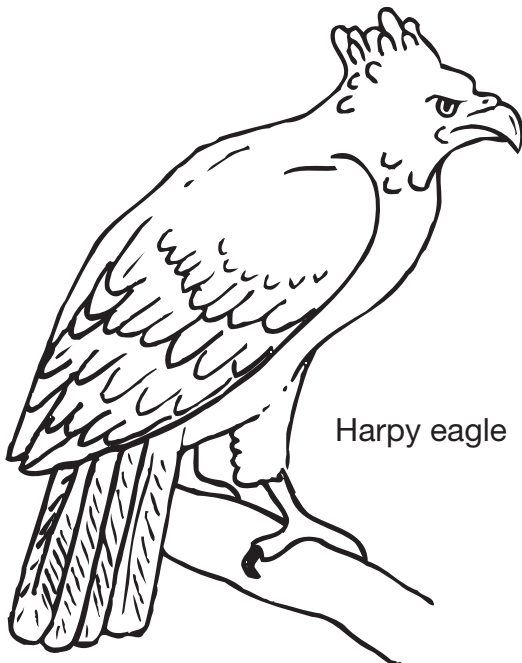
Parrot



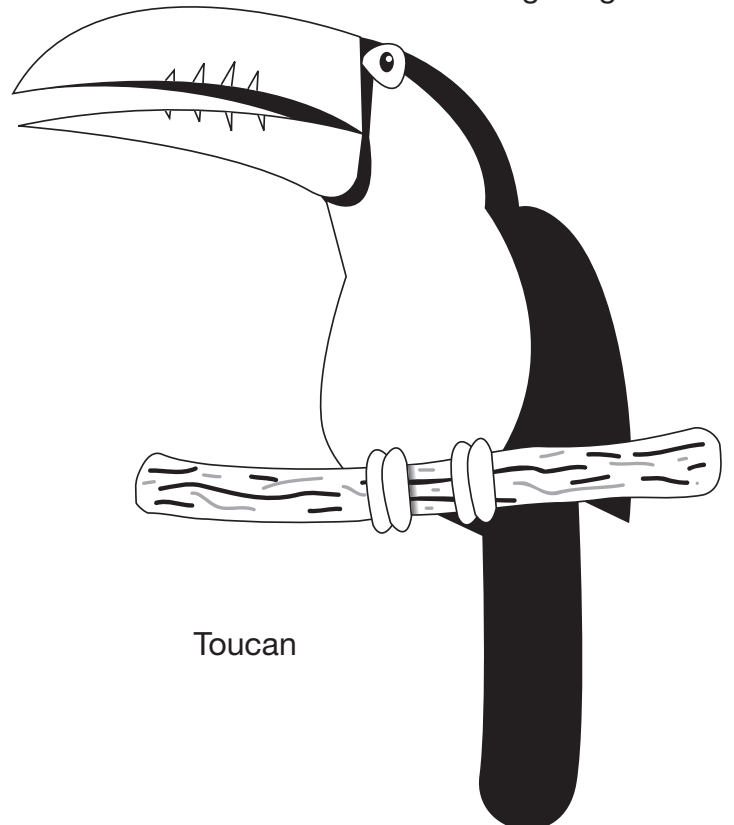
Hummingbird



Long-tongued bat



Harpy eagle



Toucan

Lesson 6

Option 1

BIRDS IN POETRY

Macaw

At three feet tall
Macaws are big
They will really
Bend a twig

Feathers of gold
Green and red
Blue and yellow
From tail to head

Strongest beaks
You must take heed
They use them most
To crack the seeds

They live way up
In the canopy
Safe and sound
For us to see

Hummingbirds

Hummingbirds fly
Hummingbirds zip
From the flower
They take a sip

Brilliant shine
Colors so cool
With a beak
That's quite a tool

Tiny hummers
Helping us
Spreading pollen
Eating bugs

Darting there
Darting here
A helpful bird
It's very clear

Toucan

See the toucan
High on a twig
Dropping seeds while
Eating a fig

Beak so bright
Beak so loud
Attracting females
Beak so proud

Bats

Bats aren't birds
But they fly all night
Catching insects
What a sight

Bats are lucky
They're mammals with wings
The only one
What awesome things!

Eagle

Eagle soaring
In the sky
Searching for food
Way up high

Looks for birds
Monkeys and snakes
They're great hunters
There's no mistake

Twisting and diving
Through the trees
Silent hunter
On the breeze

RESEARCHING ROBERTO'S BIRDS

Name of bird _____

What I found out _____

Here is a picture of my bird:

Lesson 7: Insects in Roberto's Rainforest

Concept

There are 10,000,000 different kinds of insects in the rainforest. Many of them live in the trees in the forest and some live on the forest floor. Insects play an important part in the rainforest. Insects help pollinate the plants, clean up debris, and provide food for other animals. These small rainforest creatures have the greatest number of natural enemies, so they have developed many ways to defend themselves. Some produce a poison in their bodies which makes them unpleasant to eat. Bold markings advertise the fact that they are poisonous. Predators learn to recognize these warning markings. Most insects have special shapes and coloring so they are camouflaged in the rainforest. Most insects live in the canopy because there is enough sunlight and adequate vegetation in this section of the rainforest.

Vocabulary

You might collect some local insects and show them to your students.

1. **Butterflies:** A square mile of rainforest may be home to as many as 1,500 species of butterfly. In comparison, only 750 species are in North America. Some butterflies have hidden eyespots on their wings which are flashed at would-be predators. The false eyes startle the attackers, giving the butterflies a chance to escape.
2. **Leafcutter ants:** These ants are farmers and make fungus. They cut pieces of leaves and flowers to carry back to their nest. Then they place the leaves in a dark underground room where a mushroom-like fungus grows on the leaves. The ants eat the fungus. Leafcutter ants are red ants. Hundreds of ants walk in a long line to find the leaves they want. One leafcutter colony can have five million ants.
3. **Beetles:** Beetles of all colors live in the rainforest. The white, red, and black harlequin beetle sits on bark with its long forelegs. The beetle finds food inside the bark. Beetles can be large, small, or medium sized.
4. **Dragonflies:** Dragonflies have a wingspan of up to seven inches and are among the largest insects living on earth. Dragonflies are predators, eating fish larvae and all sorts of bugs. They have excellent vision that helps them with hunting. Dragonflies land on water, plants, and animals while searching for food.
5. **Cicadas:** Cicadas are the world's loudest insects. They rub their front wings together making their "eeee-oooooh" siren sound. When many cicadas sing together the sound can be deafening.

Materials

Activity: INSECTS OF THE RAINFOREST

1. Rainforest insect patterns (page 50), two or three copies of the same insect per canoe team
2. heavy chipboard/cardboard onto which to transfer insect patterns

3. display copies of patterns
4. appropriate tempera or fluorescent paints for insects, per team
5. brushes and clean up supplies, per team

Option 1: INSECTS IN POETRY (page 51)

1. insects scripts for rainforest tour, make desired copies
2. display copies of insect scripts if you plan a group presentation of the scripts

Enhancement: Collecting Insects in the Wild

1. cloth sheet or large paper
2. stick or pole long enough to reach a low branch of a tree
3. container with lid to gather insects, one per team

Procedure

1. Put students in canoe teams.
2. Explain concept and vocabulary.
3. Do chosen activities.
4. After activities ask team closure questions: What two things do you know about insects in the rainforest? Where do dragonflies land? Can you make a cicada sound? Leafcutter ants eat fungus. What do we eat that is similar to fungus? Are there a lot or a few butterflies in the rainforest? What different colors are beetle?
5. Stamp passport when activity is finished.

You might find a tape with insect sounds to demonstrate to your students.

Activity: INSECTS OF THE RAINFOREST

After the insects have been painted and dried, pin them on the background you have provided for the rainforest. You can put the name of the insect next to it or even put a copy of the poem in the rainforest for students to see. The information in the concept and vocabulary sections can also be transferred to the rainforest walls.

Option: INSECTS IN POETRY

Have canoe teams memorize their teams' poem. They can recite the poem when they conduct tour groups through the rainforest.

Enhancement: Collecting Insects in the Wild

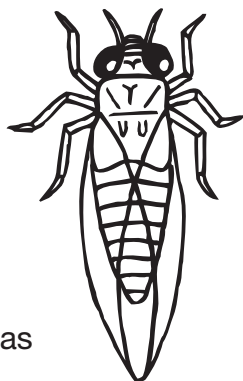
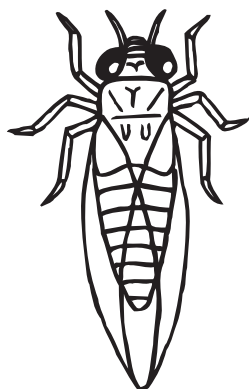
1. Leaf and twig creatures may be collected by a technique called tray beating. Lay a sheet on the ground under a low branch. Give the branch a sudden short rap with a stick. Don't disturb the branch beforehand, and hit it quick and hard. Take the specimens you need, and place the rest back in the tree.
2. Study the insects in a glass/plastic container provided with appropriate food materials. Make observations on their eating, sleeping, and working habits inside the container.
3. If desired, graph your insect findings. Compare your findings in your community with statistics from the rainforest.
4. After the observations are finished release the insects back into an appropriate environment.

Please note: Due to the complexities of translating and achieving a rhyming poem in Spanish, this optional lesson will be an English lesson only. Option: Have your Spanish-speaking students make up their own poems under each title.

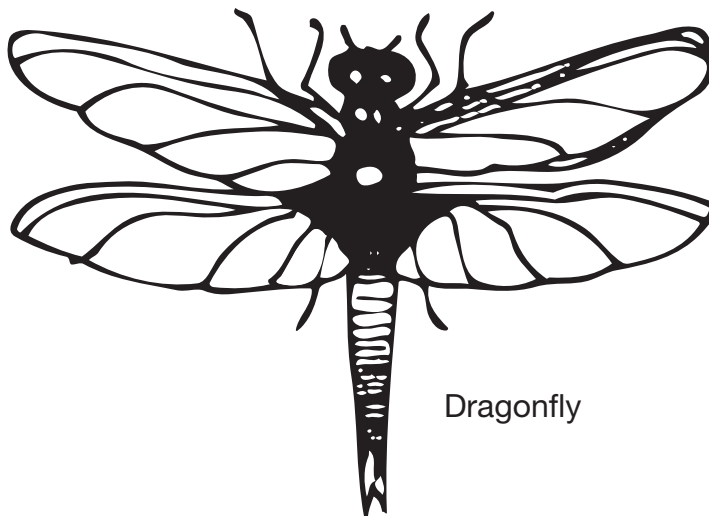
Lesson 7

Activity

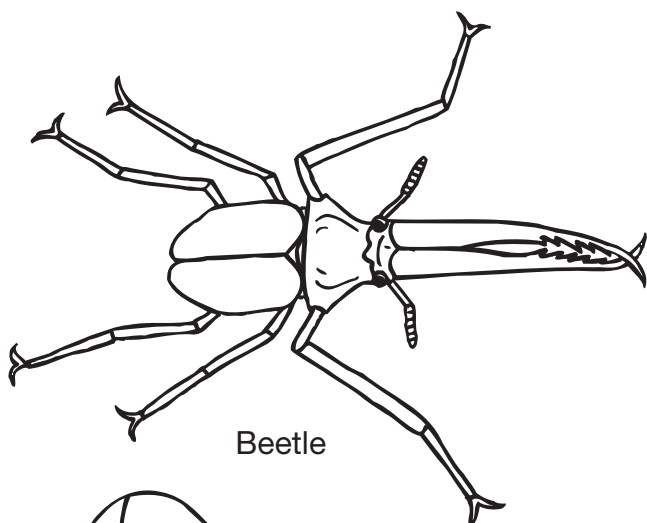
INSECTS OF THE RAINFOREST



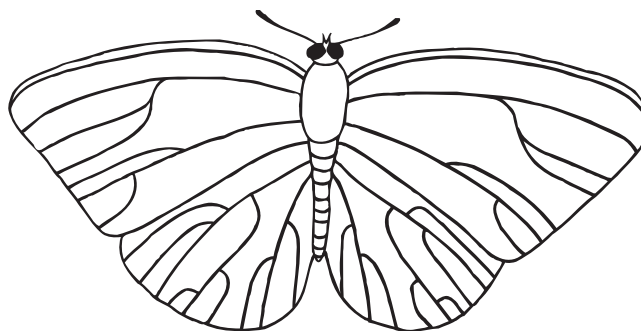
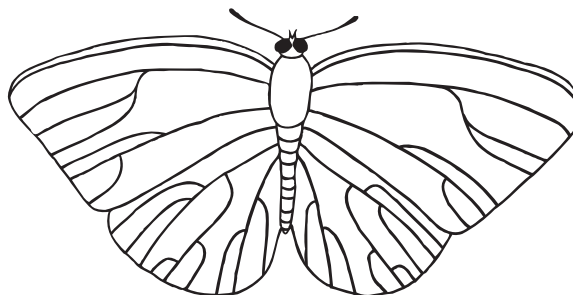
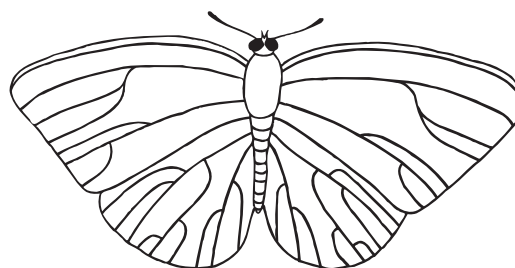
Cicadas



