



In collaboration with the Amazon Conservation Team (ACT) authors Jayna Rubin and Gretchen Schlesinger have created an easy to use study guide that will not just make teaching about the rainforest fun and easy but give the students an unforgettable hands-on experience. ACT's holistic methods and efficient use of resources to save the rainforest have put their organization on the map as a highly rated charity.

The Official Amazon Conservation Team Rainforest Study Guide achieves the ultimate goal of leaving a lasting impression on students that will help them realize their strong potential to impact a lush tropical world that is slowly vanishing--and worth saving.

* Activities include: maps and graphing, discussion questions, writing activities, science, math--even creating a comic strip!

To all the students I have had the honor of working with at Fort Couch Middle School, in Pittsburgh, Pennsylvania. You have all taught me so much. My wish for all of you is that you live full and happy lives, and that you never stop learning.

—J. R.

To Eric, my favorite fish in the water.

—G. S.

To Avalynn Rose, who tomorrow will inherit the world we create today.

—W. E. J.

The authors would like to give a special thank you to Sarah Millen for her contributions to the activities.

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JUST THE FACTS

There are many things we do not yet know about the tropical rainforests around the world. Here are some things we do know:

In 2007, ACT held a traditional knowledge exchange in Suriname between people, leaders and healers from four countries.

ACT set up a school for students to study and learn everything about their culture and preserving the rainforest.

For thousands of years, shamans have passed down important information about the healing medicines of the rainforest to the next generation.

There are more than 40 different kinds of toucans; the "Toco" is the largest of the toucan family.

People often refer to the rainforest as the "lungs for the planet". Trees and plants take in carbon dioxide and give off oxygen.

Some animals find everything they need to survive in the emergent layer and never leave it.

We have only sampled a tiny fraction of the foods in the rainforest.

The rainforests around the world are in a wide band near the equator.

Giant bamboo plants can grow up to nine inches a day.

Ipecac flowers are used for curing fevers.

The Amazon gets nine feet of rain every year.

There are at least 80 different species of monkeys in the rainforest; one is so tiny that it can fit in a teacup.

Poison dart frogs are bright in color to send off a warning to potential predators that they are poisonous.

Many rainforest snakes have green skin that allows them to blend in with the leaves and trees.

Female red-eyed tree frogs lay about 50 eggs, and the eggs hatch into tadpoles within a few days.

Flying frogs, squirrels and snakes can be found in the Asian rainforest.

There are native tribes who have lived in the rainforest for thousands of years without causing any long-term damage.

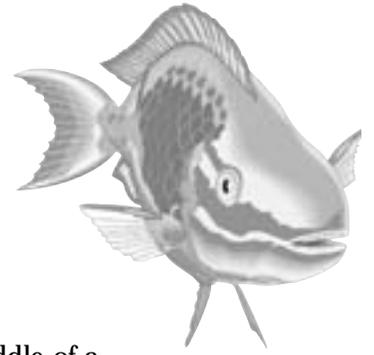
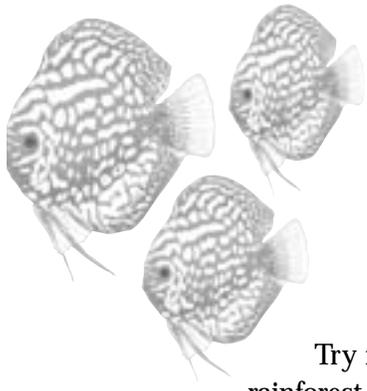
It is believed that one hectare (2.47 acres) of rainforest can contain over 750 types of trees and 1500 species of higher plants.

Experts estimate that we are losing 137 plants, animal and insect species every single day due to rainforest deforestation.

Wild pepper is used for toothaches.

Destroying the rainforest will forever change the climate all over the world.





ACTIVITY #1

JOURNEY TO THE RAINFOREST

Get students in the mindset of being in a tropical rainforest. Teacher or student can read out loud.

Try for a few minutes to imagine what it's like to stand in the middle of a rainforest. Imagine that it is hot and damp and very still. You start to sweat a little bit because there is no breeze. The dampness has a certain smell too. You take a few steps forward and hear crunching leaves under your feet. You can smell their earthy scent.

All around you there are faint sounds that fill the forest. To the left you hear the rising buzz of cicadas and the chirping crickets. To your right are bird calls and rustling sounds in the trees above you and other sounds you don't recognize at all. It is like someone turned the lights to low, and every shade of green that you have ever seen or could imagine is all around you. There are some beams of sunlight that are sneaking their way through the leafy walls around you.

You decide to walk around and see what else you can find. It is clear in front of you but you are careful not to trip over any tree roots that run along the ground. You are also careful of the leaves that have become wet and slippery.

Right in front of you is a large tree trunk, only its roots don't go deep into the ground like you are used to. The base of the tree is like a fluted skirt, giant and spread out, sitting on the ground. You look around and see that many of the rainforest tree roots look like this one. The base of this tree would reach the ceiling of your classroom! Then you stretch up on your toes to see that the tree then narrows and becomes straight and round.

You reach out and touch the trunk of the tree. It feels smooth and damp and there are little ferns and moss growing all over it. You lean in a little bit closer to see the ants going up and down the tree in a line. The ants coming down the tree are all carrying a piece of leaf that is larger than the ant itself! The ants going up the tree aren't carrying anything at all.

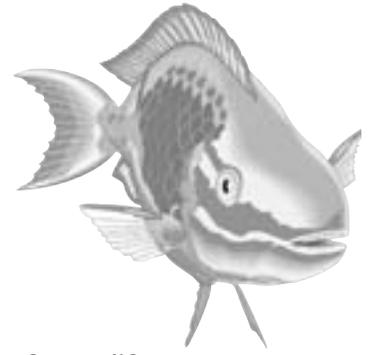
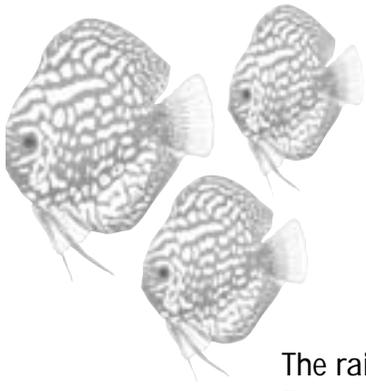
You watch the ants working so hard—when a sudden chattering and rustling in the branches overhead catches your attention and you duck as a small light rainfall of twigs and leaves comes down around you. You look up and see hundreds of eyes staring at you. It is a troop of spider monkeys. Some have babies on their backs and they are all using their tail for grabbing. Then in a swing and swish the monkeys disappear up and out of sight.

As you start to walk forward you notice the thick stiff ropes hanging down everywhere. The rainforest is full of these woody vines and aerial roots. You realize how strong these woody vines are as you see that some of them are holding up fallen trees.

You take a few steps back and a wonderful fragrance surrounds you. There are no flowers in sight. Then, a handful of pink blossoms fall from the sky and land all around you. You look up and realize that these beautiful pink blossoms are from another world, a world far, far above you where a tree blossoms. It is up there in the canopy where most of the rainforest plants and animals live their entire lives.

Then a gentle rain starts to fall and you can open your eyes. It's time to end our journey to the rainforest.





ACTIVITY #2

RAINFOREST TREASURES

The rainforest is around you every day, in your house and part of your life. From the list below, check off what products you use every day.

