Rain Forest Theme Day
Traveling Outreach Program
Pre- and Post-Visit Activities
Grades 3-4

NATIONAL AQUARIUM
Education Department
501 East Pratt Street
Baltimore, MD 21202

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The National Aquarium is a nonprofit organization whose mission is to inspire conservation of the world’s aquatic treasures.
Rain Forest Theme Day
A 60-minute auditorium program and 20-minute lab sessions for Grades K-6

A school-wide package is a great way to give classes in multiple grade levels (K-6) the opportunity to benefit from a traveling outreach program. Each package includes:

- Two auditorium presentations
- Ten interactive discovery sessions that allow students to explore the theme in depth and to investigate animals introduced in the auditorium presentation. Each 20-minute session is limited to one class (30 students maximum) to allow for optimal learning. Parent volunteers are required to assist with interactive discovery sessions. See Parent Volunteer Instructions on page 4 for more information.

OUTREACH PROGRAM DESCRIPTION
Auditorium Presentation: Investigate plant and animal interactions and adaptations necessary for survival in the South American Rain Forest as students utilize props to create a rain forest. Discover the importance of this unique habitat, threats to its survival and how to influence its future.

Discovery Labs: Students explore the rain forest by examining live animals, rainforest products, artifacts from indigenous people and more.

PLANNING FOR THE OUTREACH PROGRAM
This lesson includes pre- and post-program activities that will supplement the auditorium program and discovery lab sessions. These activities can be incorporated into units about animal adaptations, relationships and diversity; as well as food chain studies. Other complementary units include social studies units addressing the importance of these animals to different world cultures or map studies examining the distributions of species and location of rain forests around the globe. This lesson should be covered in three days including the outreach program at your school.

AAAS Benchmarks

5D/E2-3-5: Insects and various other organisms depend on dead plant material for food.

5D/E4-3-5: Changes in an organism’s habitat are sometimes beneficial to it and sometimes harmful.

MD Voluntary Curriculum: Science

Grade 4 – 3.0 Life Science F.1
Explain ways that individuals and groups of organisms interact with each other and their environment.

MD Voluntary Curriculum: Social Studies

Grades 3-4 – 3.0 Geography A.1
Use geographic tools to locate and describe places on Earth.

Grades 3-4 – 3.0 Geography B.1
Describe similarities and differences of regions by using geographic characteristics.
DAY 1: PRE-OUTREACH PROGRAM ACTIVITIES

Before educators from the National Aquarium’s outreach department visit your school, read the Teacher Background section found on pages 6-8 and share with your students. As a class, complete Activity 1 – Finding Rain Forests on a Map on pages 11-13 and Activity 2 – Where Does Rain Come From? on pages 14-16.

These activities allow students to familiarize themselves with vocabulary such as the names of the rainforest layers as well as other information that will be touched upon during Aquarium programs. Students will also be introduced to the worldwide distribution of rain forests and discuss basic rain forest characteristics.

DAY 2: OUTREACH PROGRAM AT YOUR SCHOOL

On the day of your Rain Forest Theme Day, the National Aquarium outreach staff will present two 1-hour auditorium programs—one for grades K-2 and one for grades 3-6. Ten to twelve discovery lab sessions (depending upon what is written on the contract) will take place in a separate room throughout the school day. See sample schedule on page 5.

Auditorium Presentation Requirements:
1. A room large enough to hold all of the students scheduled to attend that presentation.
2. Students should be seated and ready to go at the start time that is listed on the contract.
3. Allow 1 hour for each auditorium presentation.

Discovery Lab Session Requirements:
1. Labs need to be in one room for the entire day. The room needs to contain four large tables (or desks that can be pushed together).
2. Each individual class will come to this room approximately two minutes before their scheduled time. Teachers should have the class divided into four groups.
3. Lab sessions are 20 minutes each in duration.
4. National Aquarium outreach staff will need a copy of the schedule upon arrival.