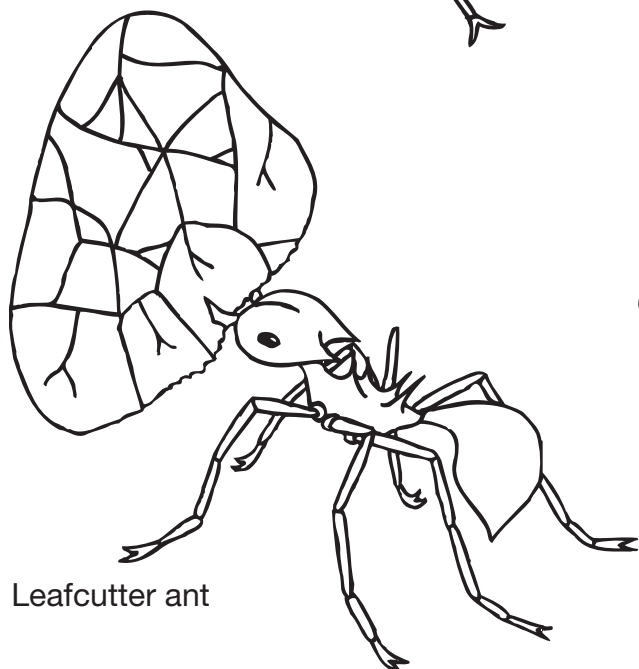
Dragonfly



Beetle



Butterflies



Leafcutter ant

Lesson 7
Option

INSECTS IN POETRY

Butterflies

Butterflies flutter here and there
Laying eggs almost everywhere
Eggs will hatch and then we'll see
Thousands of butterflies
All over the canopy trees

Leafcutter Ants

Cutting leaves every day
Always work never play
Hauling leaves down below
Where the fungus starts to grow

It's time to eat when
Leaves are mush
Then back to work
Among the brush

Cutting leaves every day
Always work never play

Beetles

Beetles come in large and small
Rainbow colors they have them all
Stripes, plaids, and polka dots
Reds and yellows mark the spot

Beetles live on bark, in trees
Beetles live among the leaves
Beetles live high and low
Some of them will even glow!

Dragonflies

Floating up and floating down
Touching plants upon the ground

Quiet wings that shine in the sun
Watch them move it is so much fun

By the river and in the trees
Watch them fly upon the breeze.

Floating up and floating down
Dragonflies on the ground

Cicadas

Flylike bodies, see-through wings
Only the males know how to sing

Cicadas sing loud and strong
Sending messages to the throngs

Sounds like drums and buzzing saws
Carries even through the walls

Lesson 8: Animals in Roberto's Rainforest

Concept

Many animals live in the rainforest. In a four square mile of rainforest there could be 125 species of mammals, 100 species of reptiles, and 60 species of amphibians. Only a fraction of the species have been identified by scientists. Most of the animals stay in specific layers of the rainforest because they have adapted to that layer, but some do move around to different layers. The animals make up a very complex food chain that keeps the rainforest balanced. Rainforest animals come in all shapes and sizes.

Vocabulary

1. River:

- The caiman alligator can be 15 feet long. In the night their eyes glow like red coals if a light shines on them.
- Piranhas are fish that have razor-sharp teeth. Piranhas feed by taking bites out of other fish and animals with their teeth.
- River otters live in the rainforest rivers and can be six feet long. This playful animal has beautiful fur.
- Freshwater dolphins are pink and gray. They are playful mammals that can leap high into the air.
- Manatees or sea cows eat floating plants of the river. They swim slowly and are friendly animals.

2. Forest floor:

- Anteaters eat small ants all the time. Velvety gray anteaters use long, powerful claws to root out insects and even longer tongues that are as sticky as tape to lap them up.
- Gorillas are big, hairy, and very strong. They live peacefully in family groups called troops. They eat leaves, stems, and fruits.
- Turtles, including the ornate wood turtle, make the forest floor and the river's edge their home. They slowly turn over dead leaves looking for insects to eat.
- Poison-arrow frogs live on the forest floor. Their skin color is very bright as a warning to other animals that they are poisonous.
- The tapir is a medium-sized animal that has a long snout which moves like an elephant's trunk. Tapirs stay close to the water's edge as they search for mosses and plants to eat.

3. Understory:

- Monkeys swing from branch to branch in small groups, eating fruits and leaves as they swing. Monkeys live in the understory and canopy layers in the rainforest. Muriqui, spider, and howler monkeys make quite a racket with their loud sounds.
- The coatimundi is related to the raccoon and has a striped

These animals are interesting to observe. Check your local zoo for species that are adaptable to classroom environments.

Think about sending out the Rainforest Invitation, page 105, to classes that will tour your classroom.

tail like a raccoon. The coatimundi can be found looking for food along tree branches or eating turtle eggs on the beach.

- The jaguar is an enormous cat that hunts animals on the forest floor, the understory, and the river. It can weigh well over 300 pounds. It is at the top of the rainforest food chain. It can kill and eat anything it finds, but nothing eats it.

4. **Canopy:**

- Snakes of all sizes and shapes live in the rainforest. Most of the snakes move in and out of the different layers looking for food. Their skin patterns usually match their surroundings so they can move in the rainforest without being seen. Pythons, emerald-tree boas, anacondas, fer-de-lances, and coral snakes are a few of the snakes living in the rainforest.
- The three-toed sloth is an animal that moves as slowly as a turtle. The sloth spends its entire life high in the trees, even giving birth in the trees. The sloth's slow movement helps it hide from enemies. Green moss grows on the fur of the sloth where moths lay their eggs.
- The kinkajou lives in the canopy and understory of the rainforest. It has large eyes and yellowish brown fur with a prehensile tail. The kinkajou hunts at night.
- The marmoset is a small mammal that likes to eat insects, including butterflies. It cannot use its tail as a hand.

5. **Emergent:**

- Most living creatures in the emergent layer are birds. They fly in and out of the canopy and emergent layers looking for fruit and other foods. Some small mammals wander into the emergent looking for food and end up being food for eagles and vultures.

Students remember concepts and vocabulary when the activity creates a product.

Materials

Activity: ANIMALS IN THE RAINFOREST

1. rainforest animal patterns, three to five per canoe group
2. heavy chipboard or cardboard onto which to transfer animal patterns
3. display copies of patterns
4. appropriate paints, per team
5. brushes and clean up supplies, per team

Option: ANIMALS IN POETRY (page 60)

1. animals scripts for rainforest tour, make desired copies
2. display copies of animal scripts if you plan a group presentation of the scripts

Enhancement: Rainforest Roundup

1. books and magazines with rainforest animal pictures, they will not be cut; provide three to six books per team

The canoeing teams become non-killing hunters in this project.

Procedure

1. Put students in canoe teams.
2. Explain concept and vocabulary.
3. Do chosen activity.
4. Closure questions: What small animals live in the rainforest? The river is filled with fish and other animals. Name three of them. What kinds of animals can live on the dark forest floor? Where do monkeys live? The coatimundi looks like another animal, what is it? What can be six feet long and likes to eat fruit, flowers, and leaves? What enormous cat lives in the rainforest? Name the reptile that slithers about in different areas of the rainforest. What is the area that a three-toed sloth never leaves? What does prehensile tail mean? Why do you think that in the emergent layer most creatures are birds?
5. Stamp passports when activity is finished.

Activity: ANIMALS IN THE RAINFOREST

After the animals have been painted and dried, pin them in the appropriate layers in the rainforest on the background you have provided for the rainforest. You can put the name of the animal next to it or even put a copy of the poem in the rainforest for students to see and read. The information in the concept and vocabulary sections can also be transferred to the rainforest walls.

Option: ANIMALS IN POETRY

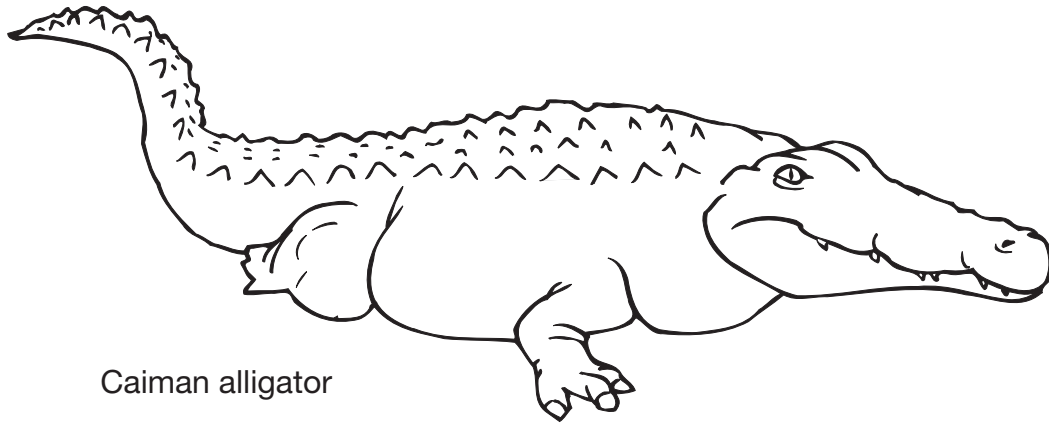
Have canoe teams memorize their chosen teams' poem. They can recite the poem when they conduct tour groups through the rainforest.

Enhancement: Rainforest Roundup

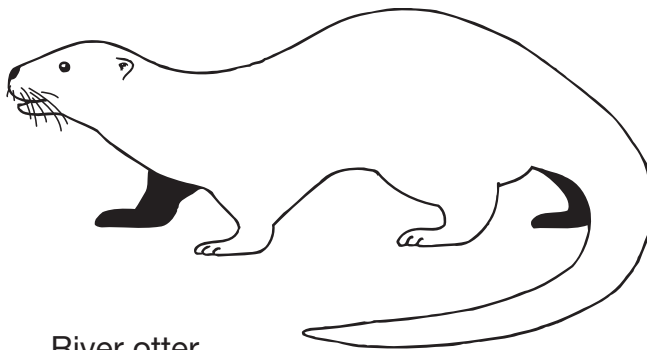
The canoe teams become non-killing hunters in this project. You, as travel agent, ask the canoe teams to keep their eyes open for rainforest animals as they canoe through the books and magazines. When a team finds a rainforest animal they must raise their hand and let you confirm that it is indeed a rainforest animal. Points can be awarded to teams for animals they find. To make the hunt harder, ask the teams to find only mammals in the rainforest, only large predators in the rainforest, only reptiles in the rainforest, only animals of the different layers, only amphibians in the rainforest, or only nocturnal animals in the rainforest.