WOODS

Look at furniture, floors, doors, toys, cabinets and models

- balsa
- mahogany
- rosewood

FOOD PRODUCTS

- avocado
- banana
- Brazil nuts
- cashew nuts
- coconuts
- coffee
- cola
- grapefruit
- guava
- heart of palm
- lemon
- lime
- macadamia nuts
- mango
- orange
- papaya
- passion fruit
- pepper
- pineapple
- plantain
- tangerine
- tapioca
- tea

HOUSEPLANTS

- African violet
- begonia
- bird's nest fern
- bromeliad
- Christmas cactus
- corn plant
- dieffenbachia
- fiddle-leaf fig
- orchid
- philodendron
- rubber plant
- snake plant
- umbrella tree
- zebra plant

OILS

Look in medicines, insect repellents, suntan lotions, soaps, candles, snack foods and perfumes

- camphor
- coconut
- lime
- palm
- rosewood
- sandalwood

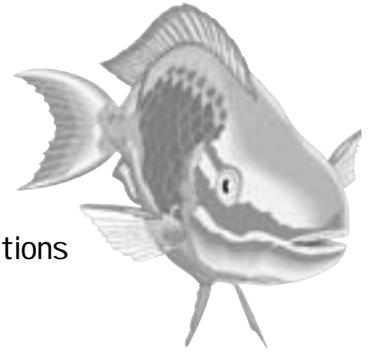
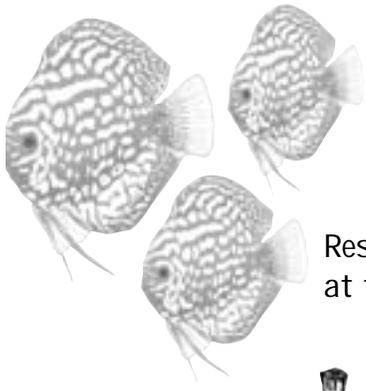
SPICES AND FLAVORS

- allspice
- black pepper
- cardamon
- cayenne
- chili pepper
- chocolate or cocoa
- cinnamon
- cloves
- ginger
- nutmeg
- paprika
- turmeric
- vanilla

GUMS AND RESINS

- chicle
Look for chewing gum
- rubber
Look for balloons, erasers, foam rubber, rubber bands, gloves, hoses and tires

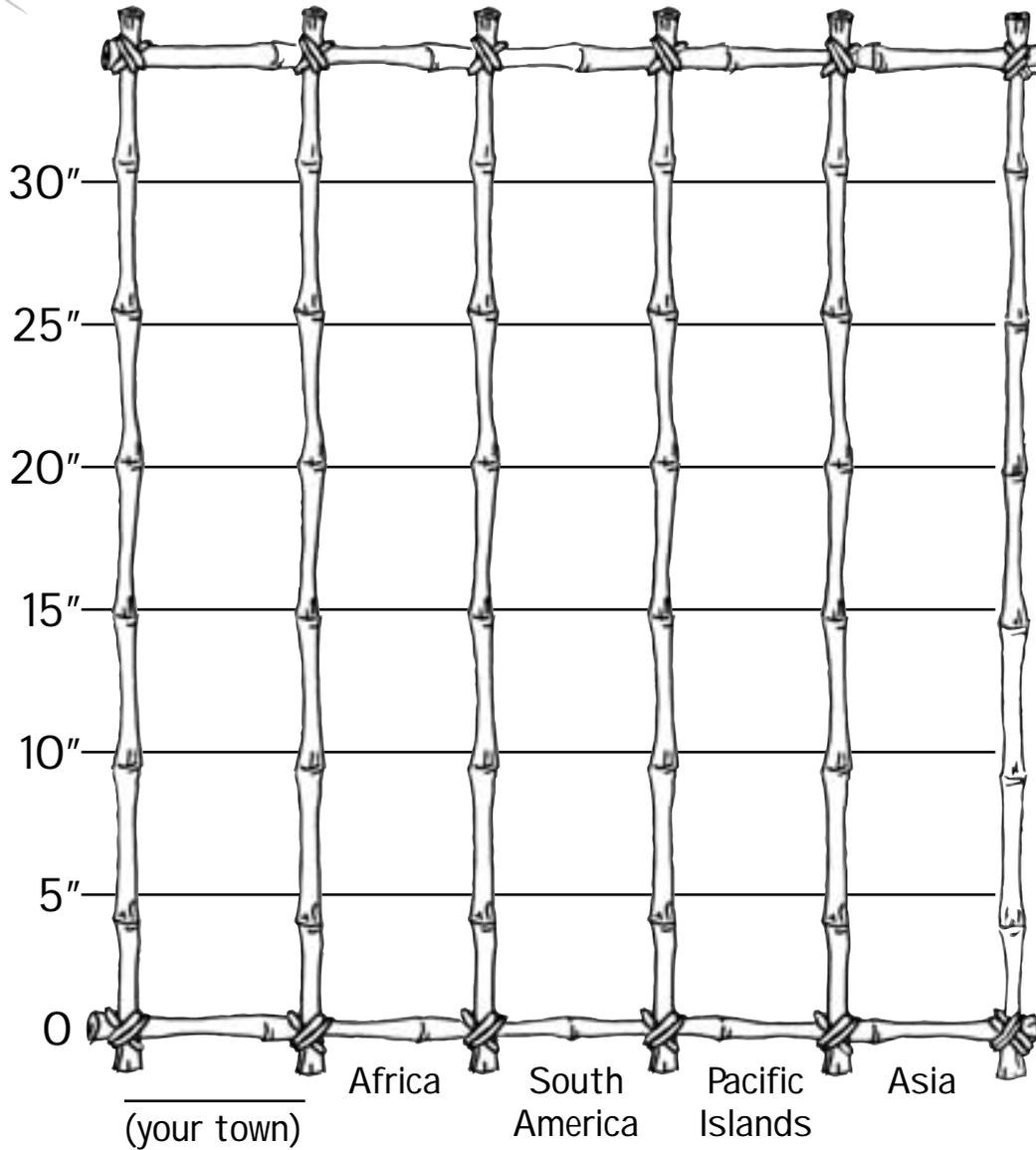




ACTIVITY #4

RAINFALL GRAPH AND QUESTIONS

Research and fill in the rainfall graph below. Answer the questions at the bottom of the page. Please state your sources.



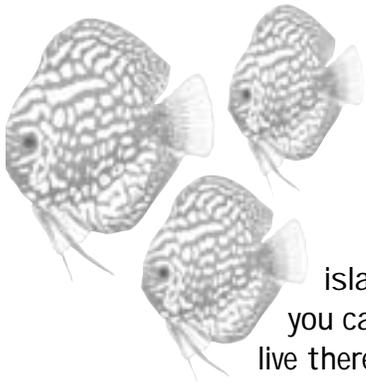
How much rain does a place need to get per year to be considered a "rainforest"? _____

According to your research, which rainforest gets the most rainfall? _____

Which rainforest gets the least amount of rainfall? _____

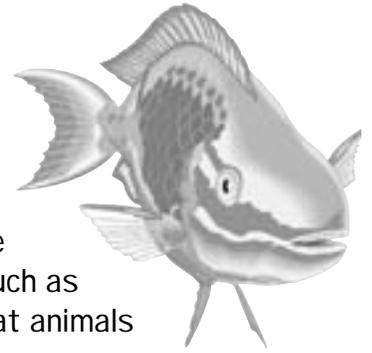
According to your research, are there any other rainforests? _____





ACTIVITY #5

ISLAND CREATION



Your small group has just landed on a remote island in the tropical rainforest. Now you must learn as much as you can to survive. Describe everything about your island. What animals live there? What does it look like?

Come up with an island flower, flag and mascot. Draw a map of the island and describe what kinds of products would you create from the things you discover on the island. Students can each take part in presenting things about the island and its wonders.

DRAW YOUR ISLAND MAP HERE.	FLAG	FLOWER
	MASCOT	

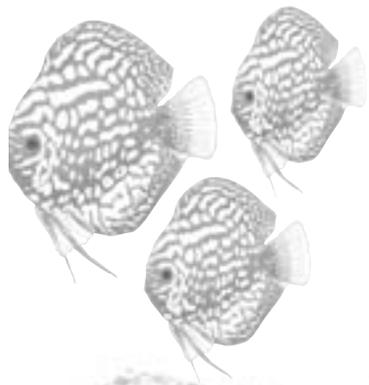
MY ISLAND IS...

ANIMALS THAT LIVE THERE...

PRODUCTS I WOULD CREATE...