Parent Volunteer Instructions:
1. Parent volunteers need to arrive approximately 30 minutes prior to the start time of the first lab session for training.
2. Each parent volunteer will be in charge of manning one particular table during the entire classroom session.
3. Their main job will be to guide the students through that station and actively engage students with questions and fun facts.
4. Useful questions include: “Have you seen something like that in your home?,” “What does that feel like?,” “What do you think that is used for?,” “How is that different from the items that you have at home?” and/or “What animals are in your backyard that are like rainforest animals?” Object comparisons are also useful (i.e. find similarities, differences, etc.).
5. Please also focus the students’ attention back on the National Aquarium instructor when it is time to rotate to the next station.
SAMPLE SCHEDULE
The outreach staff at the National Aquarium is happy to review your schedule to ensure that the program will run smoothly. Please send a copy of your schedule via fax to 410-659-0116 Attn: Outreach or e-mail outreach@aqua.org.

<table>
<thead>
<tr>
<th>AUDITORIUM PROGRAM</th>
<th>DISCOVERY LABS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
<td><strong>Program</strong></td>
</tr>
<tr>
<td>9-10 a.m.</td>
<td>Grades K-2</td>
</tr>
<tr>
<td>(extra time allotted for transition and set-up for the next program)</td>
<td></td>
</tr>
<tr>
<td>10-11 a.m.</td>
<td>Grades 3-6</td>
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<table>
<thead>
<tr>
<th><strong>Time</strong></th>
<th><strong>Program</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>9-9:30 a.m.</td>
<td>Aquarium staff will also set up labs during the morning presentation</td>
</tr>
<tr>
<td>9:30-10 a.m.</td>
<td>Train morning set of volunteers</td>
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<tr>
<td>10-10:20 a.m.</td>
<td>Grade 1</td>
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<tr>
<td>10:25-10:45 a.m.</td>
<td>Grade 1</td>
</tr>
<tr>
<td>10:50-11:10 a.m.</td>
<td>Grade 2</td>
</tr>
<tr>
<td>11:15-11:35 a.m.</td>
<td>Grade 2</td>
</tr>
<tr>
<td>11:40 a.m.-12 p.m.</td>
<td>Grade 3</td>
</tr>
<tr>
<td>12-1 p.m.</td>
<td>Lunch, rest animals, train afternoon volunteers</td>
</tr>
<tr>
<td>1-1:20 p.m.</td>
<td>Grade 3</td>
</tr>
<tr>
<td>1:25-1:45 p.m.</td>
<td>Grade 4</td>
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<tr>
<td>1:50- 2:10 p.m.</td>
<td>Grade 4</td>
</tr>
<tr>
<td>2:15-2:35 p.m.</td>
<td>Grade 5</td>
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<tr>
<td>2:40-3 p.m.</td>
<td>Grade 5</td>
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</tbody>
</table>

DAY 3: POST-OUTREACH PROGRAM ACTIVITIES
The day after the outreach program complete Activity 3 – Animals of the Rain Forest Book found on pages 17-20. This activity will reinforce the content taught by outreach educators from the National Aquarium during both the auditorium and discovery lab programs. Students will research and present information about rainforest animals and indicate the rainforest layer in which the animals live.
WHAT IS A RAIN FOREST?

A tropical rain forest is a hot, humid, wet, dense forest that is characterized by an enormous biodiversity of plant and animal life. The wet tropical climate consists of an air temperature between 68°F and 93°F (20°C-34°C), with an average humidity of 77-88 percent. Annual rainfall can range between 84 inches (213 cm) and 300 inches (762 cm); most rain forests receive upwards of 100 inches (254 cm) of rain per year, as compared to the average yearly rainfall in Maryland of 41 inches (104 cm). Most of the world’s tropical rain forests are found near the equator in Central and South Americas, Africa, Asia and Australia. Hawaii is the only state in the United States that has tropical rain forests, although temperate rain forests can be found in both Oregon and Washington State.

Abundant moisture and warm temperatures encourage tremendous plant growth, while space and light availability limit the number and types of plants that can grow. Competition for sunlight results in layering or stratification of the rain forest. Although the layers of vegetation are interwoven, they are distinct enough to provide different habitats for many different kinds of animals. There are four layers in a rain forest: the forest floor, understory, canopy and emergent layer. Each layer is comprised of plants and animals that have adapted to live in that specific locale.