Lesson 8
Activity

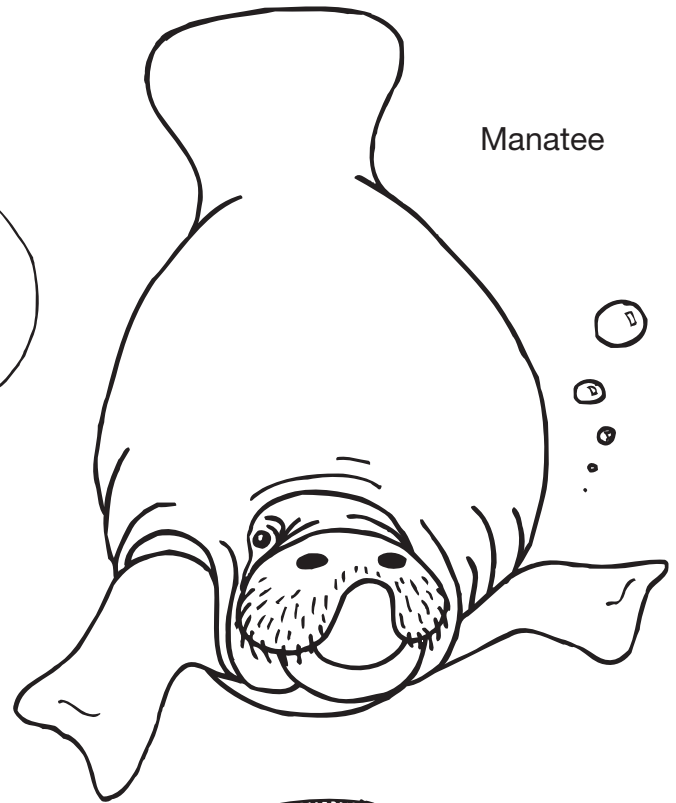
ANIMALS IN THE RAINFOREST – RIVER



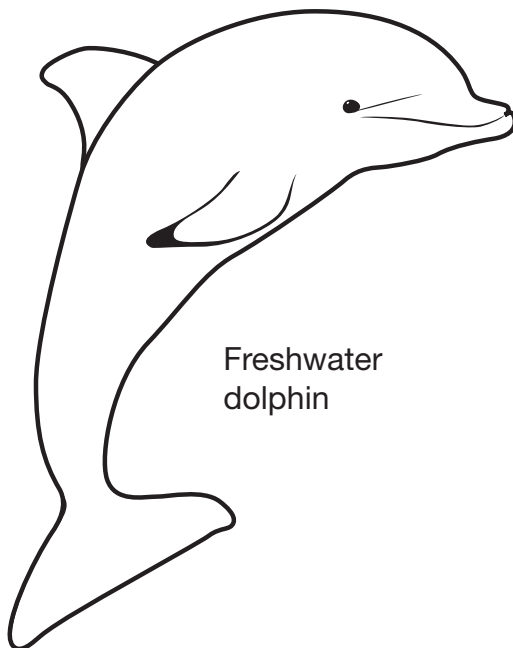
Caiman alligator



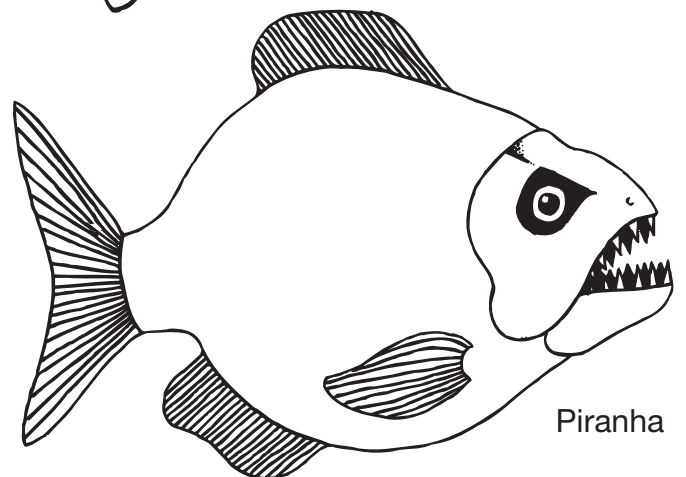
River otter



Manatee



Freshwater
dolphin



Piranha

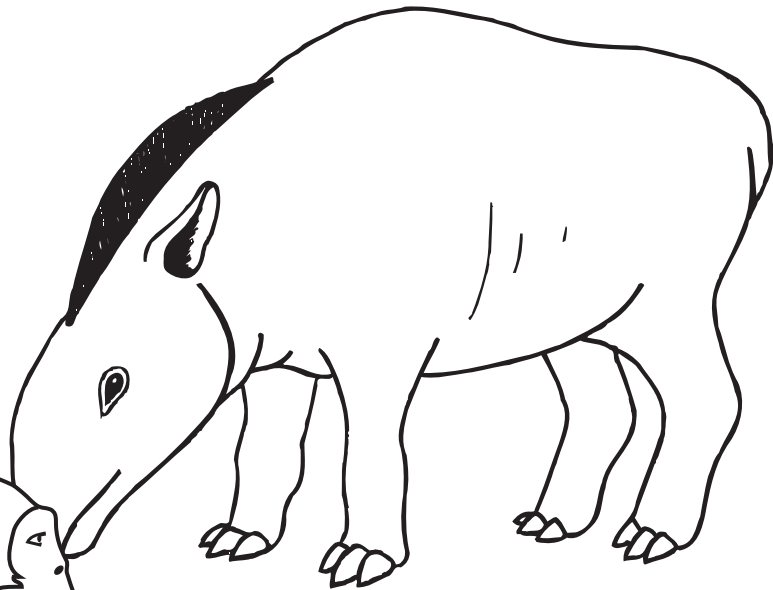
Lesson 8

Activity

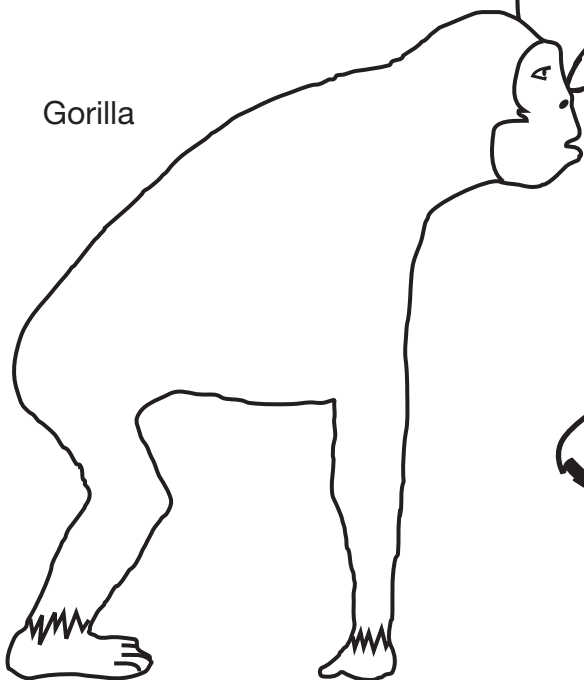
ANIMALS IN THE RAINFOREST—FOREST FLOOR



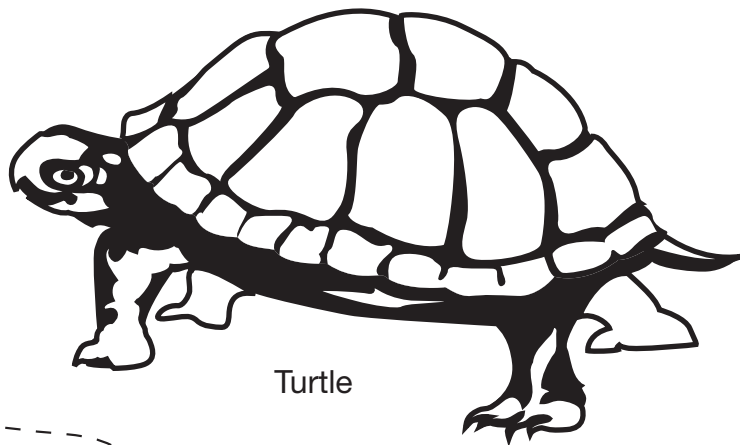
Frog



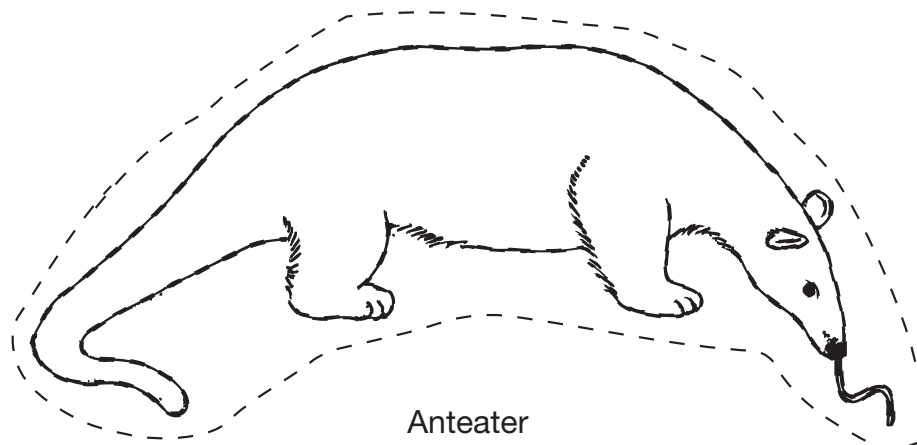
