

# RAINFORESTS FOREVER!

A curriculum supplement for grades 3-6 by Rainforest Action Network

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# INTRODUCTION

Thank you for incorporating the *Rainforests Forever!* curriculum packet into your rainforest unit. Since many excellent materials currently exist that educate students about the wonders of the rainforest, Rainforest Action Network (RAN) has taken the initiative to develop and share *Rainforests Forever!* as a supplement to these materials. Please use this packet with other environmental or rainforest-related lesson plans you already have.

*Rainforests Forever!* focuses on three areas that can directly save the rainforests—wood-use reduction, oil-use reduction, and beef consumption reduction. Because logging, oil drilling, and cattle ranching are three of the main causes of rainforest destruction, it is critical that students understand the connection between the products they consume daily and rainforest loss. It is also important that students understand the power they have to make a difference and help save the rainforests. To this end, the lesson plans and worksheets in *Rainforests Forever!* additionally serve to empower students with simple actions they can take to reduce wood and oil use and beef consumption in their daily lives.

Just like the diversity found in the rainforests, your students possess a diversity of learning styles and ways of knowing. With that in mind, RAN has taken an inter-disciplinary approach with *Rainforests Forever!* that not only incorporates Natural Science concepts, but also includes Language Arts, Mathematics, Physical Education, Fine Arts, Performing Arts, and Social Studies. Moreover, in line with new theories regarding human understanding, the activities are designed to challenge the students’ “Multiple Intelligences.” (Suggested reading by Howard Gardner: *Frames of Mind: The Theory of Multiple Intelligences*, 1983; *Multiple Intelligences: Theory in Practice*, 1993, Basic Books, New York.)

You will find that the required materials are budget-friendly—as well as rainforest-friendly! Also, because some of the activities need time for set-up, *Rainforests Forever!* includes several fun, short, self-explanatory word and math exercises for students to complete in preparation for the more interactive lesson plans.

With one hundred acres of rainforest being destroyed every minute and up to one hundred species going extinct every day, it is imperative to educate and empower *everyone* about the rainforests and what they can do to help while there is still time left. Teaching and empowering children about this critical issue is a great place to start. If you have any questions about this packet or suggestions to make it more effective, please call Rainforest Action Network at (415) 398-4404.

Thanks for doing such important work!

Tamar Hurwitz  
Education Outreach Director

*Rainforest Action Network works to protect the Earth’s rainforests and support the rights of their inhabitants through education, grassroots organizing, and non-violent direct action.*

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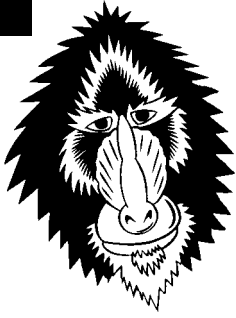
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# FACTS ABOUT OIL



Many products that we use every day—including gasoline, styrofoam, and plastic—are made from oil. The oil used to make these products often comes from beneath the ground in the rainforests. Removing the oil from the ground, or *drilling* for oil, is very harmful to the rainforest. In fact, drilling for oil is one of the main causes of rainforest destruction worldwide.

Oil, or *petroleum*, comes from the fossils of dinosaurs and plants that lived on Earth millions of years ago. Oil is often used to make fuels, called *fossil fuels*, including gasoline. Oil is also used to make plastic bags, bottles, and cups, styrofoam, synthetic fabrics like polyester and nylon, and even carpet.

Large oil companies drill for oil on millions of acres of rainforest. The companies then sell the oil in order to make money. There is nothing wrong with making money, but when companies destroy the rainforests to make money they destroy not only the forest, but also the lives of the animals and people who live in the rainforest.

Oil drilling harms the rainforests because trees are cut down to make room for oil roads, oil pipelines, and oil machinery. In some places, people then

move in along the roads and cut down even more trees. When these trees are destroyed, all the animals that lived in those trees are homeless. Without their forest home, many animal species face *extinction*, which means they could disappear forever like the dinosaurs.

Another problem is that when companies drill for oil, the oil is often spilled onto the soil and into rivers. *Indigenous peoples*—people whose families have lived in the rainforest for thousands of years—often become sick from the pollution. Sometimes indigenous peoples are pushed off of their lands, or displaced, by oil projects.

Oil also creates air pollution once it's turned into gasoline. Burning fossil fuels like gasoline (by driving cars and flying airplanes, for example) makes our air dirty and unhealthy to breathe. Many people get sick from breathing in too much of this *smog* or dirty air.

Burning oil and gasoline also makes the planet get warmer. This *global warming* creates *climate change*. This means that weather patterns around the world start to change in dangerous ways. Winters become colder, summers become hotter, and storms become fiercer and more frequent. These



changes in climate are hard on the forests. One third of the world's forests are threatened by climate change.

### Oil Is Not Necessary

Even though oil and oil products are currently used to drive our cars, fly our planes, operate our factories, and warm our homes, we really don't have to use oil for these things. Instead, we can use renewable sources of energy, like the sun and the wind. Energy from the sun and the wind is called *renewable energy* because it never runs out. Light and heat from the sun can be used to make *solar power* and windmills can be used to capture the power of the wind. The sun and the wind are great sources of energy because they don't destroy the rainforests or pollute the planet, and they will never run out!

We can also use things other than oil to make plastic, such as corn or the hemp plant. Since corn and hemp can be grown on farmland that has already been cleared for other crops, they do not hurt the rainforests or the planet when they are turned into plastic.

### What Can We Do To Help?

Until our main energy supply comes from renewable energies like the sun and the wind, many of us will need to use oil in our daily lives. By reducing the amount of oil we use, however, we can make a big difference for the rainforests. There are many ways we can reduce the amount of oil we use.

**First**, instead of driving our cars, we can walk, ride our bikes, carpool, and

take the bus, train, or subway whenever possible. We can also write to automobile companies asking them to make cars that run on alternative fuels that do not come from oil.

**Second**, we can use energy from the sun as much as possible. We can hang our laundry outside to dry, warm up special bags of water for fun solar showers, and ask our parents to install solar heating panels. Although solar panels may be expensive to buy, over time they'll save a lot of money—and they'll help save the rainforests!

**Third**, we can use less plastic by using glass, ceramic, metal, and cloth instead. Take a cloth bag with you to the market and use it instead of using a plastic grocery bag. Use a glass or a ceramic mug to drink from instead of plastic cups, and buy drinks in glass bottles instead of plastic bottles. If you do use plastic containers, make sure to reuse them as much as possible before recycling them.

**Fourth**, we can wear clothing that is made from natural fibers like cotton, hemp, or wool instead of from petroleum-based synthetic fibers like nylon, polyester, and acetate.