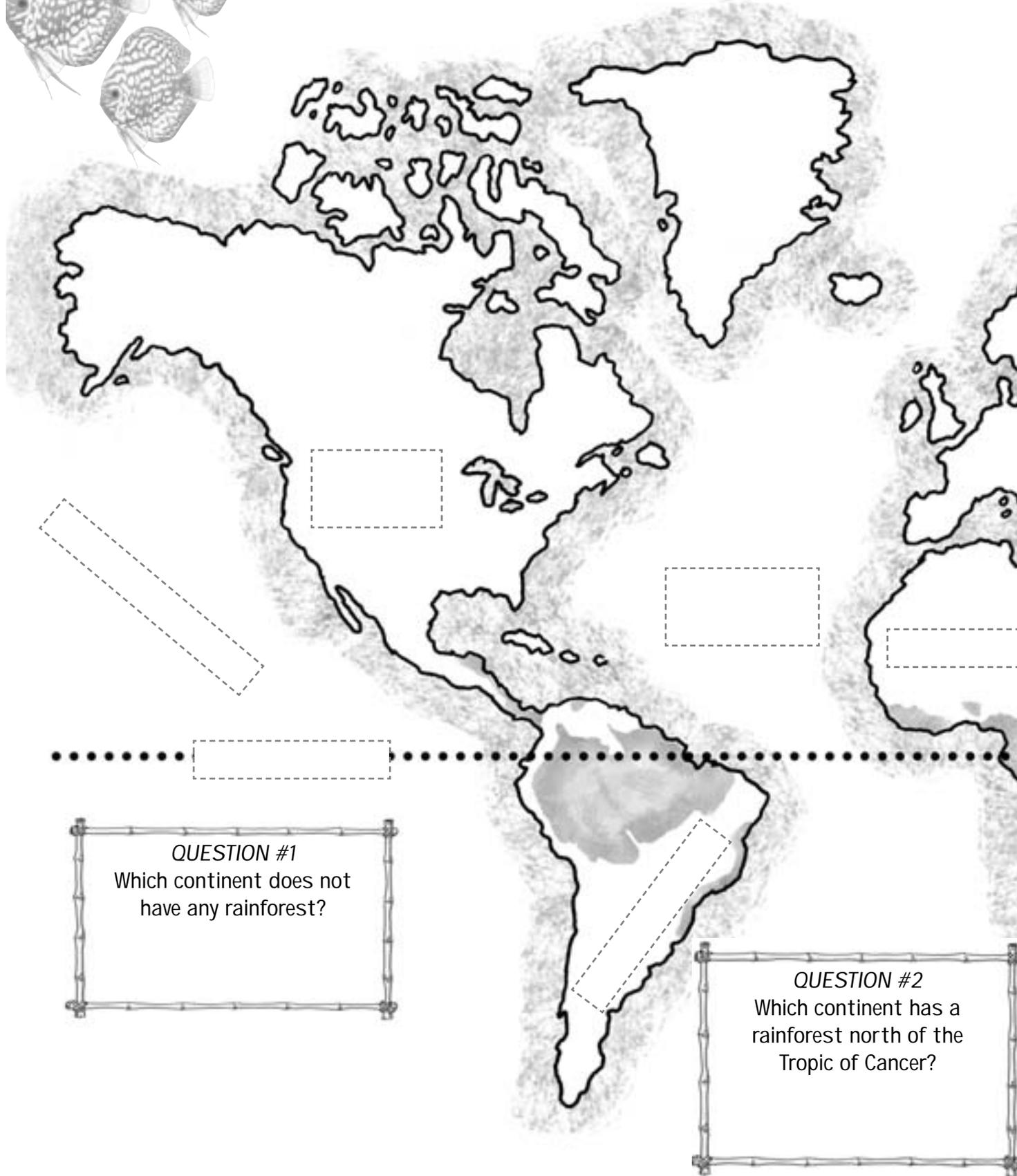
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ACTIVITY #6

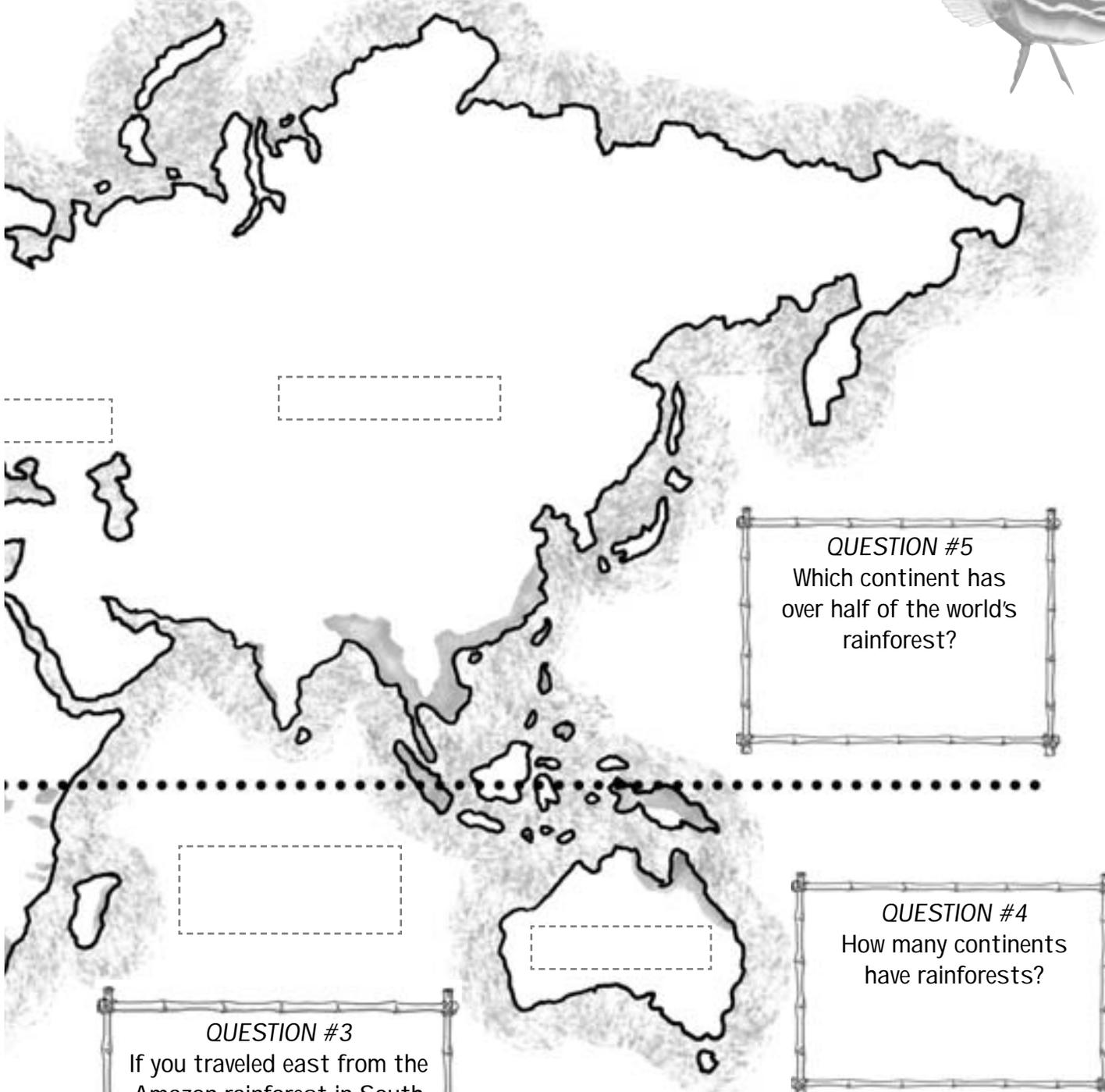
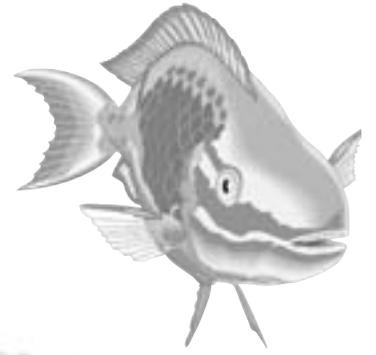
WORLD RAINFOREST MAP



QUESTION #1
Which continent does not have any rainforest?

QUESTION #2
Which continent has a rainforest north of the Tropic of Cancer?

On the map, label the following in the boxes: _____, equator, North America, South America, Africa, Asia, Europe, Australia, Antarctica, Pacific Ocean, Atlantic Ocean, Indian Ocean and the Arctic Ocean. See where the rainforests are located, then answer the questions below. Use resources at the library or the Internet. State the sources. Color code the map, add or draw any details that make your map a work of art. Include the ethno-mapping symbols.