Tapir



Gorilla



Turtle

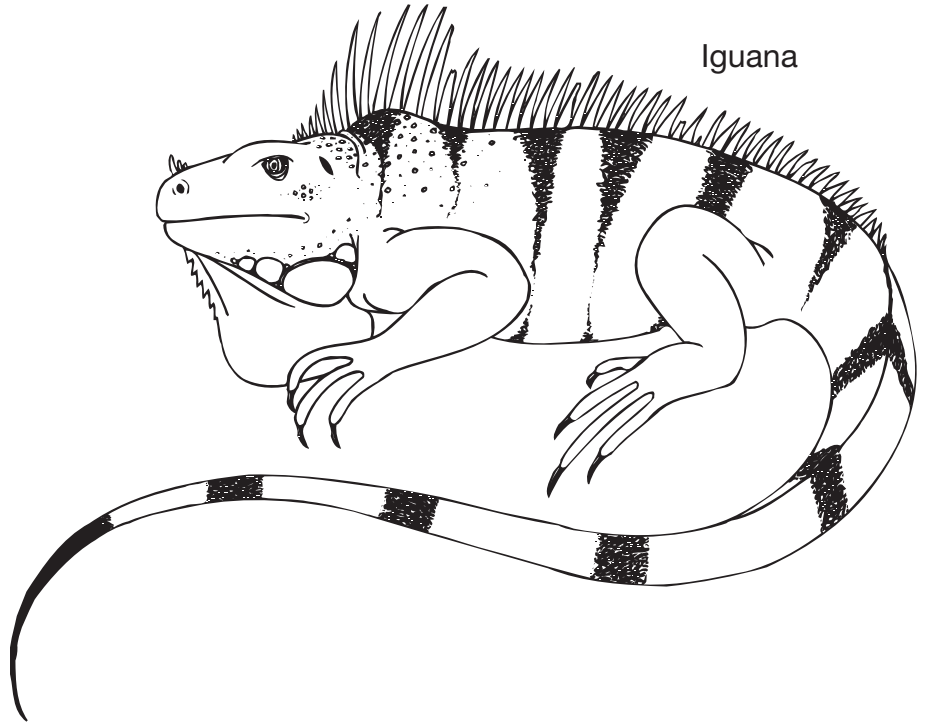


Anteater

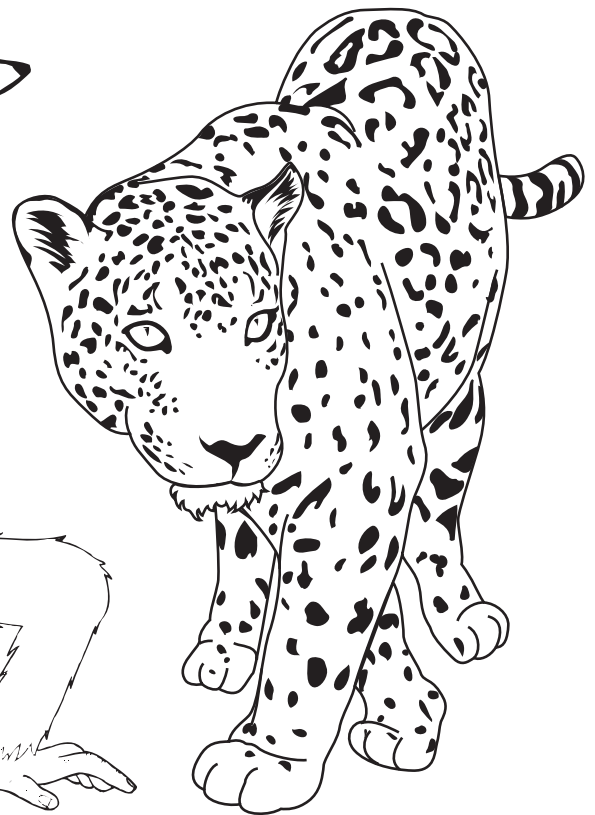
Lesson 8
Activity

ANIMALS IN THE RAINFOREST – UNDERSTORY

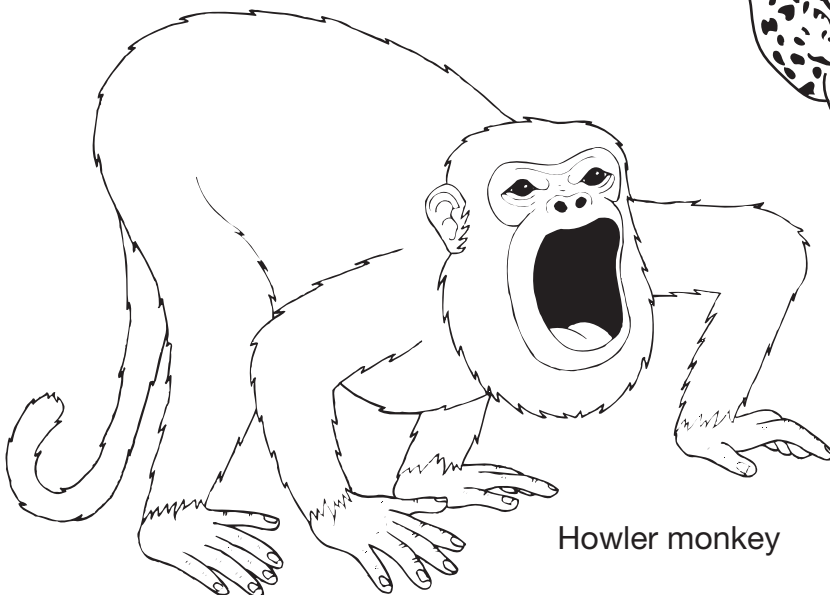
Iguana



Coatimundi



Howler monkey

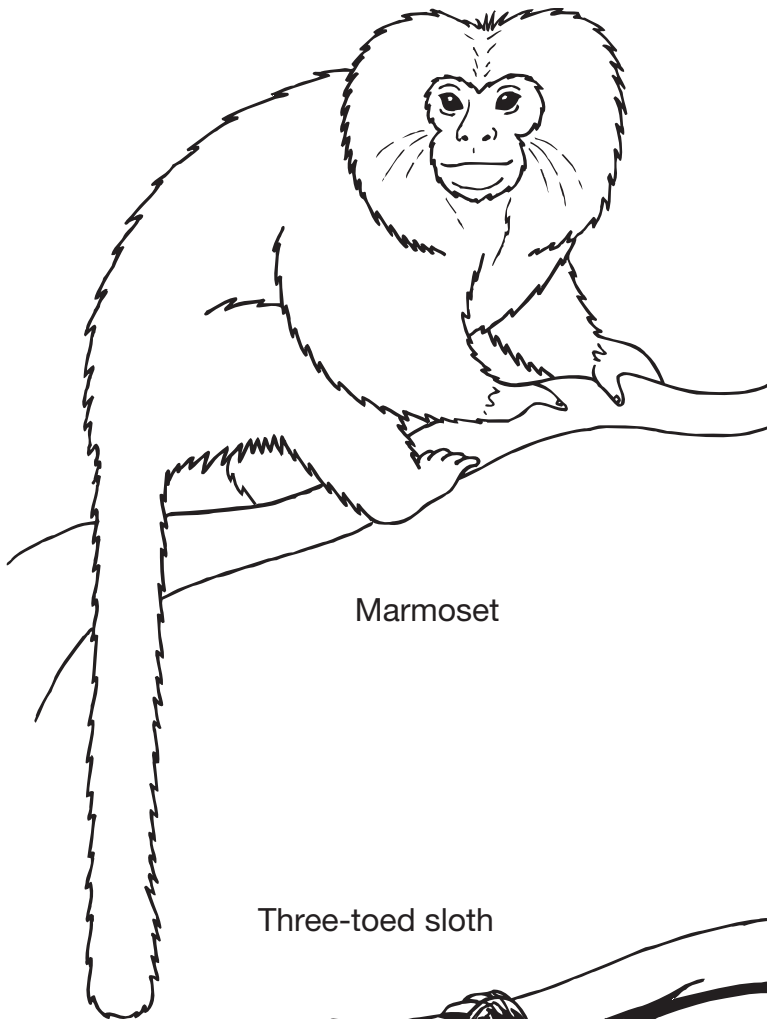


Jaguar

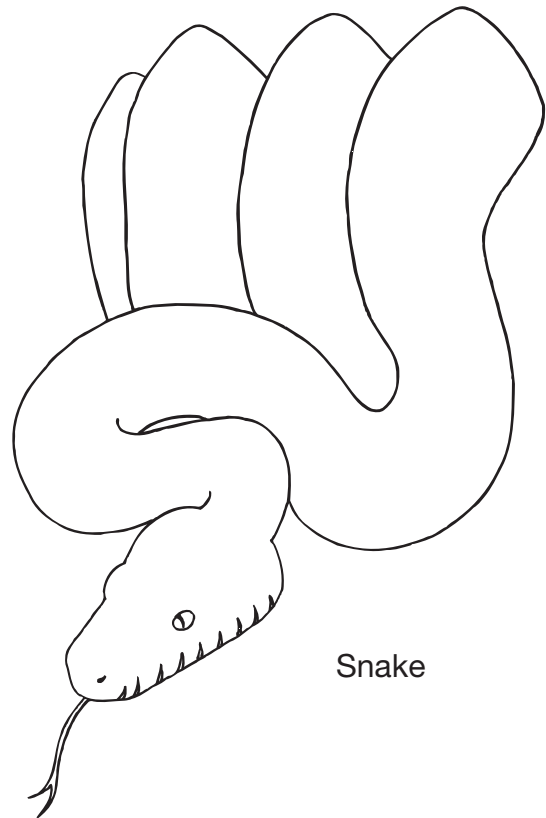
Lesson 8

Activity

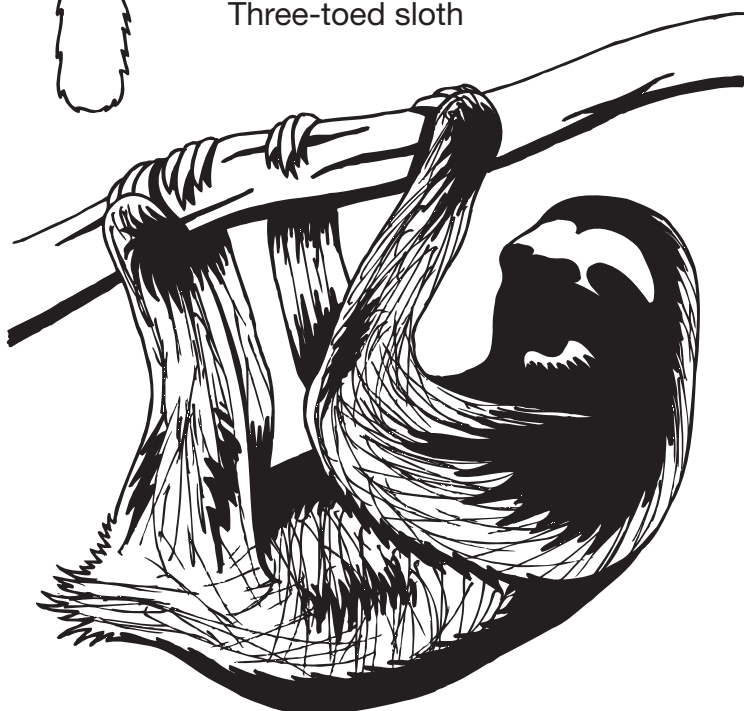
ANIMALS IN THE RAINFOREST – CANOPY LAYER