**Fifth**, we can speak out and let oil companies know how we feel. We can tell them to provide clean, renewable energy that comes from alternatives like the sun and wind. We can ask them to please stop exploring for oil in the rainforests, and tell them that we treasure the rainforests and all the things that live there. We can let them know we really care!





# Rainforests Forever!

## GLOSSARY

- Amazon basin** The largest tropical rainforest in the world, spanning eight South American nations.
- agricultural waste (ag waste)** Farm leftovers like cornstalks, wheat straw, rice straw, hay straw, banana stalks, or sugarcane waste, that can be made into tree-free paper. Usually, ag waste gets buried or burned.
- alternatives** When you use a different item than something that's normally used. For instance, instead of using petroleum-based ink, an alternative would be to use ink that's soy-based or water-based.
- bagasse** Agricultural waste from the sugarcane that can be made into tree-free paper.
- bamboo** A fast-growing plant that can be made into tree-free paper.
- banana stalks** Agricultural waste from the banana plant that can be made into tree-free paper.
- beef** A type of red meat that comes from cows or cattle.
- boycott** When people stop buying products from a company that is doing something they don't like, in hopes that the company will change what it is doing. Boycotts only work when many people join together to do them.
- Brazil** The largest country in South America and home to 1/3 of the largest tropical rainforest in the world—the Amazon rainforest.
- carpool** When people get together to share a ride from one place to another (like to school, stores, or work). Carpooling saves gasoline since only one car is being used to transport people instead of several cars.
- cattle ranching** One of the main causes of rainforest destruction. Rainforest land is slashed and burned to clear away the trees so grass pastures can be planted for cows to eat. These cows then get slaughtered and sent to the United States and other countries to be turned into fast-food hamburgers, frozen meat products, and canned pet food.
- cattle ranching** One of the main causes of rainforest destruction. Rainforest land is slashed and burned to clear away the trees so grass pastures can be planted for cows to eat. These cows then get butchered and sent to the United States and other countries to be put into fast-food hamburgers and canned pet food.
- clear-cut logging** The act of cutting down all the trees in an area. Clear-cut logging is a quick way to get a lot of trees to use for wood, but it destroys the forest and ruins the home and lives of the animals—and indigenous peoples—living there.
- Congo (The People's Republic of)** African nation that is home to the third largest tropical rainforest in the world.
- conserve** To use less of something like gasoline or paper in order to save the natural resources it comes from. For example, conserving gasoline means less rainforest needs to be drilled for oil, and conserving paper means less trees need to be cut down to make paper.
- consumption** Taking or using items that come from natural resources. Oftentimes, wealthy countries like the United States and Canada have a high level of consumption compared to poorer countries like Ecuador or Nigeria. Overconsumption of natural resources has a negative effect on the planet—especially on the rainforests, since many of the products we consume (such as oil and wood) come from the rainforest.

**cornstalks** Agricultural waste from the corn plant that can be made into tree-free paper.

**Costa Rica** A small country in Central America that has already lost 90% of its rainforest to destruction—much of it due to cattle ranching. As a result of this loss, Costa Rica now works hard to protect the 10% of Costa Rican rainforest that remains.

**cotton** A crop used to make many things including fabric and tree-free paper.

**crude oil** The raw form oil takes when it is first drilled out from the Earth.

**currency** Another name for paper money. Old currency that is recycled can be made into tree-free paper.

**deforestation** When a living forest is destroyed due to things such as logging, cattle ranching, or oil drilling.

**denim** A coarse cotton or hemp fabric used to make blue jeans. Denim scraps can be used to make tree-free paper.

**diet** The food that a person or animal usually consumes.

**douglas fir** An evergreen tree that grows in the temperate rainforest of northwest North America. Often used as timber for wood products.

**ebony** An endangered tropical tree that has very dark wood.

**Ecuador** A small country in South America, right near the equator, that contains part of the Amazon rainforest. Much of the rainforest destruction in Ecuador is due to oil drilling.

**endangered** When a species or habitat is threatened with extinction. For instance, the spotted owl is endangered with extinction due to the logging of the temperate rainforest in the US Pacific Northwest where it lives.

**extinction** The total dying out of a species of animal, plant, etc.—whether due to natural and/or human-made causes.

**fiber** The material in a plant that allows it to be made into paper or clothing. Fiber is what holds it all together.

**flax** A plant with blue flowers that can be turned into linen fabric or tree-free paper.

**food chain** The feeding relationships among organisms. A hierarchy or pecking order of different living things, each of which feeds on the one below. For instance, a jaguar eats a bird which eats an ant which eats a berry from a tree. Eating lower on the food chain (i.e. eating a plant-based diet versus an animal based diet) is good for our health and the environment.

**fossil fuels** Another name for the gasoline and fuel oils that come from petroleum. So named because they came from the fossils of dinosaurs and plants that lived on Earth millions of years ago.

**habitat** The natural environment in which an animal or plant lives or grows. Without their habitat, many species will become extinct.

**harvest** To gather something that has been growing such as nuts, corn, or hay.

**hay straw** Plants such as grass or alfalfa that can be used to make tree-free paper.

**hemp** A tall plant easily grown as a crop that can be turned into many things like food, fuel, plastic, fabric, rope, and tree-free paper. The Declaration of Independence was written on hemp paper.

**indigenous peoples** The original, native peoples that have lived in the same area for thousands of years. Native Americans such as the Hopi and Cherokee are the indigenous peoples of the United States.

**Indonesia** Island nation in Southeast Asia that is home to one of the largest tropical rainforests in the world.

**jelutong** A tropical rainforest tree from Southeast Asia that is used to make pencils. Alternatives to jelutong pencils include those made of graphite or

sustained incense cedar.

**kenaf** A plant that can be made into tree-free paper. Kenaf can be grown like a crop on former tobacco plantations in the Southeast US.

**landfills** A way to get rid of garbage by burying it in the ground. A good way to reduce the overflow of landfills is to reuse and recycle items instead of throwing them in the trash.

**large-scale agriculture** One of the main causes of rainforest destruction. Large areas of rainforest are often cleared to make room for plantations that grow crops such as bananas, oranges, or coffee. "Commercial agriculture" is another term for this.

**logging** The act of cutting down trees to use them for wood products.

**mahogany** An endangered rainforest tree from South and Central America and Africa that is used to make furniture.

**mass transit** A system of transportation that is meant to carry many people at once. Buses, trains, and subways are forms of mass transit. Using mass transit instead of your own car helps conserve oil and gasoline.

**natural resources** Things from nature like trees or oil that we use in our daily lives. Some natural resources like oil are non-renewable which means that once they are used up, there will be no more. Many people feel it is important to conserve our natural resources now for future generations and for the sake of nature itself.

**nutrition** What our bodies need to be healthy and alive. Nutrition comes from eating a balance of foods that contain protein, carbohydrates, fats, vitamins, and minerals. Plant-based foods that are natural, organic, and closest to their whole, unrefined state are often healthiest

for our bodies and contain the highest nutrition.