FOREST FLOOR

The forest floor is the bottom layer of a rain forest. Only about two percent of the sunlight available to the canopy is able to filter down to the forest floor. As a result, it is very dark but also open and easy to walk through. There are small palms, herbs and ferns growing on the forest floor that are well-adapted to these very low light intensities. This layer of the rain forest consists of shallow, nutrient-rich soil and leaf litter from the above trees. Decomposers, organisms that feed on and “recycle” dead matter into nutrients, break down the decaying plant and animal matter. Animals that can be found on the forest floor include armadillos, turtles, army and leafcutter ants, hissing cockroaches and wood turtles, just to name a few. Piranhas, caimans and anacondas can be found in the rivers that flow through the rain forest.

UNDERSTORY

The understory consists of trees that grow to a maximum height of about 60 feet (18 m). Plants in the understory are adapted to living in shaded conditions. Many of the trees from this layer of the rain forest have large leaves so that they can absorb as much sunlight as possible in order to control their metabolic pathways. Not only is it dark, but it is also extremely humid in the understory because there is little air movement. Animals that can be found in the understory include poison dart frogs and other frogs, tarantulas, lizards, bats, snakes, iguanas, birds such as the toucan and butterflies.

CANOPY

Taller trees, between 60 feet and 130 feet (18 m – 40 m), grow in the canopy layer of the rain forest. The canopy forms a “roof” over the lower layers. Tree leaves tend to be much smaller, more oval in shape and have “drip tips.” Drip tips are pointed ends that allow the rain to slowly run off instead of pouring down too quickly into lower layers of the rain forest and washing the nutrients out of the soil before they can be absorbed by tree roots. The shape of these leaves also help to keep the leaves dry so that mildew and mold do not grow on the surface of the leaf. Food is extremely abundant in the canopy since many animals live in this layer and most trees produce flowers, seeds or berries. Some animals that live in the canopy are sloths, red-eyed tree frogs, poison
dart frogs, spider monkeys, emerald tree boas and other snakes, parrots and macaws. Since there is so much available food, many of these animals will spend their entire lives in the trees of the canopy. Some even stay in this level during reproduction! Exotic plants such as orchids and bromeliads also grow in the canopy.

**EMERGENT LAYER**

The emergent layer is the uppermost level of the rain forest, where the trees can grow between 100 feet and 240 feet (30 m – 75 m). There is only about one emergent tree per acre. These trees have tall trunks, few branches and often have buttressing roots that spread out to support the great heights of these trees. Since the trees in this layer are above the rest of the trees, they are able to reach the sunlight without competing with the other trees. Tree leaves tend to be thick and waxy to help retain water and protect them from the sun and wind. Many birds live in the emergent layer, including harpy eagles, as well as many species of butterflies and monkeys.

**SYMBIOSIS**

Throughout the different layers of the rain forest, many plant and animal species depend on each other for survival. Life in the rain forest is competitive, and many species have developed symbiotic relationships with other species. Symbiosis is a relationship between two different species of organisms that live together. For example, this form of teamwork can be seen between ants and the cecropia tree. The umbrella-shaped cecropia tree has leaves that are often covered in a sticky liquid (sap) and has a hollow trunk. The ants get food by eating the sap and a safe place to live inside the hollow trunk of the tree. The cecropia tree gets protection from the ants as the ants attack animals that try to eat the leaves or plants that grow too close. In the rain forest, symbiosis can also be seen between the Brazil nut trees and the agouti. The agouti, a ground-dwelling rodent, is the only animal with teeth strong enough to open the grapefruit-sized Brazil nut seed pods. The agouti eats some of the seeds and then scatters the rest on the forest floor, allowing new Brazil nut trees to grow.

**TROPICAL RAIN FORESTS COMPARED TO NORTH AMERICAN FORESTS**

Although South American rain forests and North American temperate forests are very different from each other, they have many similarities. Just as the rain forest can be broken down into layers, American forests can as well. The layers of rain forests in ascending order are the forest floor, understory, canopy and emergent layer. North American temperate forests have similar layers. They are the forest floor, shrub layer, understory and canopy.

The trees that grow in North American forests are different than those in tropical rain forests. Coniferous trees with tough, needle-like leaves grow in colder regions. In warmer places, deciduous trees grow. These trees have bigger leaves that fall to the ground in the autumn.