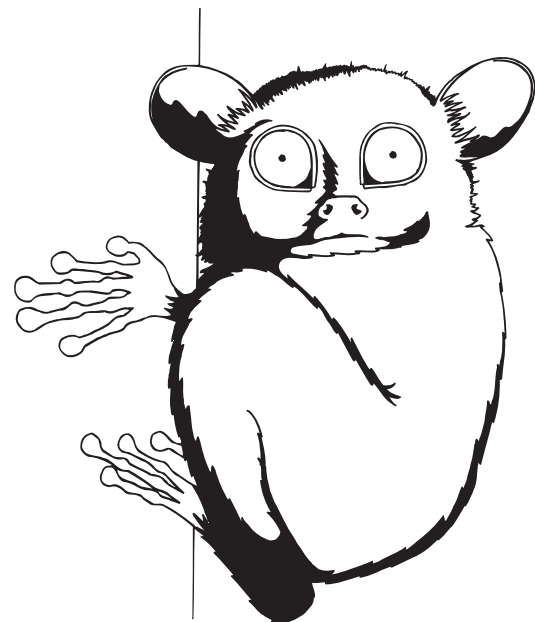
Marmoset



Snake



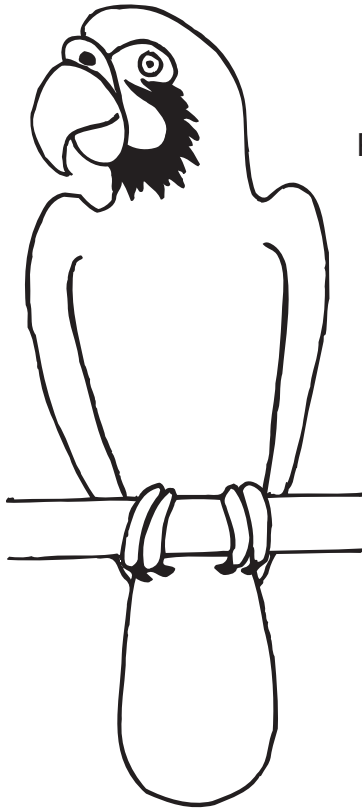
Three-toed sloth



Kinkajou

Lesson 8
Activity

ANIMALS IN THE RAINFOREST – EMERGENT LAYER

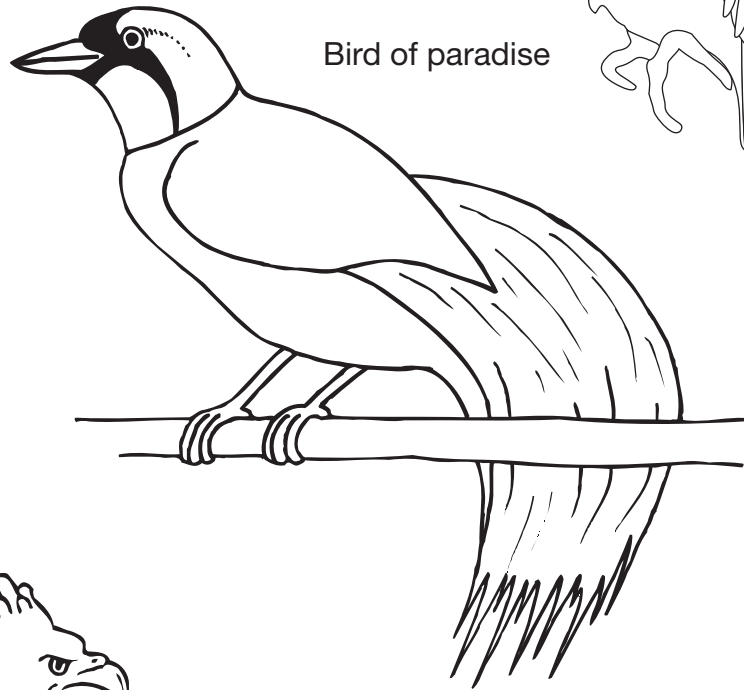


Parrot

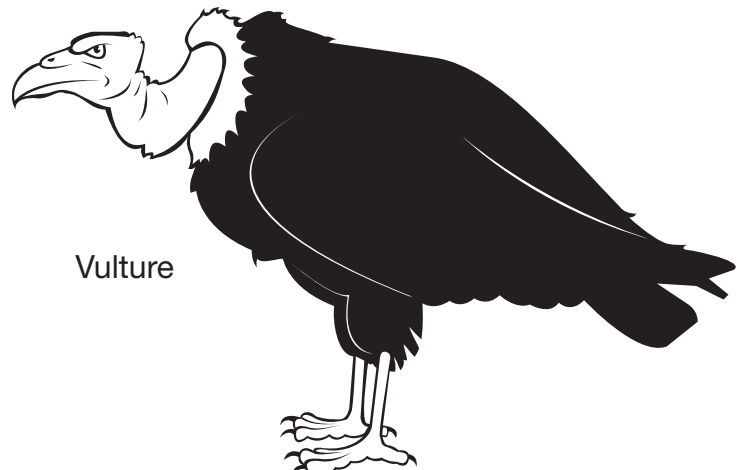
Macaw



Bird of paradise



Harpy eagle



Vulture

Lesson 8

Option

ANIMALS IN POETRY

River Animals

Living in the water deep
Where they eat and play and sleep
Caiman is so very long
Dolphins sing a happy song
Piranhas with razor teeth
Slow moving is the manatee
Otters play among the fish
To live in safety is their wish
Living in the water deep
Where they eat and play and sleep

Forest Floor Animals

Animals on the dark floor
Most get water from the shore
Anteaters eat ants all the time
While poison frogs hop and climb
Tapirs search for leafy plants
Wood turtles eat grubs and ants
Gorillas, gentle and bold,
Can live to 50 years old

Understory Glory

Vines and bushes everywhere
Monkeys swinging through the air
Coatimundi with striped tail
Eats on eggs, it never fails
Top of the food chain is jaguar
Hunts and kills to his desire
Iguanas green at six feet
Eat fruit and plants but no meat
Vines and bushes fill the air
Animals living everywhere

Canopy Critters

Snakes of all sizes slither around
Three-toed sloth never touch the
ground
Kinkajou and marmoset so small
Within the trees they enjoy it all
Birds and insects fill the air
Animals living everywhere

Emergent Creatures

Beautiful birds fly way up high
Reaching with wings to touch the sky
Insects and birds are only a few
Snakes and monkeys climb there too
Beautiful birds fly way up high
Reaching with wings to touch the sky

Lesson 9: People in Roberto's Rainforest

If you used parents or cross-age tutors for this lesson, teams could do different activities.

Concept

People have lived in the rainforest for thousands of years. To the natives, the rainforest is home and the only world they know. Rainforest people live in tribes. The tribes are small and live far apart. It takes a lot of rainforest to support a tribe of people so the tribes stay small and only hunt in their territory. They know which plants and animals are useful and how to take from the forest without harming it. The natives do not wear much clothing because it is hot and humid year round. They live like their ancestors did in pole-and-thatch houses that make up small villages. They use a stone ax for chopping, bow and arrow for hunting, and they travel on the river with dugout canoes.

Vocabulary

1. **Native:** A person born in a place rather than one who moves to a new place. The native men of the rainforest do most of the hunting and the women do the cooking and housework. The children do not go to school but are in training all of the time, learning about family survival. These are jobs they will have when they grow up in the rainforest.
2. **Tribe:** A group of people who live and work together for each other. The tribes of natives in the rainforest sometimes hunt together and sometimes get together for celebrations. Some tribes build a large house where more than one family lives.

Materials

Activity: PEOPLE IN ROBERTO'S RAINFOREST (page 89)

1. Rainforest people patterns, one or two copies per canoe team
2. heavy chipboard or cardboard onto which to transfer people patterns
3. display copies of patterns
4. appropriate tempera or fluorescent paints for insects, per team
5. brushes and clean up supplies, per team

Option: NATIVES IN POETRY (page 90)

1. native script for rainforest tour, make desired copies
2. display copies of people scripts if you plan a group presentation of the scripts

Enhancement: KEEP IN TOUCH (page 91)

1. KEEP IN TOUCH handout, one per student

Procedure

1. Put students in canoe teams.
2. Explain concept and vocabulary.
3. Do chosen activities.
4. After activities ask team closure questions: What tools do the natives in the rainforest use? What is a native person? Describe a day in the rainforest for native children.
5. Stamp passport when activity is finished.

Have your students share their projects.

Activity: PEOPLE IN ROBERTO'S RAINFOREST

After the people have been painted and dried, pin them on the background you have provided for the rainforest. You can put a copy of the poem about native people in the rainforest for students to see. The information in the concept and vocabulary sections can also be transferred to the rainforest walls.

Option: NATIVES IN POETRY

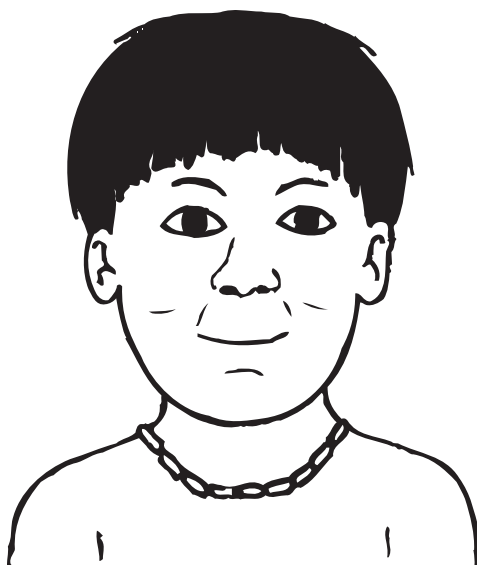
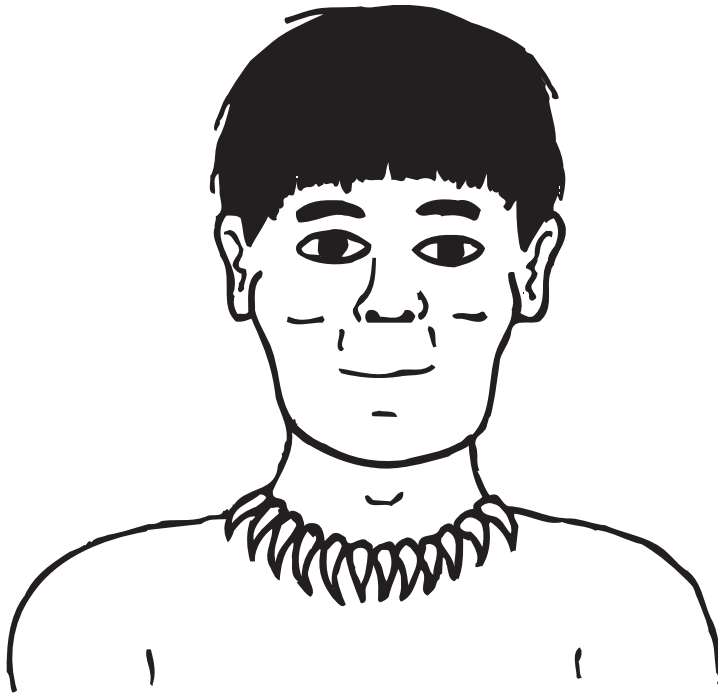
Have canoe teams memorize their teams' poem. They can recite the poem when they run tour groups through the rainforest.

Enhancement: KEEP IN TOUCH

Students have the opportunity to imagine and plan for a stay in the rainforest. Students in pairs look through a list of items that they may want to take to the rainforest. The pairs discuss why they should or why they should not take the item(s). This activity will make students aware of the differences between where they live and the life of a rainforest native.

Lesson 9
Activity

PEOPLE IN ROBERTO'S RAINFOREST



Lesson 9

Option

NATIVES IN POETRY

Rainforest People

Living in the forest it's plain to me
An easy life it would not be

Tribes of people living in the sun
Caring for all, sharing as one

Hunting and fishing for the men
Then every day they start over again

Women of the forest do very good
Tending to kids and cooking food

Through rain and wind and sun and heat
Very few clothes, nothing on their feet

With trees as toys, the river a pool
A native child never goes to school

Living in the forest it's plain to me
An easy life it would not be

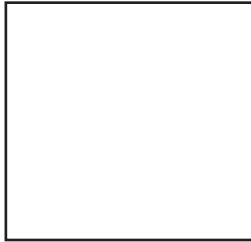
Lesson 9
Enhancement

KEEP IN TOUCH

Names _____

You have been chosen to live in the rainforest with a tribe of people for two years. Choose the things from the list that you will need to take with you. Tell why you should take the things you choose. Draw a picture in each box.

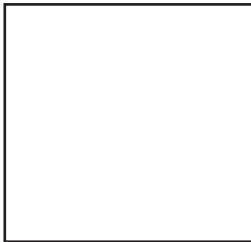
Math book _____



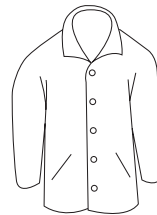
Dress-up shoes _____



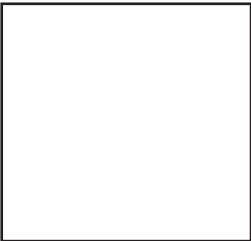
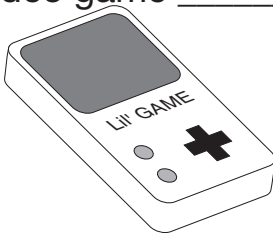
Umbrella _____



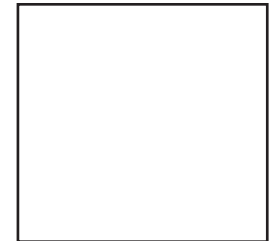
Winter coat _____



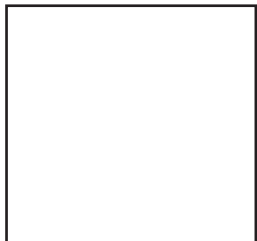
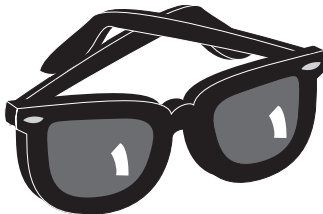
Video game _____



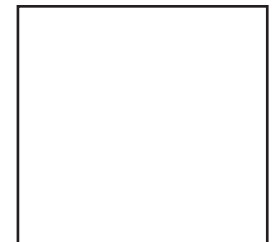
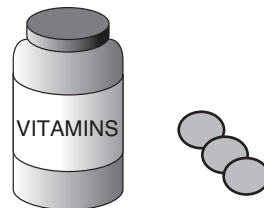
Pocket knife _____



Sunglasses _____



Vitamins _____



What else would you take and why?

Lesson 10: Conservation in Roberto's Rainforest

Concept

Rainforests give us so much: oxygen, water, animals, food, medicines, and shelter for natives to name a few. It is important that we protect them. There is no other place on earth as valuable as the rainforest. Many people are working hard to save the tropical rainforests. They hope to protect the people who live there, the animals, and plant life. One way to help is to create protected areas called reserves. This means loggers and farmers cannot cut down trees, and limited amounts of fruit, plants, and other natural products can be removed from the reserve. Once the rainforest is cut down, the ecosystem is broken down. Then food chain and plants cannot work together. As we work to protect and preserve the rainforest we promote all living things on earth.