**oil drilling** The act of getting oil from beneath the ground. Oil drilling involves a lot of machinery and oftentimes destroys the area in which the drilling occurs.

**oil exploration** The act of trying to find more oil beneath the ground. Oil exploration often involves the explosion of dynamite and building of roads, and can destroy natural areas.

**old growth forest** A forest that is very old with trees that are hundreds and sometimes thousands of years old. Almost all of the old growth forests in the United States have disappeared due to logging.

**origin** Where something first comes from. For instance, the origin of vanilla is the tropical rainforests since that is where the vanilla plant naturally grows.

**organic** Another word for "natural" or "living." When fruits, grains, or vegetables are labeled organic it means they were grown using natural methods that do not include the use of chemical fertilizers or toxic pesticides.

**People's Republic of Congo, The** Refer to Congo.

**petrochemicals** Chemicals that come from petroleum. These chemicals are used in many products such as cosmetics, chewing gum, clothing, and plastic products. Petrochemical products are unhealthy for the planet and our bodies.

**petrol** Another word for gasoline.

**petroleum** A thick, dark, flammable liquid that occurs naturally beneath the Earth and is processed into such products as natural gas, gasoline, kerosene, and fuel oils.

**plant-based** A way to describe something that comes from plants. A plant-based diet is one that is filled with fruits, seeds, grains, legumes, and vegetables that all are grown from plants.

**plastic** A multi-purpose material, typically made from petroleum. Alternative sources for plastic include corn, hemp, and seaweed.

**pollution** When harmful waste products enter the air, water, or earth. The main cause of air pollution is the burning of oil and gasoline by factories and cars.

**post-consumer waste** The material (paper or plastic) that is left over once someone is done using it. For example, magazines, phonebooks, "junk mail," and old homework are some paper items that would be considered post-consumer waste.

**preservation** When a natural area is totally protected and kept intact.

**pulp** The moist, wet mass that comes from a tree or from a plant like kenaf when it is ground up and moistened for the purpose of making paper.

**recycle** To recover useful materials from something instead of throwing it in the trash. For instance, the paper in newspapers can be recovered and recycled into new sheets of paper.

**red meat** Another name for beef. Red meat is so called because of its red color. Red meat can come from a variety of animals such as cows, deer, buffalo, and lamb. Most red meat consumed in the United States comes from cows or cattle.

**reduce** To use less of something. This is often done in an effort to conserve natural resources. For instance, reducing the amount of paper you use helps conserve trees.

**redwood (coastal)** Tall, strong, and sometimes ancient temperate rainforest tree often used for building materials, hot tubs, or lawn furniture.

**renewable resource** A natural resource like the sun or wind that can be used again and again without ever running out.

**reuse** The act of using something again and again instead of throwing it away. Glass bottles and cloth bags are examples of things that can be reused over and over.

**rice straw** The agricultural waste of the rice plant. Rice straw can be made into tree-free paper and is often used for paper-making in countries such as China and India.

**rosewood** An endangered tropical rainforest tree that is used to make furniture.

**sandalwood** A tropical rainforest tree from Asia with a fragrant aroma that is used in cabinet-making, wood carvings, and perfume.

**seaweed** A sea vegetable full of nutrients that can also be used as an alternative to trees and oil for making products such as paper and plastic.

**sitka spruce** An evergreen tree that grows in the temperate rainforest of the US Pacific Northwest and is often logged for wood products.

**solar power** Using the sun for energy instead of using oil or gas. Solar power is a non-polluting form of energy that comes from a renewable resource. Hanging clothes to dry in the sun is one way of using solar power.

**species** Living things such as plants and animals.

**sustainable** To be able to use something over an endless period of time in a way that does not destroy the environment. Wind power and solar power are sustainable forms of energy.

**sustained incense cedar** A cedar tree that comes from a forest that is not destroyed in the process of logging. An alternative to jelutong for making pencils.

**synthetic fibers** Fabrics like polyester, nylon, acetate, and acrylic that come from petrochemicals. Synthetic fibers are fibers that are human-made versus fibers such as

cotton, silk, wool, and hemp that are made in nature.

**teak** An endangered tropical tree from Southeast Asia that is used to make furniture and picture frames.

**temperate rainforest** A type of rainforest that gets cold. Temperate rainforests are found in places such as Canada, New Zealand, Chile, and the US Pacific Northwest. Trees can grow to be two thousand years old in temperate rainforests.

**tree-free** A way to describe paper products that come from plants other than trees. Tree-free paper can be made from plants like kenaf or from farmers' leftovers called agricultural waste.

**tropical rainforest** A warm, humid forest with at least 100 inches of rainfall a year, that is found around the equator in places like South America, Southeast Asia, and Africa. At least half of all the world's animals—and millions of indigenous peoples—are found in the tropical rainforests. Tropical rainforests might disappear in our lifetime if we don't act now to save them.

**virgin forest or primary forest** A natural, ancient forest that has been around for thousands of years and that hasn't been harmed by logging, mining, road-building, or development. More than three-fourths of the Earth's primary forests have already been destroyed due to humankind's activities.

**wheat straw** Agricultural waste from the wheat plant that can be made into tree-free paper.

**wind power** Using the wind for energy instead of using oil or gas. Wind power has been around for centuries (think of Dutch windmills, for example) and is a rainforest-friendly way to meet our energy needs. The wind is a clean and renewable

form of energy.

**vegan** A totally plant-based diet that does not include any animal products like meat, dairy, or eggs. Studies have shown that a balanced vegan diet of fresh, natural foods is one of the healthiest ways to eat.

**vegetarian** A diet that does not include any meat, chicken, or fish but can include dairy and eggs.

# GARBAGE BAG LUNCH

**Objective:** Students will learn how everyday lunches affect the rainforests and how alternatives can replace and/or conserve wood-based and oil-based products.