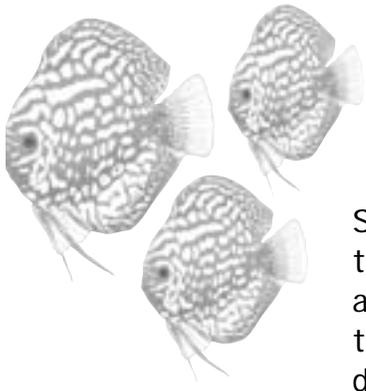


QUESTION #5
Which continent has over half of the world's rainforest?

QUESTION #4
How many continents have rainforests?

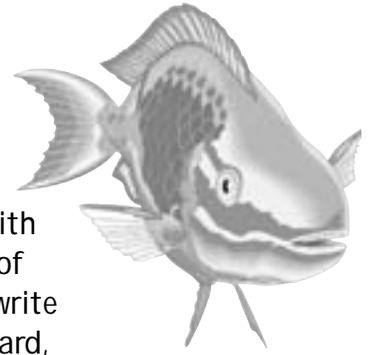
QUESTION #3
If you traveled east from the Amazon rainforest in South America, which continent would be the first one you reach that has a rainforest?



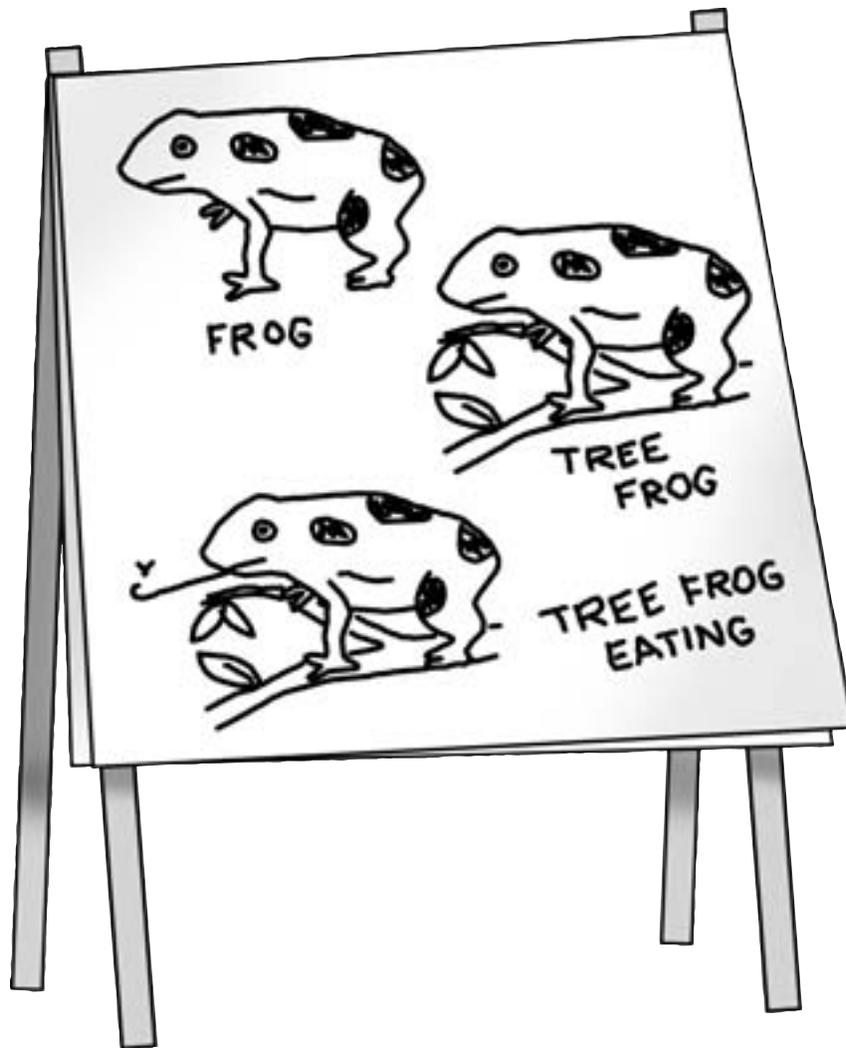


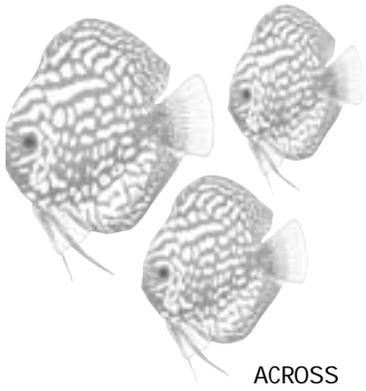
ACTIVITY #7

SHOW ME!



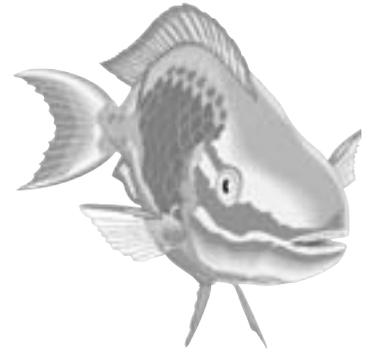
Students practice their use of language and creativity with this activity. Students draw on easel or board a picture of an animal, person, or plant native to the rainforest and write the name underneath. The next student will go to the board, draw the same picture, write the same name, and then, in front of the name, will write a word to describe it. The student will modify his/her picture in order to show the change in the picture with the additional word. Continue as long as appropriate.





ACTIVITY #12

CROSSWORD



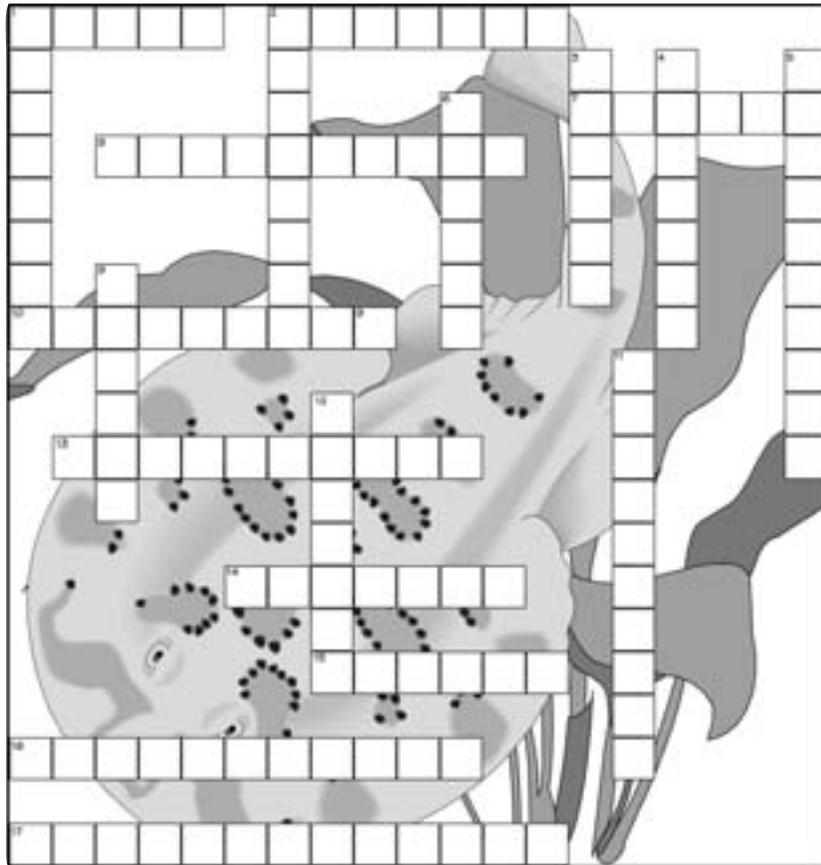
Fill in the crossword puzzle below using the clues.

ACROSS

1. An animal that will hang in a tree for hours.
2. The imaginary circle around the Earth's surface.
7. The largest river in the world in volume of water carried.
8. An underlying layer of vegetation, especially the plants that grow beneath a forest's canopy.
10. An ecological community together with its environment, functioning as a unit.
13. A dense evergreen forest occupying a tropical region.
14. The conditions of a region (temperature, precipitation, wind) characteristic of a specific place.
15. A respected member of a tribe who studies rainforest medicines.
16. A stream that flows to a larger stream or other body of water.
17. A scientist who studies the relationship between plants and people.