Temperate forests are characterized by broad-leaved trees including beeches, oaks, elms, maples and hickories. The animals in temperate forests are much different from those found in rain forests as well. Bear, deer, wolves, badgers, squirrels, insects and owls are just a few of the animals that live in North American temperate forests. Regardless of the location, forests provide people with resources such as food, timber and medicines.
THE RAIN FOREST AS A GROCERY STORE

Plants from tropical rain forests yield a variety of familiar commercial products. Hardwoods such as mahogany and teak are rain forest products often used for furniture, and the lightweight balsa is used by hobbyists. Bamboo, a giant grass, grows quickly at the edges of the rain forest and is used as a building material. The rubber tree has been widely harvested for its latex (sap), which is processed into natural rubber. Special resins, gums and aromatic wood oils are other rainforest plant products.

Many foods come from the rain forest. The cacao tree, which is native to South American rain forests, produces a pod containing 20-70 beans that are hand-picked, fermented, washed, dried and then roasted to make the commercial chocolate bean. This bean is then utilized in other processes to make milk chocolate and other forms of chocolate. Vanilla, pepper, nutmeg, cinnamon, clove, allspice, chili pepper, cardamon and coconut are just a few of the spices grown in the rainforest and that are commonly used by people. These spices come from the flowers, seeds, fruits, and bark of many rainforest plants. Also, latex from the sapodilla tree was originally used to produce chicle or more familiarly known as chewing gum.

Important drugs used by forest tribes have been refined and renamed for use in the field of modern medicine. Many plants produce chemicals that help to discourage insects from feeding on their leaves or sap, and these same chemicals have been used in the pharmaceutical industry. The bark of the Amazon cinchino tree, now called quinine, was found in 1675 and used to treat malaria. New drugs from rainforest plants are being discovered and are being used to treat high blood pressure, heart disease, leukemia and other forms of cancer. Curare, a dangerous poison when received at full-strength, was commonly used in lower doses during surgery to immobilize patients prior to the development of anesthesia. Scientists and researchers are constantly searching for more plant products that may have the potential to be developed and used to cure human ailments.

GOING... GOING... GONE?
The mysteries and promise of the world’s rain forests are being lost as the human population produces demands on tropical ecosystems. Not only are people moving into these areas, but rainforests’ trees have been cut for lumber and firewood, and also cleared or burned to allow for agriculture in a process called deforestation. Current estimates indicate that less than one half of the world’s original rain forests remain, and at the current rate of destruction, only 25 percent will remain by the year 2030.

Removal of trees has a devastating effect on the land previously covered with vegetation. Plants in the forest retain and release water like a giant sponge in order to moderate seasonal rainy and dry seasons. Without trees, local rainfall may decline and floods may wash away the topsoil, leaving hard red clay soil. Much of the sediment ends up in the rivers, which changes the quality of the water. This loss of trees also affects the animals of the rain forest since their habitat is destroyed when trees are burned or cut down.

People worldwide are starting to realize just how important rain forests are as a natural resource. International conferences have been set up to plan ways to conserve rain forests and to prevent the extinction of their unique plants and animals. Management of logging activities and establishment of national parks and wildlife preserves are just two ways that wildlife and trees can be protected. There are also funds that sponsor animals and purchase acres of rainforest land.
Glossary

**Biodiversity** – the diversity of plant and animal life in a particular habitat

**Bromeliad** – a type of epiphyte with a rosette of stiff leaves

**Buttress roots** – roots that spread out to support the great heights of emergent layer trees

**Canopy** – thick layer of leaves and branches that make up the “roof” layer of the rain forest

**Decomposer** – organisms that feed on and “recycle” dead matter into nutrients; examples: millipedes, hissing cockroaches, termites, worms, insects and fungi

**Deforestation** – cutting down, burning and clearing of forests

**Drip tip** – the long, pointed tip on leaves in the upper layers of the rain forest; shed water from the leaf’s waxy surface at a slower pace

**Emergent Layer** – the top layer of the rain forest; the layer with the tallest trees

**Epiphyte** – a plant that lives on another plant and gets its water and nutrients from the air

**Equator** – an imaginary line that circles the world like a belt halfway between the North and South Poles

**Forest Floor** – the bottom layer of the rain forest (soil)

**Nutrients** – “food” that plants and animals need to grow

**Symbiosis** – a type of relationship where two different species of organisms live together; examples include ants living in the cecropia tree and agouti eating the Brazil nut pod seeds

**Tropical rain forest** – a forest that is found near the equator and gets over 80 inches of rain every year

**Understory** – the layer of trees and plants that grow between the forest floor and the canopy; made up of smaller trees and bushes; little available sunlight
Resources

NATIONAL AQUARIUM, BALTIMORE, MD
aqua.org
Use this site for information about rainforest animals. There are fact sheets that are at an elementary readability level. Navigate the Aquarium website to find animal information sheets, resources and fun activities for your students.