**Base of Knowledge:** *Rainforests Forever!* glossary and fact sheets: *Facts About Wood* and *Facts About Oil*

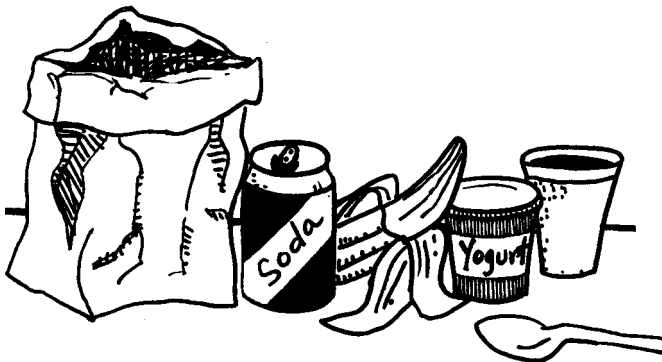
**Vocabulary:** alternatives, natural resources

## Materials:

- blank index cards
- marker pen
- reused/scrap paper (minimum 1 sheet per 2 students)
- pencils (1 per student)

## Lunch Items:

- paper lunch bag
- plastic yogurt cup
- plastic sandwich bag
- paper napkin
- plastic spoon
- styrofoam cup
- banana
- aluminum soft drink can



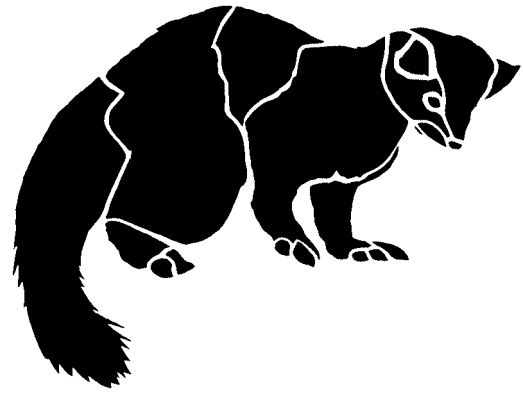
**Grade Levels:** 3rd-6th

**Time for Activity:** 45-60 minutes

**Subject:** Science, Social Studies

**Intelligence Capacities:** Visual/Spatial, Interpersonal, Naturalistic

**Focus:** Wood-Use Reduction, Oil-Use Reduction



## Set-up:

Put all the lunch items in the paper lunch bag. On one side of an index card, write the words listed below (one per card)—with the origin of the product on one side and the name of the item itself on the other. Put these cards aside until later.

## Item:

banana

paper napkin

paper lunch bag

aluminum can

plastic spoon/cup

styrofoam cup

## Source:

rainforests

tree

tree

bauxite mined from rain forests and other places

petroleum extracted from rainforests and other places

petrochemical product

## PRESENTATION:

1. Ask the students what's in their lunches today. Upon hearing all the marvelous responses, act as though you are famished, exaggerating as much as you like. Reveal your special bagged lunch. Pretend to eat and drink, relishing your lunch and tossing the trash leftovers on the ground as you chat with your audience. By this time, students should have commented on your litter. If not, ask them "What's wrong with this picture?" to evoke a response regarding the litter.
2. After picking up the litter, divide students into groups of 2-3. Bring out the index cards and have the students match the lunch items with the appropriate natural resource. When they are ready, review the natural origins of all the objects, reminding them how over-consumption of wood-based and oil-based products causes destruction of the rainforests

and their inhabitants. This is a good opportunity to discuss landfills, conservation, preservation, and tree-free paper.

3. Invite the students to think of alternatives they can use for their lunch that would put less demand on the rainforests. With paper and pencils distributed, encourage them to come up with three days' worth of lunch bag menus, emphasizing the types of containers to be used (see enclosed list for ideas).
4. Have each group share their ideas with the class. Congratulate them on coming up with these ideas and wise choices that will help temperate and tropical rainforests, and encourage them to do what they can to bring rainforest-friendly lunches to school!

### Extensions:

- Create a display for the school. Make signs that show which products are taken from which natural resource. Include alternative products and ways to conserve. Put the display in the cafeteria or in school halls near the cafeteria.
- Spend an hour at a local park or beach picking up litter. Try to determine how much of the litter found could've been recycled or reused. Perhaps some of the litter can be turned into an art project or sculpture.
- Compute and compare prices for lunch items and lunch containers. For example, how much does a year's worth of potato chips cost when purchased in snack-sized bags versus larger bags? Also, what is the cost of paper lunch bags versus the cost of a reusable container such as a cloth bag or wicker lunch basket?
- Challenge students to bring lunch to school for one week that is as rainforest-friendly as possible. Extend this challenge to one month and then to the entire school year!
- Collect all non-food waste for one week and analyze it. Ask the students what else could have been used.

**Resources:** Wyman Center, Inc.

### Rainforest-friendly alternatives for lunches:

#### Instead of using:

plastic sandwich bag  
aluminum foil  
aluminum cans  
styrofoam cup  
paper napkin  
yogurt cup  
convenience foods and  
ready-made lunch meals  
paper bag

#### Use:

reusable container  
reusable container  
canteen or thermos  
reusable cup  
cloth napkin  
reusable container  
bulk items in re-usable containers  
wicker basket or cloth bag

# PETRO RETRO

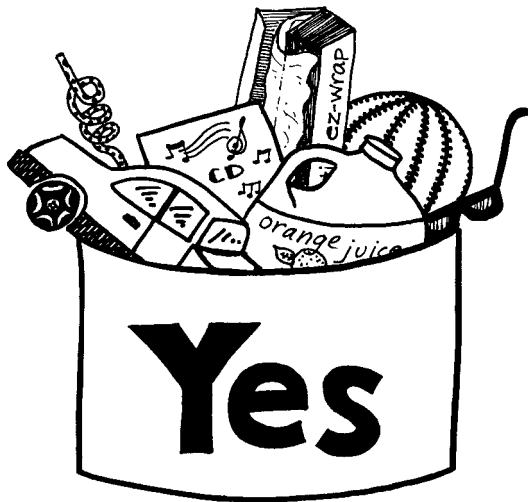
**Objective:** Students will develop awareness of the use of oil in everyday living and will explore ways to reduce oil consumption.

**Base of Knowledge:** *Rainforests Forever!* glossary and fact sheet: *Facts About Oil* (For additional information on oil and its impact on rainforests, please visit Rainforest Action Network's website: [www.ran.org](http://www.ran.org))

**Vocabulary:** alternatives, crude oil, natural resources, petrochemicals, petroleum

## Materials:

- 2 clean oat or coffee cans; one with a sign saying "NO" and one with a "YES"
- magazine pictures of various items—minimum 1 per student—which either use oil or require oil to be created (see list of examples)
- *Rainforests Forever!* fact sheet: *Facts About Oil*
- index cards or scratch paper folded to index card size—for pictures of items
- glue or tape



**Grade Level(s):** 3rd-6th  
**Time for Activity:** 45-60 minutes  
**Subject:** Science, Social Studies  
**Intelligence Capacities:** Visual/Spatial, Interpersonal, Naturalistic  
**Focus:** Oil-Use Reduction



## Set up:

Cut out magazine pictures which feature oil-based products, or things that require oil to function. Glue or tape these pictures to the cards.