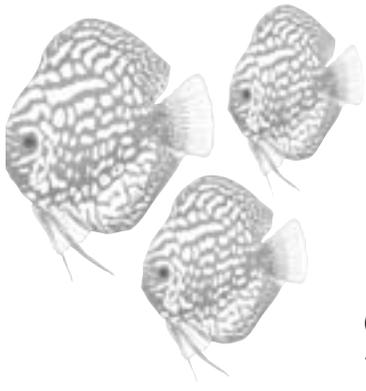
DOWN

1. A country of northeast South America on the Atlantic Ocean.
2. The tallest trees in the rainforest, can tower 200 feet above the forest floor.
3. The cover formed by the leafy upper branches of the trees in a forest.
4. A delicious fruit that grows in bunches.
5. Originating or living naturally in an area or environment.
6. A beautiful flower which grows up high in trees and uses its long roots to soak up moisture from the air.
9. This brightly colored bird uses its beak to collect fruits and berries.
11. A species that is in small numbers and at risk of extinction.
12. The geographic region of the earth where the sun reaches a point directly overhead at least once a year.



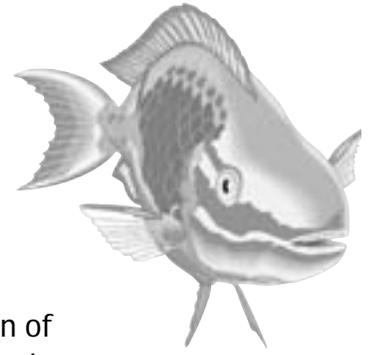
For the crossword puzzle answers, visit the website at www.amazonteam.org.





ACTIVITY #13

ADVERBS & R T



Create three lines describing how an animal/plant/person of the rainforest acts in its/his/her surroundings. For example:

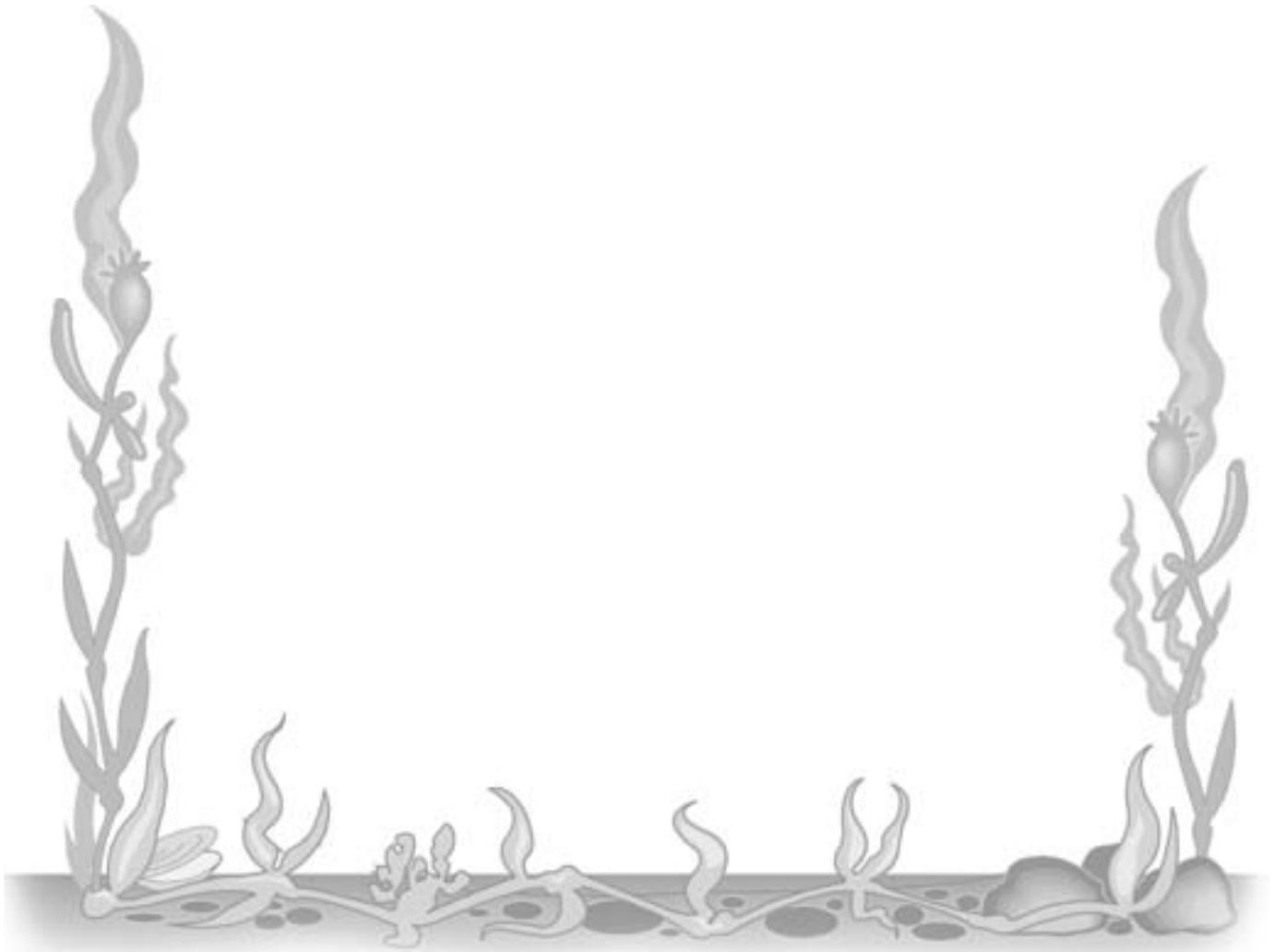
THREE-TOED SLOTH

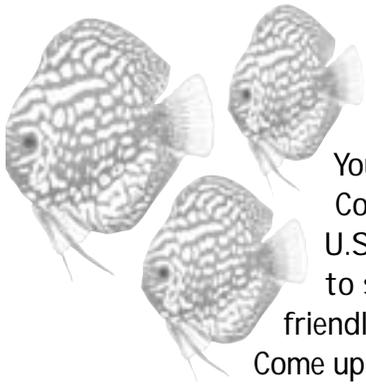
I live in warm and humid environments *exclusively*.

I move from tree to tree *slowly*.

I feed on leaves *entirely*.

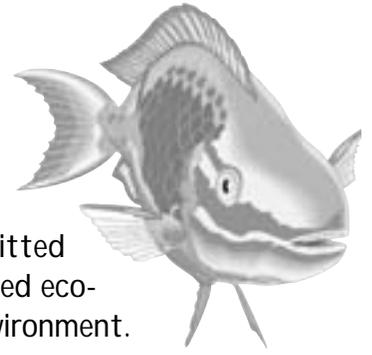
Draw and decorate a picture to complement the description.