Vocabulary

1. **Conservation:** Protecting something so it is not wasted or lost.
2. **Consumer:** A person who makes wise choices.

Materials

Activity: WRITE AND SAVE

1. NOTE CARD (page 68), one or two per team
2. WRITE AND SAVE (page 69), one per team
3. pencils

Option: Poster Power

1. large construction or poster paper, one per team
2. markers, crayons per team

Enhancement: RAINFOREST ROULETTE

1. RAINFOREST ROULETTE (pages 70–71), one set per team
2. glue, scissors

Procedure

1. Put students in canoe teams.
2. Explain concept and vocabulary.
3. Do chosen activity.
4. Ask closure questions: What can you do to protect the rainforests?
What is a reserve? Why is it important to save the rainforests?
5. Stamp passports after completion of activity.

Activity: WRITE AND SAVE

Discuss the importance of actively saving the rainforests of the world. Have students write postcards to some of the people and organizations as one way of expressing their opinion about saving the rainforest. A notecard is provided for your students to use for this writing task.

Option: Poster Power

Have canoe teams make Rainforest Posters advertising the Rainforest Tour that your class is going to give. Hang the posters around your campus or in classrooms that are invited. Your students can go into classrooms with the posters and invite them to the upcoming tour.

Enhancement: RAINFOREST ROULETTE

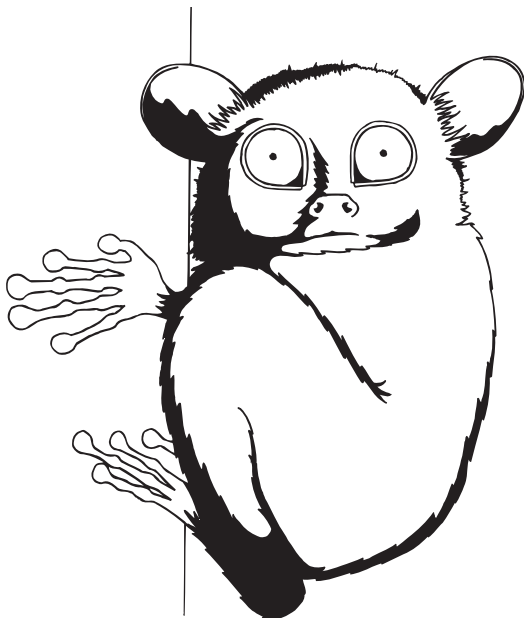
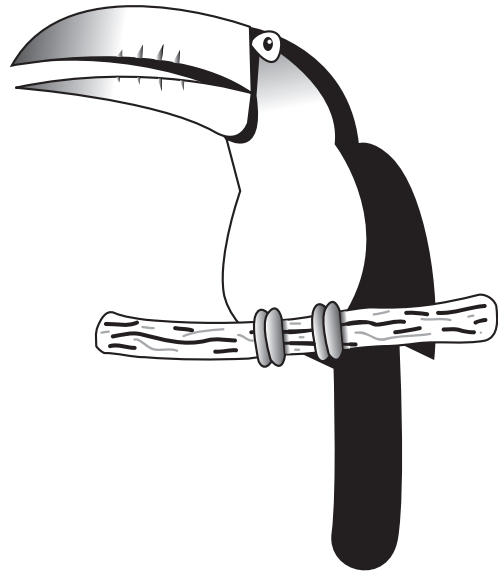
1. Rainforest Roulette is played by a canoe team or by two players.
2. The objective of the game is to match up the rainforest card that has a rainforest object on it with the card that has words that describe that object.
3. Glue the picture and word cards on construction paper.
4. After the cards dry, cut all of them apart. You may want to laminate the cards.
5. Shuffle and place the cards face down.
6. Each student takes a turn turning two cards over and trying to make a match.
7. Explain to your students that if they see an asterisk (*) next to the animal that tells them it is endangered.

If the concept of picture and word card match up is too difficult, just make two copies of the picture cards for students to match.

Lesson 10

Activity

NOTECARD



Lesson 10

Activity

WRITE AND SAVE

Write to your senators and representatives:

U.S. House of Representatives
Washington, DC 20510

U.S. Senate
Washington, DC 20515

Dams are being built on the rivers in the rainforests that divert the water and change the rainforest forever. Write to:

President of the World Bank
World Bank
1818 H Street NW
Washington, DC 20433

Make personal contact with people in tropical countries so students will have a better understanding of what life is like in these countries. If your class would like to write to kids that live in a tropical country, you can send your group letters to:

National Wildlife Federation
Department NB
School Programs Division
8925 Leesburg Pike
Vienna, VA 22184-0001

To find out more about rainforests and how you can help save them write:

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

National Wildlife Federation
1400 16th St., NW
Washington, DC 20035-2266

Smithsonian Tropical Research Institute
APO
Miami, FL 34002-0011

Adopt a Rainforest
Nature Conservancy
1815 North Lynn St.
Arlington, VA 22209

Save the Sea Turtle & Adopt an Iguana
Rainforest Alliance
270 Lafayette St., Suite 512
New York, NY 10012

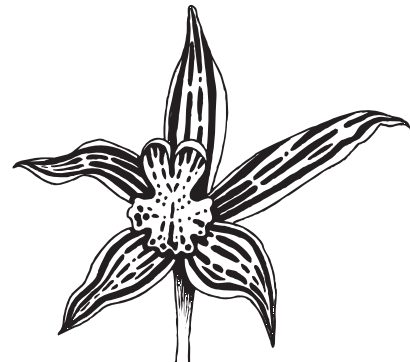
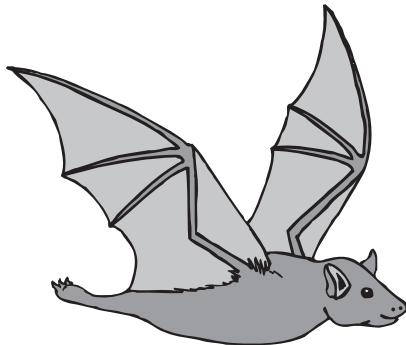
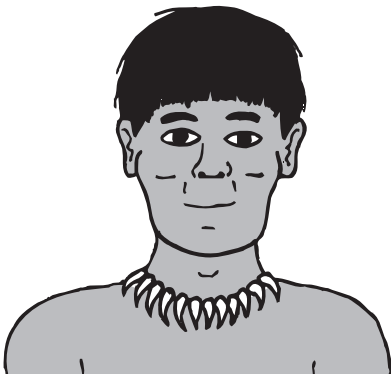
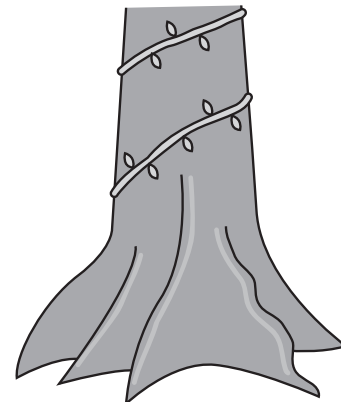
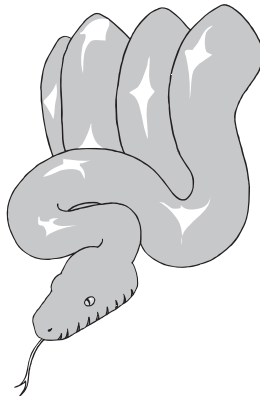
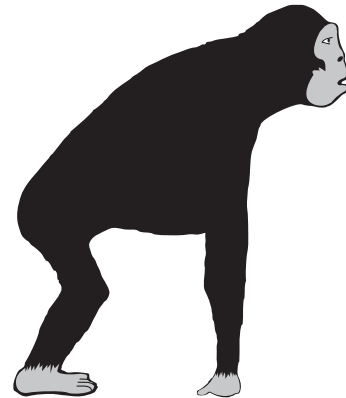
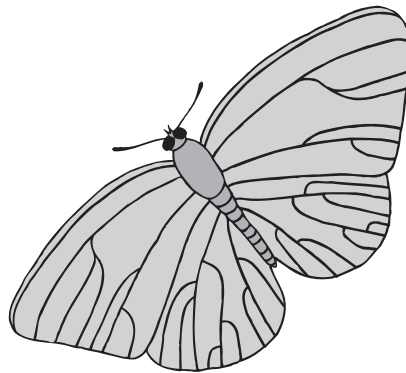
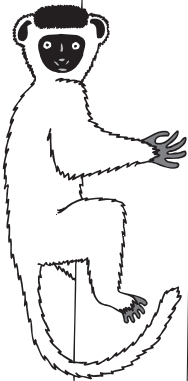
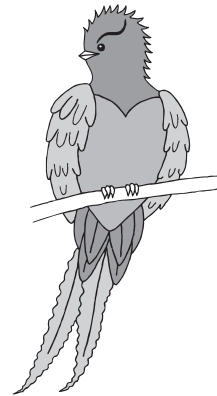
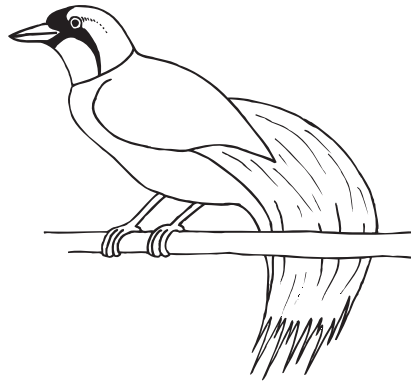
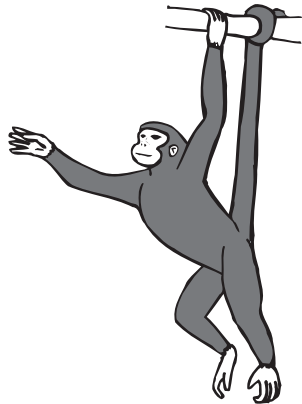
The Chico Mendes Fund sets aside reserves of large areas in the rainforest for harvesting products that grow naturally in the rainforest:

The Chico Mendes Fund
National Wildlife Federation
International Division
1400 16th St., NW
Washington, DC 20036-2266

The Periwinkle Project distributes posters to doctors' offices, pharmacies, and hospitals to raise money for medical research with tropical plants:

The Periwinkle Project
Rainforest Alliance
270 Lafayette St., Suite 512
New York, NY 10012

Enhancement **RAINFOREST ROULETTE**



Lesson 10
Enhancement

RAINFOREST ROULETTE

<p>Wooly Spider Monkey*</p> <p>The wooly spider monkey lives in the trees in the Amazon rainforest.</p>	<p>Butterfly</p> <p>There are more than 10,000 species of butterflies in the rainforests of Central America and South America.</p>	<p>Kapok Tree</p> <p>This tree can be found in the American and African rainforests. It can grow to be 200 feet tall.</p>
<p>Bird of Paradise</p> <p>This beautiful bird lives in New Guinea.</p>	<p>Mountain Gorilla*</p> <p>The mountain gorilla is very shy and stays on the forest floor and understory of rainforests. They can eat 40 pounds of leaves, stems, and fruit each day.</p>	<p>Native Person</p> <p>Natives live nicely in the rainforests. They depend on the rainforest for all of their needs. Native people have lived in the rainforests for 12,500 years.</p>
<p>Resplendent Quetzal*</p> <p>This bird lives in Central America. It has long, lovely tail feathers.</p>	<p>Tiger</p> <p>The tiger lives in the jungles/rainforests in Asia. It is tawny with black stripes.</p>	<p>Jamaican Bat</p> <p>This bat eats fruit. Bats are important to rainforests because they help spread pollen and seeds from fruit.</p>
<p>Lemur*</p> <p>This small, wooly animal lives in the trees of many rainforests. It has large eyes and a prehensile tail.</p>	<p>Emerald Tree Boa</p> <p>This snake lives in the South American rainforest. He looks like a slender green vine twisted around a tree.</p>	<p>Orchid</p> <p>An orchid is a flower that grows in the rainforest. They are not rooted in soil but grow on tree branches and trunks.</p>

Lesson 11: Touring Roberto's Rainforest

The tour is a very exciting day! The preparations for this day add anticipation and involvement. They are well worth the effort.