## PRESENTATION:

1. With students seated on the floor, discuss what oil is, where it can be found, and what kind of effects oil production and oil use have on the environment. Ask them to name some ways that oil is used (e.g. transportation, heating, plastic production).
2. Explain that they will be answering some fun quiz questions. Pass out one picture to each student and encourage them to think about all that went into producing those items.
3. Quiz the students with the following questions:
  - ✓ Does oil play any kind of role in the item?
  - ✓ Was oil used to make the item?
  - ✓ Does the item use oil?
 They are to decide between "YES" or "NO" responses. One by one, ask them to come up to the two containers; as they place the cards in the chosen container, encourage them to explain their reasoning. They might just consider the usual perception (e.g. "NO" for a bicycle because it doesn't run on fuel and it's mostly made of steel—even though it has some plastic parts)—that's fine; save the surprise (that they all use or require oil) for later.
4. When all the cards have been deposited, ask various students to pull cards out of the "NO" container. Ask the class—or perhaps the student who deposited it—whether they think "NO" is correct. Ask "Why?" or "Why not?"

Eventually, all the cards will be in the “YES” can, with the class able to explain why. The goal is to help them see how such products as polyester, pens, lipstick, and CDs all either have crude oil as their origin or use oil in the manufacturing or transportation process.

5. For discussion, ask the following questions:
  - ✓ What are some alternatives to oil use?
  - ✓ How can we reduce our oil use at school, at the store, and at home?
  - ✓ What are some examples of non-petro-based plastics? (corn-based items)
  - ✓ How can we help make those plastics more popular and affordable? (For older students, this could lead into an interesting discussion about “supply and demand.”)
6. In closing, explain that though many things use oil (like the plastic in a bicycle seat or in a reusable container) it is okay to use these products when they ultimately help us reduce overall oil consumption. For instance, riding a bike, even though it contains plastic, still helps reduce oil use since a car isn't being driven. Reducing oil consumption is not always a black or white issue and it is important to make this distinction so that students can become critical thinkers about this topic and how their choices make a difference.

**Extensions:**

- Have students do a research paper on emerging alternatives to oil-based products. Topics could include plant-based cosmetics and plastics, solar and wind power, or the history of certain cultures before the use of petroleum-based products (i.e. What did the ancient Egyptians use for transportation, clothing, cosmetics, and containers?)
  - For those students that watch television, ask them to watch a half-hour program and examine each commercial during that period. Have them note what product is being sold and if any part of it contains or uses petroleum. Share their findings with the class.
  - Create a flowchart or mural, tracing the story of how drilling for oil leads to the production of a manufactured item. Feature the effects on a particular rainforest and its inhabitants (i.e. indigenous peoples and species of animals and plants) as a result of this oil drilling.
- Hold a plastic-litter sculpture contest, using plastic objects the students found while picking up litter. So that everybody wins, feature awards such as “Greatest Plastic Diversity” and “Oiliest.”
  - Trace the approximate energy costs—including transportation—of a single plastic item (e.g. plastic packaging for a gift).

# FIGURING IT ALL OUT

**Objective:** Students will learn about the rate of destruction occurring in temperate and tropical rainforests and develop math skills by calculating the number of acres being destroyed.

**Base of Knowledge:** *Rainforests Forever!* fact sheets: *Facts About Wood*, *Facts About Oil*, *Facts About Beef*

**Vocabulary:** alternatives, biodiversity, clear-cutting, extinction, species

## Materials:

- map, globe, or poster of a tropical rainforest
- 7-10 pictures of species (reptiles, insects, birds, mammals, flowers, trees, etc.) from a particular tropical rainforest region
- 2-3 pictures of rainforests, including two that shows deforestation (visit [www.ran.org](http://www.ran.org) for photos)
- writing utensils and reused paper for each student
- chalkboard or dry-erase board
- 4 square feet of cloth, paper, or floor space
- 100 lentil beans
- four reusable bowls

### A typical four square mile patch of tropical rainforest contains as many as:

1500	<i>species</i> of flowering plants
750	<i>species</i> of trees
125	<i>species</i> of mammals
400	<i>species</i> of birds
100	<i>species</i> of reptiles
60	<i>species</i> of amphibians
150	<i>species</i> of butterflies

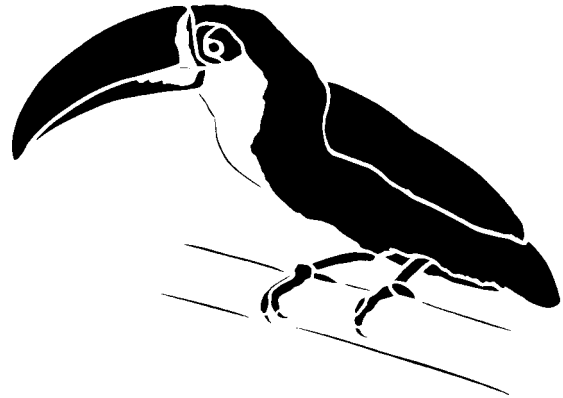
**Grade Level(s):** 3rd-6th

**Time for Activity:** 60-75 minutes

**Subjects:** Mathematics, Science

**Intelligence Capacities:** Mathematical/Logical, Visual/Spatial, Interpersonal, Naturalistic

**Focus:** Wood-Use Reduction, Oil-Use Reduction, Beef Reduction



## Set-up:

On the chalkboard, copy the table of statistics provided below. Place the visual materials on the board or a nearby wall for students to view. Spread the sheet of cloth or paper on the floor, or create a 4 square feet space on the floor with clear boundaries. Pass out writing utensils and paper.

## PRESENTATION:

1. Incorporating previous rainforest studies, remind students that rainforests are biodiverse and species rich. Holding the rainforest picture(s), explain that when an area of the rainforest is damaged or destroyed, the effects are astonishing. For example, clear-cutting a rainforest or slashing and burning it—whether for wood products, oil pipeline pathways, or cattle ranching—has a dramatic impact on wildlife as they will soon learn.
2. Review vocabulary words with the class and ask them to name some tropical rainforest animals and plants they know.
3. Show the class the sheet on the floor and explain that the sheet represents a typical four square mile patch of tropical rainforest. If students don't quite understand that size, compare it to your local downtown area, airport, farmland, etc.
4. Ask four volunteers to randomly place the 100 lentil beans on the sheet and ask four others to place bowls on top of the beans in random fashion.
5. Now explain that each bean represents one different reptile.
6. Ask students what they think the bowls symbolize, and then explain that each bowl represents a clear-cut or otherwise destroyed

rainforest area. Show the deforestation pictures.

7. Divide the class into four groups and ask each group to choose a bowl to investigate. Ask students to answer the following:
  - ✓ How many beans are left under their bowl?
  - ✓ How many reptile species were affected by the destruction of that area?
8. Ask the students to now imagine that each bean represents fifteen different species of flowering plants. Ask them to figure out how many flowering plant species were affected by the destruction of that area.
9. Using the table on the board, have them figure out the effect the destruction had on all the remaining species. If this math becomes too difficult, then skip ahead.
10. Now explain to students that rainforests are being destroyed at a rate of 1.5 acres every second—about the size of a football field. With 1.5 acres per second as the key, ask them to answer the following:

**How many acres are being destroyed:**

- ✓ Every minute?
- ✓ Every hour?
- ✓ By the end of the class period?
- ✓ By the end of the school week?
- ✓ In 15 days?
- ✓ In one month?
- ✓ By the end of the school year?
- ✓ In one complete year?
- ✓ By the year 2010?