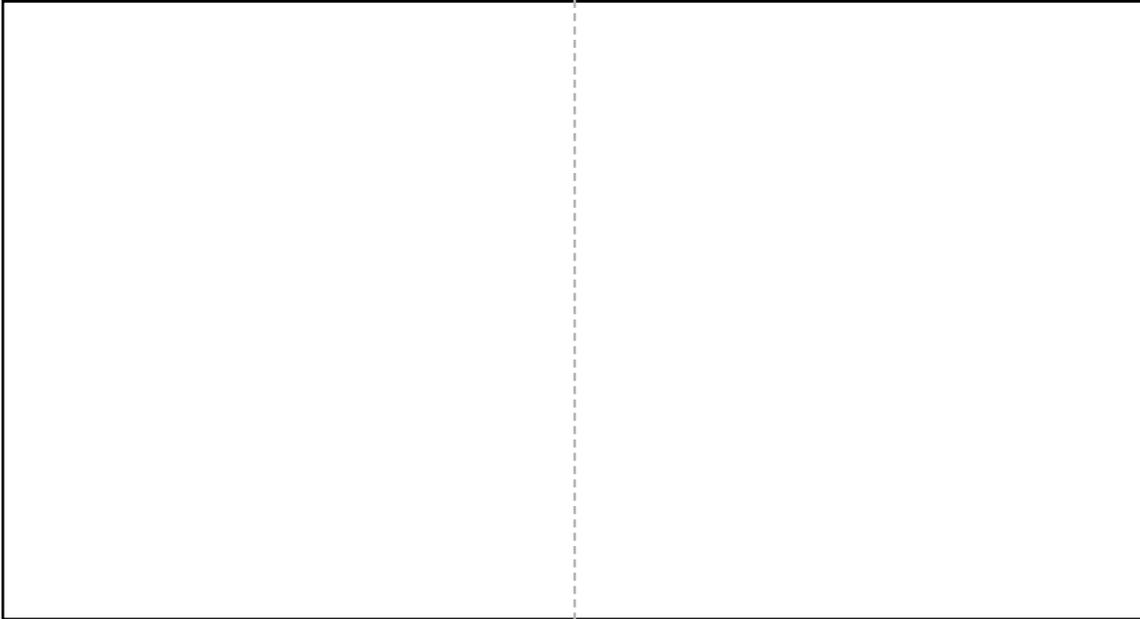
ACTIVITY #14

CHOCOLATE

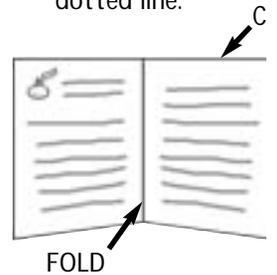


You have just been selected by the Trio-chocolate Company to help sell their new chocolate product in the U.S. The company is located in the rainforest and is committed to staying green by doing things like only printing on recycled eco-friendly paper and not doing anything that would hurt the environment. Come up with an advertisement/brochure that will help promote the company.

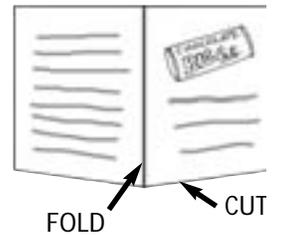
INSIDE



BROCHURE INSIDE
When you are finished, cut out on the black lines and fold in half along the dotted line.



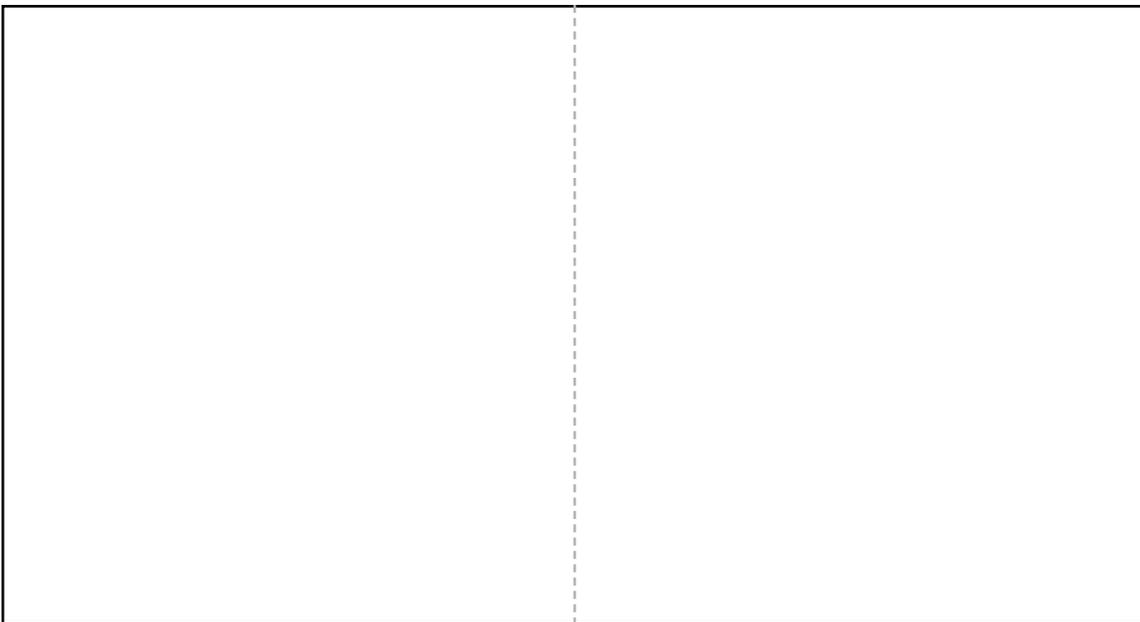
BROCHURE OUTSIDE
When you are finished, cut out on the black lines and fold in half along the dotted line.



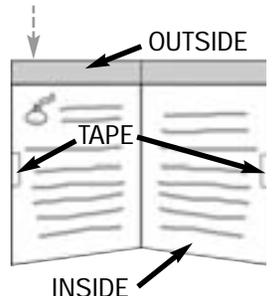
BACK

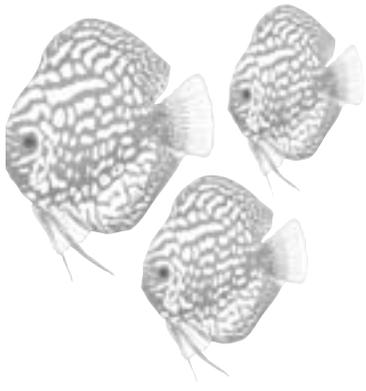
OUTSIDE

FRONT



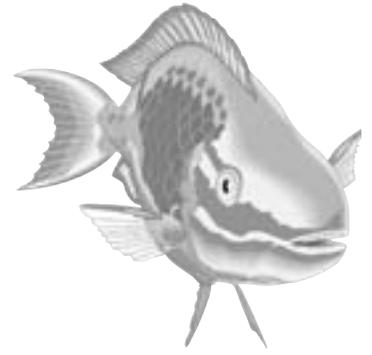
Slip the folded outside over the folded inside and tape on each side.





ACTIVITY #15

CLEVER OR CLUELESS?



How many clever clues will it take? Students break up into small groups and come up with a list of clues related to a object, person, animal, plant or tree. Students elect a group leader to present to the class, and the group that lasts the longest wins.

WE CHOOSE _____
CLUES



WE CHOOSE _____
CLUES

WE CHOOSE _____
CLUES

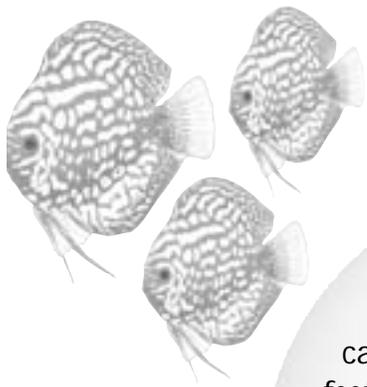
WE CHOOSE _____
CLUES



WE CHOOSE _____
CLUES

WE CHOOSE _____
CLUES





ACTIVITY #16

WORD PROBLEMS



1.

An average rainforest canopy is approximately 150 feet tall. Deep in the heart of the Amazon is an otto tree. These trees can grow up to 225 feet tall. How much taller is the tallest otto tree than the average height of a rainforest canopy?

2.

It is believed that there are 3000 different fruits in all of the rainforests combined. So far, we only know about 200 of these fruits. How many more fruits are there for us to potentially discover?

3.

Throughout history, scientists have kept detailed notes about the changes in the rainforest. They calculate that 14.31% of the Earth was once covered by rainforest, and now only 6.22% of the Earth is covered by rainforest. If their calculation is correct, what percentage of rainforest has been lost?

4.

Several species live in the emergent layer of the rainforest. The children of a rainforest tribe carried out a research project and found that there are $5 \times 4 + 60$ different kinds of monkeys. There are $20 + 10 + 6 + 4$ kinds of toucans and two different kinds of sloths. How many monkeys, toucans and sloths are there in total based on their research?

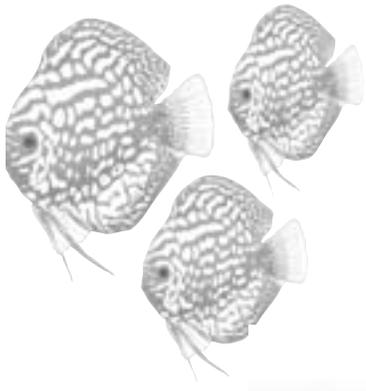
6.