Concept

Canoeing in the rainforest can be very exciting! Since rainforests cannot be seen easily by most of us, your class will bring the rainforest to your school. By inviting people to view the rainforest you will be encouraging young people to appreciate the unique ecosystems within the rainforest.

Vocabulary

1. invitation
2. tour

Materials

Activity: INVITATION

1. INVITATION (page 75), one for each classroom invited

Option 1: Rainforests Around the World

1. map (page 76), per team

Option 2: Open House

1. the rainforest that your class has been building with each lesson
2. ROBERTO'S RAINFOREST TOUR GUIDE badges (page 74)
3. pointers for guides to point to things in the rainforest
4. appropriate rainforest attire for your guides
5. background rainforest music playing during the tours
6. two-three bottle misters for simulating a humid, rainy environment
7. possibly a flashlight for highlighting things in the rainforest
8. poetry scripts (options from Lessons 5–10) memorized for the rainforest tour
9. black light if fluorescent paint was used

The black light is most effective in total darkness.

Procedure

1. Select information from what your class built to share with the visiting classes. The poetry selections can be used to express information during the tours.
2. Divide your canoe teams into touring squads and have them practice before classes arrive. For instance, if a kindergarten class is touring, give students a simple A tour; a second-grade class, a B tour; a fourth-grade class, a more advanced C tour; etc.
3. Keep the tour to 15–25 minutes, according to age factors and attention span.
4. If possible, have seven to nine students tour at a time, since this ratio is easily managed by your tour guides.

5. Let teachers know in advance that you will divide the classes to accommodate optimum learning in small groups and all their students will not be going at the same time.
6. Stamp passports after completion of activity.

Children talk about the open house for weeks to come.

Activity: Invitation

1. Send an invitation to classrooms you want to invite to tour the rainforest. You may have already done so earlier in the simulation.

Option 1: Rainforests Around the world

1. Have your students color the shaded areas green to highlight the rainforests in the world today.
2. Display a map where touring students can see it when they visit the rainforest.
3. A tour guide can give some information about rainforests from concepts and vocabularies throughout this unit or from other research.

Option 2: Open House

1. The rainforest tour would make a wonderful open house for family members. Watch for special weeks throughout the year that may fit with a rainforest theme and present the rainforest at that time.
2. If fluorescent paints and a black light are used in the rainforest, be sure that you can darken the room.

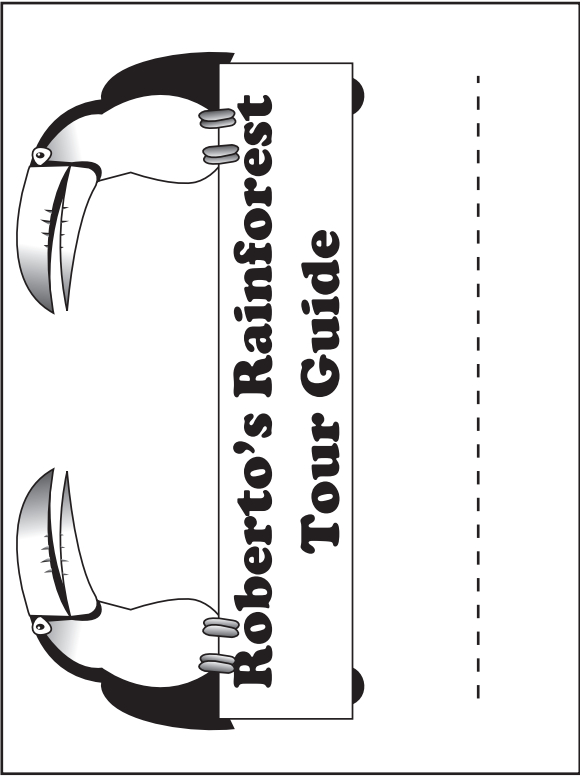
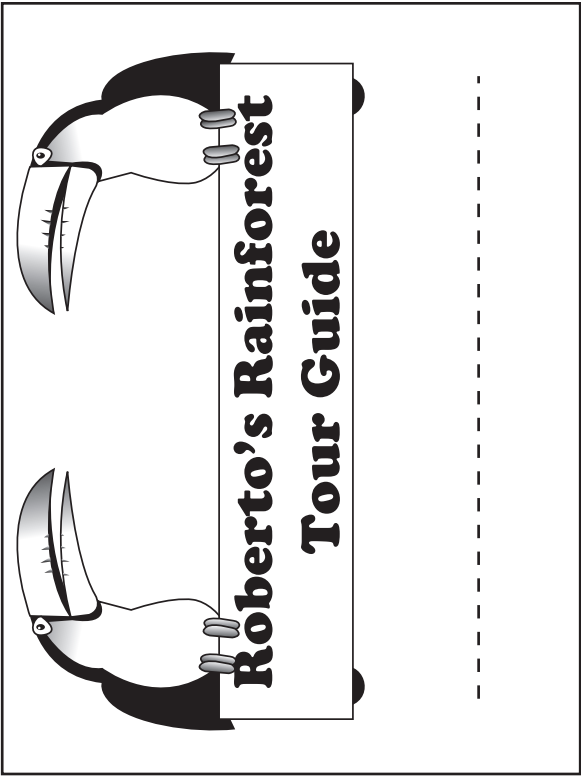
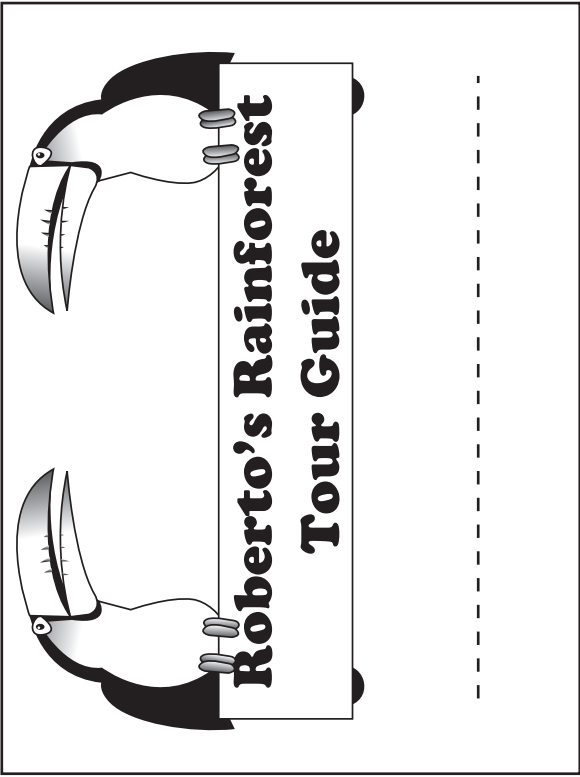
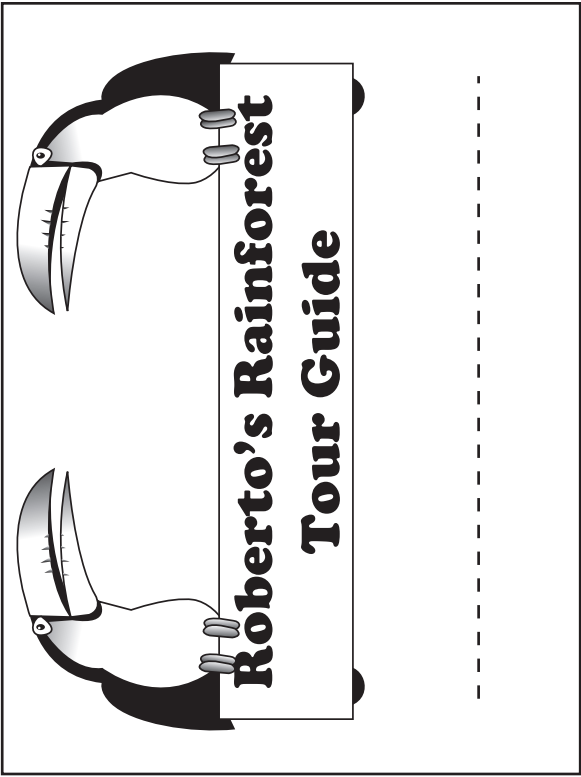
Enhancement: Tribal Role-Playing

1. Turn your students into a native tribe and simulate living in the rainforest.
2. With the rainforest all around, simulate gathering and hunting, tribal celebrations, household chores, skills necessary to survive in the rainforest.

3. Out of a hat draw different roles that students can portray to simulate a native tribe living in the rainforest.



TOUR GUIDE BADGE



Lesson 11
Activity

INVITATION

INVITATION

You are invited to tour Roberto's Rainforest!

When _____

Where _____

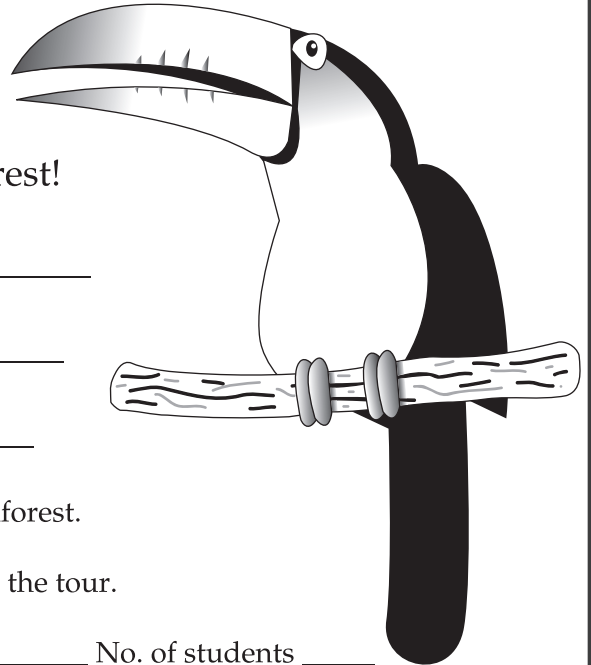
Who _____

___ Yes, my class will be able to tour Roberto's Rainforest.

___ Unfortunately my class will not be able to make the tour.

Room _____ Teacher _____ No. of students _____

For optimum learning, we would like to divide your class into groups of 7-8 and have them tour one group right after the other.



INVITATION

You are invited to tour Roberto's Rainforest!

When _____

Where _____

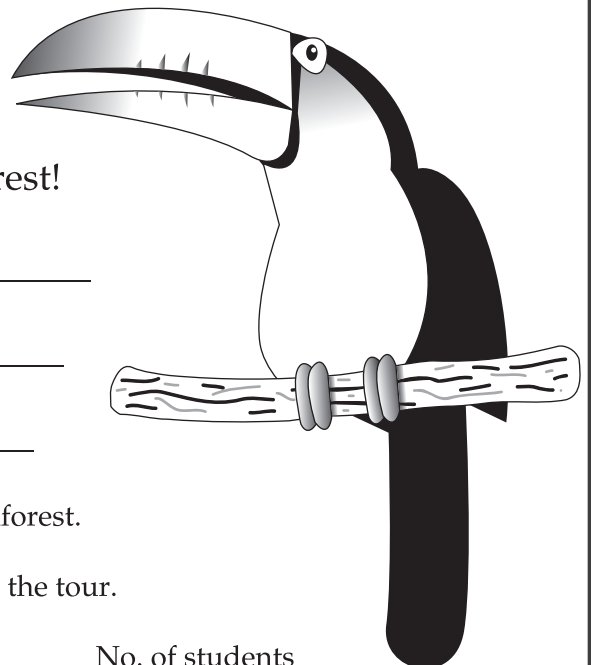
Who _____

___ Yes, my class will be able to tour Roberto's Rainforest.

___ Unfortunately my class will not be able to make the tour.

Room _____ Teacher _____ No. of students _____

For optimum learning, we would like to divide your class into groups of 7-8 and have them tour one group right after the other.