11. After reviewing the answers, have a discussion regarding the ways students can save the rainforests by using alternatives to wood and oil and by eating less beef. Since logging amounts to 25% of rainforest destruction worldwide, how many rainforest acres could be saved in one year if the whole world reduced its wood use by one quarter? Also, since one quarter pound hamburger destroys 55 square feet of rainforest, how many acres of rainforest could be saved in one week, month and year if someone who normally eats 4 quarter pound hamburgers a week only eats half that amount? Have

students figure this out or do the math for them on the board.

**Extensions:**

- Compute the math exercises in metric terms.
- List these rates of destruction on a mural and illustrate both the negative and positive impacts humans can have on rainforests (for instance, clear-cutting a forest versus growing kenaf or using agricultural waste for paper products).

# MIGRATION SIMULATION

**Objective:** Students will identify the negative effects of oil drilling and logging on migratory bird habitats. They will develop solutions that will help endangered rainforest habitats.

**Base of Knowledge:** General migration information; *Rainforests Forever!* fact sheets: *Facts About Wood, Facts About Oil, Facts About Beef*

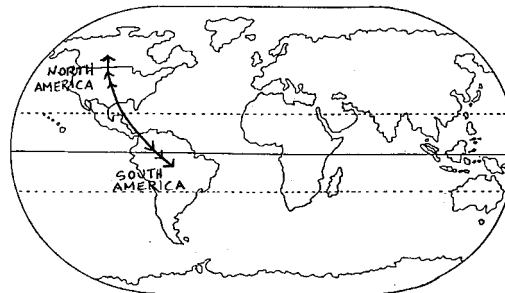
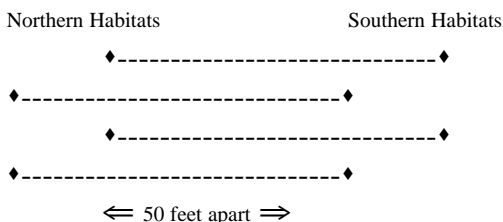
**Key Vocabulary:** migration, responsibility, habitat, nesting grounds, simulation

**Materials:**

- cardboard placards or carpet samples (free from carpet stores)—one for every 2 students
- tropical rainforest bird pictures (optional)
- list of positive and negative impacts humans have on bird habitats (refer to attached list)
- map of the Western hemisphere showing flight routes (shown on this page)
- gym or playground with space to run

**Set-up:**

1. On the playground or gym floor, create two lines of placards that are 50 feet apart. These lines represent Northern and Southern habitats. Placards in each habitat should be placed in a zig-zag pattern about 3-6 feet apart. Depending on the number of students, each habitat should have 4-8 placards.



Here are some examples of Canadian and US migratory birds and their Southern habitats.

Yellow Warbler	Central America
Eastern Kingbird	South America
Western Kingbird	Mexico and Central America
Barn Swallow	South America
Common Yellow-Throat	Mexico, Central America, West Indies

**PRESENTATION:**

- Explain to the students that many species of birds need to migrate to particular areas as part of their nesting and feeding stages of life. Their habitats—Northern and Southern—are shrinking or being destroyed entirely by the effects of human action—namely large-scale agriculture and cattle ranching, logging, and oil and mineral extraction.
- Review the concepts of migration and habitats. (*Note:* These concepts may be taught now or else act as a review to previously taught migration lessons.)
  - ✓ Why do animals migrate?
  - ✓ Are there humans who migrate when climates change?
  - ✓ What makes a habitat complete for creatures living on Earth? (clean space, shelter, soil, water, food, air, and sunlight).
- Show the migratory map and pictures (or names) of specific birds, helping the students identify which ones travel which routes.
- Explain the rules of the game:
 

The placards represent bird habitats in either the Northern or Southern hemispheres. As a warm-up, have the students randomly “fly” from North to South for two minutes while practicing being birds (i.e. flap, tweet, preen, whistle, etc.). Then put two “birds” on each habitat. Have them touch at least one foot to

**Grade Levels:** 3rd-6th  
**Time for Activity:** 45-60 minutes  
**Subjects:** Science, Social Studies, Physical Education, Performing Arts  
**Intelligence Capacities:** Logical/Math, Interpersonal, Intrapersonal, Body/Kinesthetic, Naturalistic  
**Focus:** Wood-Use Reduction, Oil-Use Reduction, Beef Reduction

their habitat and explain that each person represents one thousand birds. Agree upon a signal that will let the “birds” know the seasons are changing and it is time to fly North or South. When they hear this signal, they are to fly safely to any habitat on the opposite side. Encourage them to think of the things they might see, hear, and feel as they migrate through the air.

- Prior to the second round of migration, ask the birds in the Northern habitat to identify examples of tropical rainforest destruction that has a negative effect on their Southern winter home (remind them to think in terms of wood-use, oil-use, and beef consumption). When a bird has correctly come up with one example (use the enclosed list as a guide) then remove one of the placards from the Southern habitat. Sound the signal for flight and let the birds migrate once again to the opposite side. Since there will be less placards than birds on the Southern side, some birds will become “homeless” and must sit on the sidelines until later. Since each bird represents 1,000 birds, ask the remaining birds how many birds were just lost due to rainforest destruction. If any birds are too aggressive in flight or landing, then they must forfeit their position to the other birds and sit on the sidelines instead.
- With the next round, ask for another cause of tropical rainforest destruction that affects habitat loss, but this time the question must be answered by the homeless birds on the sidelines (this keeps them included).
- With each new round, continue asking the homeless birds for causes of destruction that jeopardize their fellow birds’ nesting grounds, and continue removing one placard from the Southern region before the annual migration. Continue asking the students how many birds have lost their homes. Do this until all of the Southern habitats are removed.
- Since rainforest destruction is caused by human activity, ask all the birds what people can do to help protect these Southern winter habitats. Remind them of things like tree-free paper, reducing oil use, recycling, eating less beef, etc. As each solution is offered, a

placard gets put back into the Southern habitat, and birds that have been homeless are now able to fly back to their homes. (Note: Due to habitat loss, many birds face extinction, and once extinct they can never return, no matter how much habitat might have been recovered.)

- When all the birds have returned home, explain that with healthy habitats, birds can now parent a new generation of birds that will help restore bird populations to an ecologically viable number.
- End the exercise with cheers and chants like: Tree-free paper saves trees, which provide homes for the birds and bees!