A researcher takes a canoe trip, navigating through a series of slow moving tributaries which connect through oxbow lakes to the Amazon River. On the first day, the traveler goes 2 miles before stopping to collect plants and do research. On the second and third day, he goes 6 miles total and on the fourth day he goes one mile. How many miles did he travel total by canoe? How many days did it take him?

5.

Although there has been a long time rivalry, today it is believed that the Amazon is 4,225 miles (6,800 kilometers) long, while the Nile stretches 4,160 miles (6,695 kilometers). How much longer is the Amazon than the Nile in miles? And, how much longer is the Amazon than the Nile in kilometers?

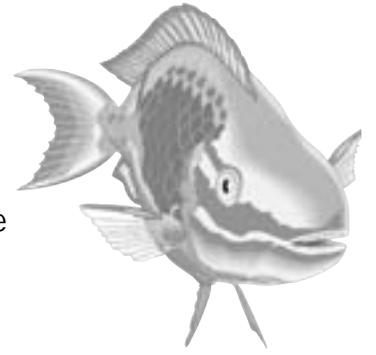




ACTIVITY #18

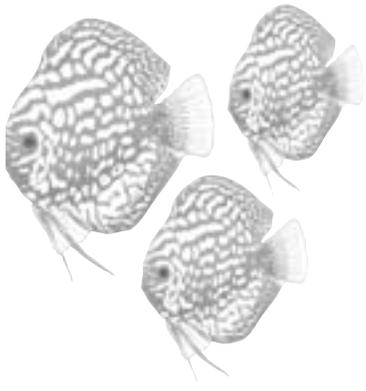
CREATE A POEM

Write a poem about rainforests, using any writing style and preference.



A large writing area consisting of 18 horizontal lines. The background features faint, light-colored illustrations of bubbles and rainforest plants like ferns and broad leaves.

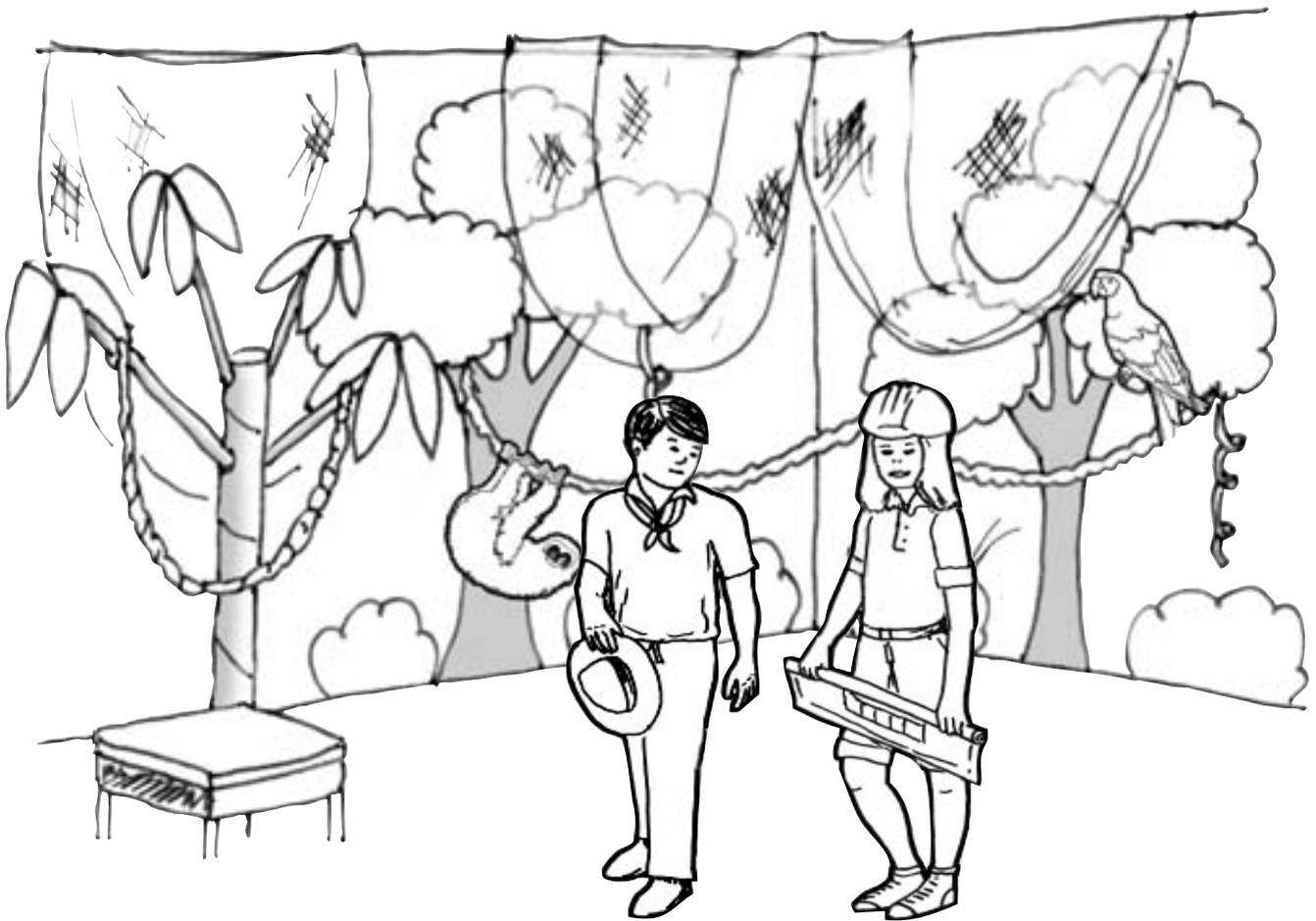
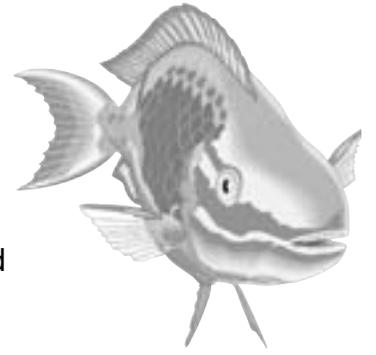


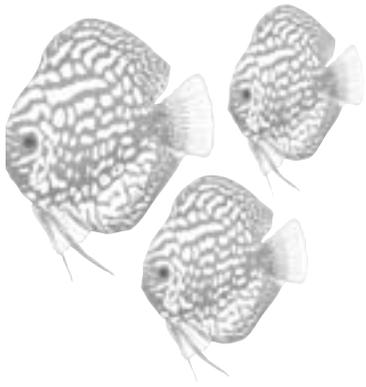


ACTIVITY #19

PLAY ALONG

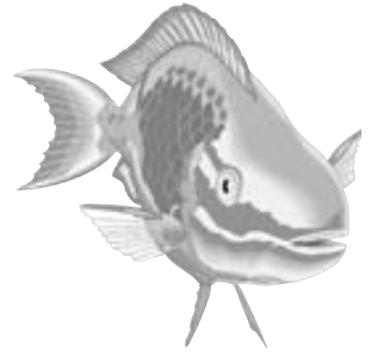
Saving the rainforest calls for teamwork. Students will break into small groups, assign jobs to each other, and write a very short play about how they will save the rainforest. Each student should be a character and bring in props to act the play out in front of the class.





ACTIVITY #20

COMICS



Be a comic strip artist. Students will take on the role of the *hero* and create a comic strip about the rainforest.

Here's an example:

FROGGY SAYS...



YOUR TITLE:

1

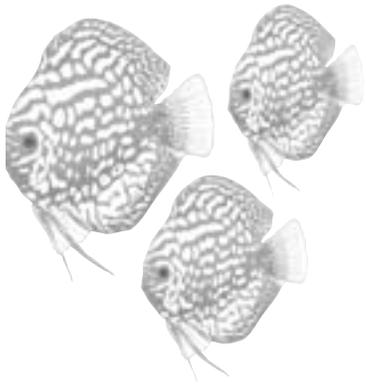
2

3

4

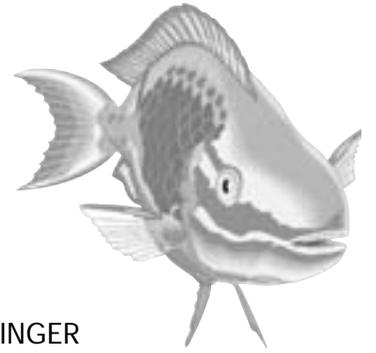
Draw your own comic strip in the numbered panels. Be creative with your hero.