ANIMAL PLANET
animalplanet.com
This website contains a great list of web links to find information about rainforest animal facts and conservation.

THE WILDLIFE CONSERVATION SOCIETY
wcs.org
This organization works to save wildlife and their habitats through careful science and education.

CAN TROPICAL RAIN FORESTS BE SAVED?
PBS Home Videos
Documentary that discusses rainforest conservation issues.

RAINFOREST ACTION NETWORK KIDS’ CORNER
ran.org/new/kidscorner/kid_s_action/
A website that provides information about threats to the rainforest and what you can do to help. There is also information about native people and animals.

RAINFOREST ALLIANCE – FOR KIDS AND TEACHERS
rainforest-alliance.org/resources.cfm?id=facts
A website that features information about rainforest animals and ideas that kids can do to save the rainforests.

NATIONAL GEOGRAPHIC
nationalgeographic.com
A website that contains a great list of web links to find information about rainforest animal facts and conservation.

BOOKS
See page 18 of the teacher booklet for a comprehensive list.
Activity 1 — Finding Rain Forests on a Map

DESCRIPTION
In this lesson, students learn about the location of rain forests on Earth and in relation to Maryland. This activity can be used in conjunction with lessons about map elements and using models to represent large objects.

PROCEDURE
1. Use a globe to illustrate the Earth.
   • Have students point out and name the continents, USA, Maryland (or your state), North Pole, South Pole, equator, Tropic of Cancer, Tropic of Capricorn, oceans
   • Ask questions such as:
     What would it be/feel like to take a vacation to different areas on the globe?
     What kind of clothes would you have to pack?
     Why does it feel like that?
     Amount of sunlight/heat that reaches an area
     What season is the warmest in Maryland?
     What season is the rainiest?
   • Find the location of tropical rain forests on the globe (along the equator, between the Tropics of Capricorn and Cancer).
   • Ask questions such as:
     Which continents have tropical rain forests on them?
     All continents along the equator.
     Are there any rain forests in North America?
     What about the United States?
     Yes, there are tropical rain forests in Hawaii and temperate rain forests in Oregon and Washington states.

2. Pass out world maps to students (found on page 13) and ask questions such as:
   This is a map. How is it like/similar to a globe?
   Represents the Earth; shows the continents, oceans, equator, etc.
   How is it different from a globe?
   A globe is round, the map is flat, the continents look closer together, etc.
   Which is a better model?
   Both are useful, but the globe is a more accurate representation since it is round like the Earth.
   • Use colored pencils/crayons to shade the location of rain forests. Have the students find where it is warm and tropical, along the equator. Demonstrate but let students find the locations on their own. This can be used for an assessment of their learned knowledge about the location of tropical rain forests as well as their ability to transition information between models (globe and map).
Activity 1 — Finding Rain Forests on a Map

DIRECTIONS
Label the world map. Use the word bank to write the names of the continents, oceans and features. Then, read the paragraph to learn where rain forests grow in the world. Color these areas green.

WORD BANK

<table>
<thead>
<tr>
<th>Continents</th>
<th>Oceans</th>
<th>Features</th>
</tr>
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<tbody>
<tr>
<td>Africa</td>
<td>Atlantic Ocean</td>
<td>Equator</td>
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<td>Arctic Ocean</td>
<td>North Pole</td>
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<td>Asia</td>
<td>Indian Ocean</td>
<td>South Pole</td>
</tr>
<tr>
<td>Australia</td>
<td>Pacific Ocean</td>
<td>Tropic of Cancer</td>
</tr>
<tr>
<td>Europe</td>
<td>Southern Ocean</td>
<td>Tropic of Capricorn</td>
</tr>
<tr>
<td>North America</td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>South America</td>
<td>United States</td>
<td></td>
</tr>
</tbody>
</table>

North Pole

STEP B
Read the paragraph below. Then, color the places on the map where tropical rain forests can grow.