**Positive and negative effects on Southern bird habitats:**

**Negative factors:**

- Logging to meet increased demand for wood-based paper.
- Clear-cutting to meet increased demand for wood building materials and furniture.
- Oil exploration and drilling to meet increased demand for gasoline used to power vehicles.
- Polluted rivers and streams due to oil leaks and spills.
- Oil extraction to make plastics for toys, cups, etc.
- Clearing rainforest land for cattle ranching.

**Positive Factors:**

- Reduction of logging due to demand for paper made from kenaf and agricultural waste.
- Reduction of logging due to alternative materials used for furniture and home building (such as earth or adobe, recycled materials, etc.)
- Reduction of oil use due to increased use of solar and wind power.
- Reduction of oil use due to increased production of non-petroleum plastics (e.g. from corn or hemp).
- Reduction of oil use due to increased use of mass transit, bicycling, and walking.
- Reduction of cattle ranching due to eating less beef.
- Creation of rainforest nature preserves.

**Extensions:**

1. Discuss habitat destruction in the Northern hemisphere and how it also affects bird populations.
2. Graph the decline in bird populations as habitat is lost. Correlate each drop in numbers with causes of rainforest destruction.
3. Write songs, raps, or poems for the migratory birds that depend on healthy rainforests (see “Rainforest Poetry” lesson plan).

**Adapted by:** Aquatic Project WILD, 1992

# TREE-FREE RELAY

**Objective:** Running a relay race, students will learn about alternatives that can help reduce wood use.

**Base of Knowledge:** *Rainforests Forever!* fact sheets: *Facts About Oil* and *Facts About Wood*

**Vocabulary:** agricultural waste, bamboo, hemp, kenaf, recyclable, reusable

## Materials:

- generous amounts (one pound per team of four students) of tree-free alternative fibers—items can include bamboo, cotton, hemp, cornstalks, and kenaf. Search the worldwide web or local yellow pages to locate outlets for these items. If any of these are unavailable, be inventive and use substitutes such as yard waste, old magazines, sticks, or yarn.
- 20-30 receptacles (e.g. used paper grocery bags or wastebaskets) that are big enough to hold all the items. Each team should have four receptacles.
- marker pen
- scratch paper
- tape

## Set-up:

For each team, place equal amounts of the various tree-free fibers in separate piles, aligned and spaced appropriately for a relay race. Decide on the distance to be raced and place the receptacles at the other end. Remember that each team is to focus on their own set of four receptacles. Label the receptacles with the name of each of the fibers being used or represented. (*Note: We recommend doing this in a gym or outside on a day that is wind-free.*)

**Grade Levels:** 3rd-6th

**Time for Activity:** 30-40 minutes

**Subjects:** Physical Education, Science

**Intelligence Capacities:** Kinesthetic, Interpersonal, Visual/Spatial

**Focus:** Wood-Use Reduction, Oil-Use Reduction

## PRESENTATION:

1. Discuss tree-free paper with the students. Ask them to suggest some alternative fibers that can be used instead of trees (i.e. agricultural waste like: banana stalks, cornstalks, wheat straw, rice straw, or sugarcane waste (bagasse), bamboo, cotton, denim, flax, hemp, retired paper currency, and seaweed).
2. Divide students into teams of four and ask them to choose a rainforest-related team name.
3. Show the teams the piles of alternative fibers on the ground and explain that each team's challenge is to place these piles of tree-free fiber into the appropriate receptacles on the other side. One student is responsible for one type of fiber. (If a team has less than four students, some will have to run twice.)
4. Give the teams two minutes to plan who runs first and who is responsible for which fiber.
5. When the teams are ready to race, remind them that they are racing to rescue the rainforest, and shout out the signal "TREE-FREE!" Only then are they allowed to gather up their fiber and run it across for placement in its proper receptacle. If any fiber drops while running, they must return to pick it up before placing it on the other side.
6. When each team has finished the race, they are to shout "TREE-FREE!" and wait for the other teams to finish. At this point, tell the students that even though team so-and-so finished first the *real* winner of this tree-free race was the rainforest!

## Extensions:

- For convenient recycling, make paper receptacles out of used boxes for school staff to put under their desks. Decorate with pictures of tree-free items like bamboo.
- Have students write to their favorite notebook company and ask it to make notebooks out of tree-free paper.
- Display commercially produced items that students can buy that are made from tree-free materials.

# WHAT'S WRONG WITH JELUTONG?

**Objective:** Students learn to identify pencils that come from rainforest wood and what alternatives can be used instead.

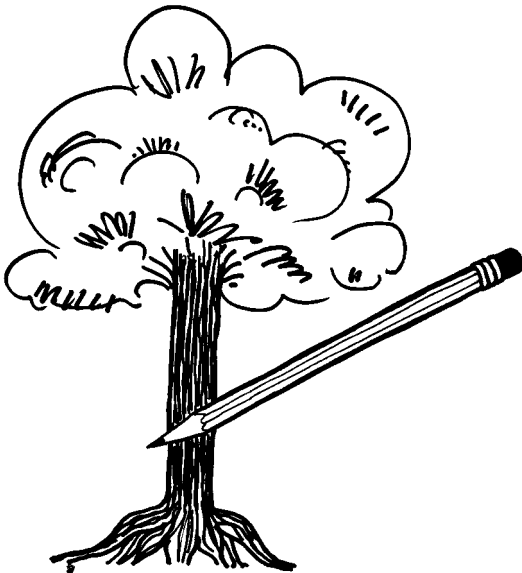
**Base of Knowledge:** *Rainforests Forever!* fact sheet: *Facts About Wood*

**Vocabulary:** alternatives, jelutong, sustained incense cedar

## Materials:

- *Be A Jelutong Detective!*—one copy per 2-4 student team
- *Rainforests Forever!* fact sheet: *Facts About Wood*—one per student
- jelutong and incense cedar pencils—one each per team (refer to *Be A Jelutong Detective!* for descriptions)
- magnifying glasses—one per team

**Set-up:** Place all materials on desks or tables to create a “research station” (1 station per 2 students).



**Grade Level(s):** 3rd-6th

**Time for Activity:** 30-40 minutes

**Subjects:** Science, Social Studies, Language Arts

**Intelligence Capacities:** Visual/Spatial, Interpersonal

**Focus:** Wood-Use Reduction

## PRESENTATION:

1. Have each student read *Facts About Wood* and discuss as a class how consumer choices affect rainforests.
2. Divide students into teams of 2-4 and pass out materials. Have each team review *Be A Jelutong Detective!* and ask them to discuss the characteristics of jelutong pencils.
3. Each team then picks up a magnifying glass and studies each pencil one at a time:
  - ✓ What does it look like?
  - ✓ Where is it made?
  - ✓ What does it smell like?
  - ✓ What kind of wood is it made from?
4. Evaluate the findings as a class. Ask students:
  - ✓ How difficult was it to determine the origins of the pencils?
  - ✓ Were there jelutong pencils that were not marked ‘Made in Indonesia’ or ‘Made in Taiwan’?
5. Ask students to investigate their pencils at school and at home to see what kind of wood they are made from. Explain that jelutong pencils should not be thrown away once they are found, but should be used respectfully until they are worn down and other rainforest-friendly pencil alternatives can be chosen.