ACTIVITY #21

WORD SEARCH



Search for the words listed below. Words can go up and down or across.

AMAZON
EARTH
INDIGENOUS
CONSERVATION
BRAZIL
COLOMBIA
SURINAME

ACT
MEDICINES
PLANTS
SHAMAN
ECOLOGICAL
ENVIRONMENT
SPECIES
IPECAC
ARBOREAL
ETHNOBOTANIST

EQUATOR
ECOSYSTEM
CLIMATE
FROG
EPIPHYTE
TRIBES
CANOPY
UNDERSTORY
BAMBOO
RAIN

NATIVE
TROPICS
BANANA
PAPAYA
MAHOGANY
ROSEWOOD
TEA
SANDALWOOD
VANILLA
PAPRIKA

GINGER
COCONUT
EMERGENT
PIRANHA
OXYGEN
TREES
DEFORESTATION
TOUCAN

Word search grid:

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A E P I P H Y T E M P P A R T R K O A
S L E N V I R O N M E N T N R O M S V
F A L D E T H N O B O T A N I S T C O
N C E I T Q Y A I I E C S A B E X L O
B Y V G N P M C T O U B R Y E W N I O
E N I E O A O A A O Q B R G S O N M B
C E T N Z P V S T C O Y N A G O H A M
O A A O Y R O T S R E D N U Z D C T A
L C N U E I M F E A O P E E N I U E B
O A L S M K A A R A A P I R G N L P R
G N N A A A L T O O N N I L O Y A O O
I O N N N S H E F O G N T C A E X B I
C M E D I C I N E S R N O R S U I O I
A H N A R I P Q D N E C A E T A G T N
L O O L U T U R E G N I G M N O H M E
I N S W S A C G R T N E C B A N A N A
R E R O T R E E S N C R I E L H R S N
T D C O L O M B I A Y A P A P N S P E
A N R D O E E N R A N A A O Z S E S N
  
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WRITE ON...

ACT's Official WRITING CONTEST!

Sharpen your pencils!
Get out your recycled paper!

Enter the official **Amazon Conservation Team Writing Contest** for Fiction and Non-Fiction categories. Winners will receive a prize and the winning stories will be posted on the ACT website (story and first name only). Stories will be collected twice a year—January 1 and June 1.

F.Y.I.

Here is what our judges will be considering when reading your entries:

1. SETTING

Which rainforest? Is the context vividly drawn?

2. PLOT

Does the story pull the reader in—and have a logical conclusion?

3. CHARACTERIZATION

Are the characters believable?

4. DIALOGUE (if used)

Does it sound natural?

5. STYLE, TONE, LANGUAGE

Does the writer write to *all* senses?



OFFICIAL ENTRY FORM

Name _____ Story Title _____

Street address _____

City _____ State _____ Zip _____

School _____

Parental consent (signature) _____

All entries are confidential. Any information disclosed on the entry form will not be shared outside of ACT.

SEND TO: The Amazon Conservation Team
ATTN: ACT WRITING CONTEST
4211 N. Fairfax Drive
Arlington, VA 22203

GLOSSARY

ACT A group of people working hard to help the indigenous people—local women, men and children—who live in the rainforest.

Canopy The cover formed by the leafy upper branches of the trees in a forest.

Conservation The careful utilization of a natural resource in order to prevent depletion.

Deforestation To divest or clear of forests or trees.

Ecosystem An ecological community together with its environment, functioning as a unit.

Emergent The tallest trees are the emergents. They can tower as much as 200 feet above the forest floor.

Equator The imaginary great circle around the earth's surface, in the middle of the poles.

Ethnobotanist A scientist who studies the relationship between plants and people.

Rainforest A dense evergreen forest occupying a tropical region with an annual rainfall of at least 2.5 meters (100").

Shaman A respected member of a tribe who studies rainforest medicines and passes down information to younger generations.

Suriname A country of northeast South America on the Atlantic Ocean.

Tropics The geographic region of the Earth, centered on the equator, where the sun reaches a point directly overhead at least once a year.

Climate The conditions of a region, including temperature, precipitation and wind, that are characteristic of a specific place.

Endangered A species present in such small numbers or whose numbers are decreasing so rapidly that it is at risk of extinction.

Indigenous Originating and living naturally in an area of environment.

Slash-and burn When an area of forest is cleared by cutting and burning.

Tributaries A stream that flows to a larger stream or other body of water.

Understory An underlying layer of vegetation, especially the plants that grow beneath a forest's canopy.

RESOURCES

Amazon IMAX DVD, 2-Disc Large Format WMVHD Edition

Tales of a Shaman's Apprentice: An Ethnobotanist Searches for New Medicines in the Amazon Rain Forest by Mark J. Plotkin

Medicine Quest by Mark J. Plotkin, PhD

A Neotropical Companion by John Kricher and Mark Plotkin

The Natural History of Medicinal Plants by Judith Sumner and Mark Plotkin

Sustainable Harvest and Marketing of Rain Forest Products by Scott Mori, Mark Plotkin, and Lisa Famolare

[The healing forest: the search for new jungle medicines.](#) An article from: *The Futurist* by Mark J. Plotkin

The Green Pharmacy by Mark Plotkin



In an effort to help parents raise healthier kids and to encourage them to make a difference in the world early on, Nature's Path offers nutritious, organic breakfast cereals and snacks that also give back to the environment with the EnviroKidz line.

EnviroKidz products are made only from organic foods and do not contain any Genetically Modified Organism (GMO) ingredients, artificial colors, flavors or preservatives. They have more whole grains and less sugar, fat and sodium than many conventional options.

Kids also help the planet with each bite of EnviroKidz products—1% of sales are donated to endangered species protection, habitat conservation and environmental education for kids. Nature's Path works with organizations such as The Amazon Conservation Team, The Lemur Conservation Foundation, The Defenders of Wildlife, The Wildlife Trust and The Dian Fossey Gorilla Foundation.

For fun activities and facts about some of the animals the EnviroFund helps protect and to find out how you and your students can help make a difference, visit the EnviroKidz website (www.envirokidz.com).



Eco-thumb [ek'ō thŭm] *n*: One whose environmental awareness is so conscious that it has become a way of life.

It's believed that there are certain people who possess a power over plants, some innate ability to make them grow—more commonly known as a “green thumb”.

Since a story's origin is never fully certain, we considered the original tale of King Edward I of England, a king known to be fond of green peas. It is believed that he kept half a dozen serfs shelling peas during the season—and the king would handsomely reward the serf who had the greenest thumb.

Maybe the truth is in the handful of similar stories that followed, maybe we are meant to draw our own conclusions or just never really know for sure.

At Eco-thumb Publishing, here is what we *do* know: We all have the power to be green—green on your thumb, green in your heart, green in your life. We believe that we have the power to change, to promote growth, like a tree, an idea, or for us, a growing mind. We believe that the words eco-thumb and green thumb are meant to work in unison. We know that people who live on Earth can also learn to live in it—and ultimately we all might one day have the fortune of possessing an eco-thumb.

Correctly used in a sentence: Katie started a recycling club at her school; after that, her friends all said she had an eco-thumb.



The Amazon Conservation Team (ACT) is working hard to protect the rainforests of tropical America. Rainforests are important—not just to those who live in them, but to everyone on the whole planet. They help control the world's climate. Many of our medicines come from plants that grow in rainforests. Perhaps someday the cure for cancer will be found in a tropical rainforest.

Each year, the Amazon rainforests face grave threats to their survival. When a rainforest is destroyed, the climate changes very quickly. Without protection from the trees' leaves, the rainforest soil will dry out in the sun. When it rains, the soil will get washed away, leaving the land empty like a desert. A rainforest cannot be replaced. Once it has been destroyed it will be gone forever.

ACT is trying to help the indigenous people of the rainforest—the local women, men, and children—to protect their homes and forest culture. ACT works with them in the South American countries of Brazil, Colombia and Suriname to protect and preserve their culture, their health and the rainforest. When ACT succeeds, Earth wins.

The forest has a voice. But it needs you to be heard.

For more information, please visit
www.amazonteam.org or www.myspace.com/amazonconservationteam