It is hot and wet in a tropical rain forest. This is near the equator. It is too cold for tropical rain forests to grow in Antarctica. They grow on all other continents.
Activity 1 — Finding Rain Forests on a Map

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Label the world map. Use the word bank to write the names of the continents, oceans and features. Then, read the paragraph to learn where rain forests grow in the world. Color these areas green.

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It is hot and wet in a tropical rain forest. This is near the equator. It is too cold for tropical rain forests to grow in Antarctica. They grow on all other continents.
Activity 2 — Where Does Rain Come From?

DESCRIPTION
In this activity, students learn about the four basic characteristics of rain forests: plentiful rainfall, humidity, warm temperatures and lack of season variation. There are demonstrations to help illustrate these characteristics, including use of a rainfall comparison, water cycle flow chart and terrarium.

PROCEDURE

1. Rainfall: Use the rainfall comparison at eduweb.com/rain/rainfall.html. Ask students questions such as, “How much rain do you think falls each year in the rain forest? In Maryland (or your state)?” (Let them predict without affirming or disproving.) Click on the link to illustrate the amount that actually falls. Ask students: “Why there is so much rainfall at the equator? Is the rainfall good or bad for the plants in the rain forest?” (Good, they have adapted to there being a lot of rainfall, they need it to grow; many other plants cannot survive with that much rain.)

2. Humidity: Tell students to close their eyes and picture standing in the bathroom right after taking a really hot shower. What does it feel like? (very hot, moist, steamy) That is humidity. Humidity is having moisture/wetness in the air even when it is not raining.

3. Water Cycle:
   • Use a group chart (Velcro pictures of clouds, raindrops, rain forest, trees, arrows and labels for the title and pictures) to illustrate the water cycle of a rain forest. Point out to students that there are different levels of the rain forest, based upon tree height. You can name the layers. Ask students what needs to fall from the sky in order for it to be a rain forest (rain). Velcro the raindrops over the forest. From what does the rain fall? (the sky, what is in the sky? Try to get them to say cloud.) Velcro the cloud. After the rain falls, it hits the ground. What do trees have under the ground? (roots) What can roots do to the rain? (soak it up, trees need water) Velcro the trees. It is humid in the rain forest, so what must be in the air? (moisture, water) Velcro the arrow back toward the cloud. This is called the Water Cycle of the Rainforest. Velcro the title. Pictures for the flow chart can be found on page 15.
   • Build a terrarium with your students or use a pre-made terrarium. Directions can be found on page 16. Use the terrarium to connect the water cycle to the idea that terrariums do not need to be watered. “A terrarium is a lot like a rain forest. Can you name some ways? (plants, humidity, moisture, water, rain, dirt, soil, ecosystem) A terrarium does not need to be watered. How does this relate to the water cycle that we just talked about? (water is trapped in the system and goes constantly through the cycle so we never need to add outside water to the system).

4. Warm temperature: Ask the students questions such as: “Where are tropical rain forests found?” (along the equator), “Could rain forests be found in places like the Arctic? Maryland (or Pennsylvania or Virginia)?” (No, too cold, not along the equator). You can have students refer to their maps to point out these locations.

5. Little to no seasonal variation: summer and winter seasons are very similar. Compare the pattern of weather /climate of rain forests to that of Maryland. (The mid-Atlantic region has drastic seasons, cold winters with snow, summers that are extremely hot)
Activity 2 — Where Does Rain Come From?

**Water Cycle of a Rain Forest**

- Roots soak up moisture
- Moisture forms clouds
- Rain falls
- Water is released into the air
Activity 2 — Where Does Rain Come From?

HOW TO MAKE A TERRARIUM

1. Add a layer of pebbles to promote drainage at the bottom of the container.

2. Cover the pebbles with about a 2 inch layer of topsoil.

3. Place a few rocks in the terrarium.

4. Add branches, moss and small plants.

5. Slightly moisten the terrarium with water, but be careful not to over do it.

6. Cover the opening with a sheet of plastic.

7. If you would like to add worms to the terrarium, cover the top with a screen or a stocking so that air can get through. As well, make sure that it doesn’t get too much sun. Worms do not like too much sun.

*Instructions from canteach.ca.