Lesson 11

Option 1

WORLD RAINFORESTS



Lesson 12: Roberto's Quiz

Concept

The final quiz is meant to review 10 basic concepts in the unit. It is designed so all students can successfully participate with minimal academic constraints. It is not meant to be a high-pressure testing activity. The creative questions for enhancement incorporate higher-order thinking skills and can be used in an oral discussion time.

Materials

Activity: ROBERTO'S QUIZ

1. ROBERTO'S QUIZ handout, one per student, page 78

Enhancement: Creative Questioning

1. Creative questioning list (pages 79–82), one copy for teacher

Procedure

The following ideas for administering the quiz are suggested ideas. Feel free to alter them to fit your class situation.

1. Have students take the quiz in canoeing teams. Have a capable reader in each group read the statements to the team, or you read the quiz to the class.
2. Have students write T (true) or F (false) in the appropriate space. If the statement is false, have students fix the statement so that it is true.
3. Have students illustrate each true statement on the back of the quiz sheet.
4. Correct the quiz. These are the answers to ROBERTO'S QUIZ: 1. T, 2. T, 3. T, 4. F, 5. T, 6. F, 7. T, 8. F, 9. T, 10. T, 11. T.

Student teams may make up questions to ask each other.

Enhancement: Creative Questioning

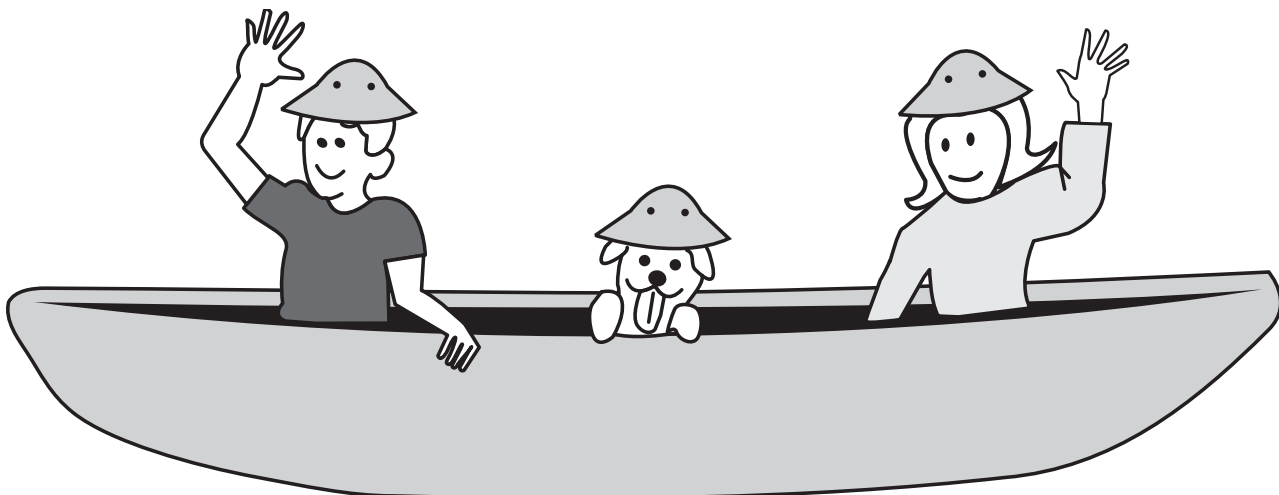
1. Have students work in canoeing teams as they answer the questions about Roberto's Rainforest. Their answers can count as bonus points on their canoe on the bulletin board.

ROBERTO'S QUIZ

Name _____

Mark each sentence T (true) or F (false).

- ___ 1. A post card tells someone what they have been doing on a trip.
- ___ 2. People use a passport when they travel from one country to another.
- ___ 3. A map is a drawing of a part of the earth.
- ___ 4. There are few animals in Roberto's Rainforest.
- ___ 5. Many different plants live in Roberto's Rainforest.
- ___ 6. Only three kinds of fruits can be found in the rainforest.
- ___ 7. Beautiful feathered birds live their whole lives in the rainforest.
- ___ 8. Insects only live on the forest floor.
- ___ 9. Rainforest animals come in all shapes and sizes.
- ___ 10. People who live in the rainforest can be called natives.
- ___ 11. It is our job to keep the rainforest safe and healthy.



Questioning your students with higher-order thinking skills ...

CREATIVE QUESTIONING

Enhancement

The language presented in the questions may be refined or adjusted to meet the needs of your class. Please be encouraged to develop your own questions. Advanced students should be encouraged to develop questions using the higher-order thinking skills.

Lesson 1: Canoeing Teams

- How will we get to the rainforest?
- What are we going to do in the rainforest?
- What kinds of things do you do in your canoeing teams?
- Why are we going to the rainforest?
- Explain the purpose of our canoeing teams.
- Is it possible to get to the middle of a rainforest in a car?
- How would you/your team get out of the rainforest if someone got hurt on the canoe trip?
- Was it easier to work on a canoeing team or work by yourself?
- Suppose you were the leader of your canoeing team. How would you get your team to the middle of the rainforest?
- Describe the feeling of canoeing through the middle of a rainforest.
- Judge how your team would feel if you found out that your tour guide was lost.

Lesson 2: Post Card

- What is a post card?
- Tell why you send a post card to someone when you are on a trip.
- If you went on a real trip would you send post cards?
- If you/teammates designed a post card for the rainforest what would it say and what would it look like?
- Describe what you/teammates would write on the post card from the rainforest.
- Describe how your parents would feel if they got a post card from you from a real rainforest.

Lesson 3: Passport

- What is a passport?
- Why do you carry a passport when traveling from country to country?
- What would you do if you lost your passport in a foreign country?
- Why did we use passports throughout Roberto's Rainforest?
- Do you think a passport is important when traveling to other countries? Why/why not?
- Predict what might happen to a person who lost their passport in a foreign country.
- Develop a different passport for traveling to different countries.
- What would your feelings be like if you found yourself in another country with someone else's passport?

Questioning your students with higher-order thinking skills ...

Lesson 4: Roberto's Rainforest Map

- List some of the layers in the rainforest.
- What kinds of things are found in the river of a rainforest?
- Describe the forest floor of the rainforest.
- Tell what the understory in the rainforest looks like.
- Why is the canopy an important layer in the rainforest?
- How is the emergent layer different from the forest floor of a rainforest?
- How would you find your way in the rainforest if you lost your map?
- What would you add to Roberto's Rainforest to make it more real?
- Compare some of the things on the rainforest map that would be different on a city map.
- Imagine you have to map a new uncharted part of the rainforest. How would you do the job?
- Describe what might happen if you discovered the tour guide took the wrong map to the rainforest.
- Do you suppose you could travel in a rainforest without a map?

Lesson 5: Plants in Roberto's Rainforest

- Name some plants in Roberto's Rainforest.
- Tell about some plants in the rainforest.
- What do plants need to survive in the rainforest?
- Describe some of the plants that you might see in the rainforest.
- Give some reasons why rainforest plants are so important.
- Explain how we use rainforest plants in our everyday life.
- Compare the plants in the rainforest and the plants around your community.
- Suppose the rainfall changed a lot in the rainforest, would the change make a difference to the plants?
- Predict what would happen if you tried to move all the plants from the rainforest to a high mountain.
- How are rainforest plants saving people's lives?
- Judge whether you could discover new plants in the rainforest.

Lesson 6: Birds in Roberto's Rainforest

- Name some birds that live in the rainforest.
- Tell about some birds that live in the rainforest.
- What do birds in the rainforest eat?
- Explain how a harpy eagle catches its prey.
- Where do birds build their homes in the rainforest?
- Why do some birds hunt at night?
- Give some reasons why a bird would want to live in a rainforest.
- Compare a toucan and a hummingbird.
- Tell how the seeds of plants get spread to make new plants.
- Judge whether you should keep rainforest birds as pets.

Questioning your students with higher-order thinking skills ...

Lesson 7: Insects in Roberto's Rainforest

- List some insects that live in the rainforest.
- Where do insects live in the rainforest?
- Compare the number of insects in the rainforest to the number of insects in your community.
- Tell why insects are so important to the rainforest.
- Would butterflies and dragonflies live high in the emergent layer of the rainforest?
- If you shook a branch of a rainforest tree, what kinds of insects would you see?
- If you catch insects to study, what should you do with them after the study is over?
- Compare an insect that lives in your house and an insect that lives in the rainforest.
- Imagine you walked into a nest of red ants, what would you do?
- Describe the different colors and shapes of insects in the rainforest.

Lesson 8: Animals in Roberto's Rainforest

- Name some animals that live in the rainforest.
- Tell about animals that live in the rainforest river.
- List some reptiles that live in the rainforest.
- Describe some animals that live and hunt in different layers of the rainforest.
- Do you think rainforest animals could adjust to very cold weather?
- Which layer of the rainforest has the most animals and which layer has the least animals?
- What kind of relationships do animals in the rainforest have with each other?
- Compare the rainforest's three-toed sloth to the jaguar.
- Explain what kind of animals could be found in a four-square mile of rainforest.
- If you could bring a rainforest animal to your house, which one would you choose?

Lesson 9: People in Roberto's Rainforest

- Have people lived in the rainforest for a long or short period of time?
- Tell how rainforest tribes work together to survive.
- Describe how native people in the rainforest get their food.
- Explain a day in the life of a native rainforest man.
- Compare a rainforest woman's daily jobs to a rainforest man's.
- Why do rainforest tribes live far apart?
- What kind of shelter do rainforest natives live in?
- Suppose you were to live in the rainforest, how would your life be different from where you live now?
- Describe what a rainforest native child would do all day.
- Imagine having to leave the rainforest after living there most of your life. How would your life change in a big city?

Questioning your students with higher-order thinking skills ...

Lesson 10: Conservation in Roberto's Rainforest

- Why must we protect the rainforest?
- Name some things that we use from the rainforest.
- Tell about a reserve in the rainforest.
- What happens to the rainforest once the trees are cut down?
- How can we help protect the rainforest?
- Describe what you can do to help protect the rainforest.
- Suppose you were in charge of saving the rainforests, what would you do?
- How can writing to people in the government help save the rainforest?
- Name some ways you can let other people know that it is important to protect the rainforest.
- If you were in charge of a huge company that needed lots of trees where would you get them? How would you protect those trees so there were still lots of trees left growing?
- How can your class as a group help preserve the rainforest?
- Give some reasons why we should protect the rainforest.

Lesson 11: Touring Roberto's Rainforest

- Why is it important to have people understand about the rainforest?
- How can you help someone learn about the rainforest's unique ecosystem?
- What do you think are the most important things to remember about the rainforest?
- How should you dress when touring the rainforest?
- Compare the clothing you'd wear in the rainforest to the clothing you'd wear on a high mountain.
- Tell what could happen if you were to leave your tour guide in the rainforest.
- Describe what it might be like to have your whole class become a tribe in the rainforest.
- How would you organize a real trip to the rainforest?
- Describe six things that you will share about the rainforest.
- As guide, imagine that your tour group does not stay with you. What are you going to do?
- Invent your own tour of the rainforest. How will it be different? How will it be the same?

EVALUATION

The author and Interact have enjoyed designing ROBERTO'S RAINFOREST for you and your students. Your comments about your experiences with this simulation would be appreciated.

1. How appropriate were the materials in ROBERTO'S RAINFOREST for your students? (Briefly describe your students' age/abilities.)
2. What did your students most enjoy about ROBERTO'S RAINFOREST?
3. Were any activities difficult for your students? If so, what might we do at Interact to make them easier for your students to use?
4. Were the teacher directions clear? If not, please recommend changes.
5. What other science-related materials or social studies units would you recommend that Interact create for primary students?

Send this sheet and anything else from ROBERTO'S RAINFOREST you would like to share with us to

Interact

Attn: Editorial
10200 Jefferson Boulevard
P.O. Box 802
Culver City, CA 90232-0802

Thank You

Teacher Feedback Form

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or fax it to us at **(800) 944-5432**

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We enjoy receiving photos or videos of our units in action!
Please use the release form on the following page.

Your Name: _____

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Comments: _____

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Interact

10200 Jefferson Blvd.
Culver City, CA 90232-0802
310-839-2436