MATERIALS

- a large, clear plastic container or jug
- gravel
- small plants (suited to your anticipated growing conditions; for example: choose sun-loving plants if the terrarium is going to be placed in a bright place and vice versa
- topsoil/dirt
- rocks, branches, moss
- plastic wrap
- screen or stocking
Activity 3 — Animals of the Rain Forest Book

DESCRIPTION
In this activity, students will work in groups to research facts about rainforest animals. Each student will create one page of a larger book entitled “What We Learned About Rainforest Animals.” There is a research worksheet for a more in-depth investigation about rainforest animals. Encourage your students to use some of the resources listed on page 10 including the fact sheets from the National Aquarium’s website, aqua.org, that were prepared especially for this activity.

PROCEDURE

1. Group students in groups of three.
2. Direct each group to pick a rainforest animal that they learned about during the National Aquarium program. Animals discussed include hissing cockroaches, millipedes, capuchin monkeys, toucans, poison dart frogs, sloths, tarantulas, ants and hummingbirds. Additional animals can be found in a list on page 18.
3. Provide time for groups to research their animal using books or the internet. Refer to the Resources page (page 10) as well as the list of books listed on page 18.
4. Research will be guided by a research worksheet (found on page 19) that has students searching for information about the animal’s habitat requirements and adaptations. This includes food, water, shelter and space. Students should also find a picture of their animal as well as a fun fact to include on their page.
5. Have each student draw a picture of that animal.
6. Have each student choose two facts from their list and write a short paragraph using that information to caption their drawing.
7. Each group should create a small book using the individual pages of each group member. Then, they should add a cover page made out of construction paper. Your completed class books can be titled “What We Learned About Rainforest Animals” or “All About Rainforest Animals,” or something else of their choosing.
Activity 3 — Animals of the Rain Forest Book

RAINFOREST ANIMALS
Anaconda
Hissing cockroach
Ants
Giant African millipede
Scarlet macaw
Pygmy marmoset
Emerald tree boa
Agouti

Piranha
Toucan
Bird-eating tarantula
Poison dart frog
Capybara
Orangutan
Harpy eagle
Red-eyed tree frog

Dwarf caiman
Hummingbird
Three-toed sloth
Capuchin monkey
Jaguar
Flying fox
Panther chameleon
Iguana

RESEARCH RESOURCES (ALSO SEE PAGE 10)
National Aquarium education fact sheets: aqua.org

Factual Books
- *Eye Wonder: Rain Forest* by Helen Sharman ISBN:0789478536
- *Rain Forest Homes* by Althea ISBN:0521316197
- *Question Time: Rainforest* by Angela Wilkes ISBN:0753454424

On Reading Level
- *We Both Read: About the Rain Forest* by Heather Johanasen & Sindy McKay ISBN:1891327232
- *We Can Read About Nature!: In the Rain Forest* by Catherine Nichols ISBN:0761414320

Narrative
- *Here Is the Tropical Rain Forest* by Madeleine Dunphy ISBN:0977379507
- *If I Ran the Rain Forest* by Bonnie Worth ISBN: 0375810978

Activities
Activity 3 — Animals of the Rain Forest Book Research Worksheet

DIRECTIONS
Work with your group to complete this worksheet. Use the resources that your teacher gives you. You can use books or the internet. Then, draw a picture of your animal. You will present this information to the class.

ANSWER THE FOLLOWING QUESTIONS.

1. Our animal is the ____________________________________________

2. How big is your animal? ______________________________________

3. What does your animal eat? ____________________________________

4. Where does your animal get water? ______________________________

5. Where does your animal find shelter? __________________________

6. What layer of the rain forest does your animal live in? ____________

7. Write down one fun fact about your animal. ______________________
Activity 3 — Animals of the Rain Forest Book

Research Worksheet

DIRECTIONS

STEP A: WORK WITH YOUR GROUP
1. Pick a rainforest animal that you learned about during the Aquarium program.
2. Complete the research worksheet using books and the internet.

STEP B: WORK BY YOURSELF
1. Draw a picture of that rainforest animal.
2. Choose two facts from your list. Write a paragraph using those facts.

STEP B: WORK WITH YOUR GROUP
1. Make a book using all of the pages that your group made.
2. Make a cover page and title your book.

STEP B: WORK WITH YOUR CLASS
1. Present your book to the class.
2. Tell the class what you learned about the rainforest animal that you picked.