## Extensions:

- Make this an ongoing project. Ask students to check their pencils for rainforest wood throughout the year. Share this information with other classes and the school newspaper.
- Have students check pencils that are sold in the school store. If jelutong pencils are found, speak to administrative staff and ask them to do what they can to provide rainforest-friendly alternatives.
- Display pencils made from alternative fibers such as denim, old currency, etc.
- Have students write to pencil companies inquiring about the origins of their pencils and asking them to stop using jelutong. Refer to “Write Away!” lesson plan.

**Resources:** Joanne Hardesty

## BE A JELUTONG DETECTIVE!

### *Avoid Pencils Made From Tropical Wood!*

Pencils are an important part of our daily life. Many of us use pencils all the time at school, home, and at the office. Every year, millions of pencils are made from a tropical rainforest tree called “jelutong.” The jelutong tree grows in Malaysia and Indonesia, and is home to many birds, animals, and insects. When a jelutong tree is cut down to be turned into pencils, it destroys the rainforest and the homes of all the animals that live there. It also affects the lives of the indigenous peoples that call the rainforest their home.

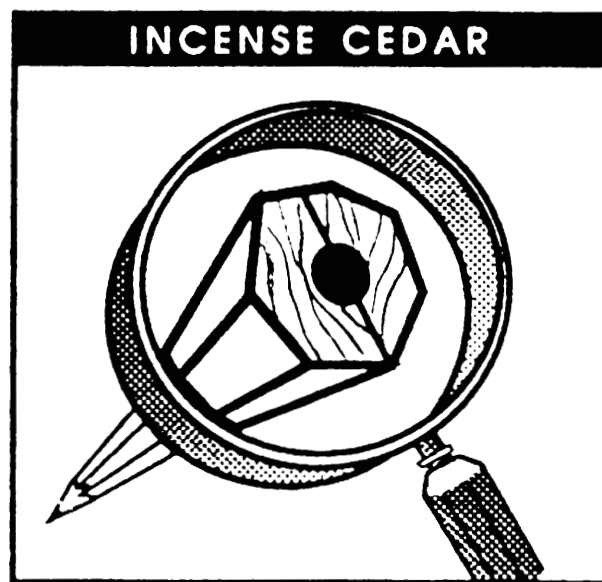
### *Use Rainforest-Friendly Pencils Instead!*

We do not need to use jelutong to make pencils. There are many other alternatives we can use. When shopping for pencils, avoid those that are labeled ‘Made in Indonesia’ or ‘Made in Taiwan’ since they are probably made of tropical rainforest wood. Instead, buy pencils made from the following:

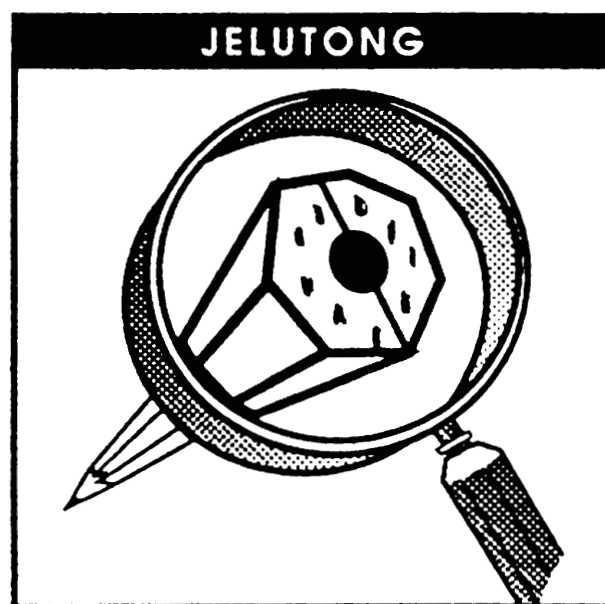
- ✓ Sustainable incense cedar
- ✓ Graphite that has no wood
- ✓ Recycled materials like denim or old currency

### *Be A Jelutong Detective!*

If you don't know what a pencil is made from, ask the store manager about its content, or do a little investigating and see if you can tell just by sniffing and looking at the pencil itself. It's easy to tell the difference between jelutong pencils and incense cedar pencils. Use this sheet and a magnifying glass to help you figure out which is which. Share the findings of your detective work with family and friends!



**Pencils made from incense cedar are reddish brown with distinctive grain or growth lines, and a cedar or deep-forest aroma. They smell good!**



**Pencils made from jelutong are dark white with specks of dark brown and have no aroma. Unlike other kinds of wood, tropical rainforest wood has no distinct grain or growth lines because there are no seasons in the tropical rainforests. Therefore, the growing season is steady all year round.**

# PAPER MAKERS

**Objective:** Students will broaden their awareness of ways to conserve wood by producing recycled paper, and then using this paper to educate others about saving rainforests.

**Base of Knowledge:** *Rainforests Forever!* glossary and fact sheet: *Facts About Wood*

**Vocabulary:** alternatives, kenaf, post-consumer, pulp, recyclable, reusable, tree-free

## Materials:

### Ingredients for the pulp:

- several pounds of scrap paper of various types and colors (e.g. “junk mail,” old magazines, recycled construction paper, and school paper)
- water
- optional: fallen leaves and flower petals

### Tools and supplies:

- wire-mesh screen with 1/16" holes—one square foot per 3 student team
- heavy masking tape 2" wide
- measuring cup
- blender and electrical outlet
- basins, tubs, or big bowls for holding pulp
- stacks of newspapers for use as blotters
- reusable rags or large sponges
- medium size bowls to hold paper scraps
- large piece of sturdy, flat board about 2'x2'

### Decorations:

- colorful marker pens and crayons
- rainforest stickers
- rainforest rubber stamps and inkpad
- glitter and glue

### **Set-up:**

Put 5 cups of scrap paper into a bowl—there should be one bowl per team of three students.

**Grade Levels:** 3rd-6th (3rd grade with extra assistance)

**Time for Activity:** 60-120 minutes

**Subjects:** Fine Arts, Language Arts

**Intelligence Capacities:** Interpersonal, Verbal/Linguistic, Logical/Mathematical, Naturalistic

**Focus:** Wood-Use Reduction



Make paper molds by taking the screen and running a double thickness of tape around the edges in order to guard against sharpness. Fold the taped screen edges up about 2 inches all around to make a shallow box approximately 8" x 8". Except for the decoration materials, place all remaining materials, tools, and supplies on a counter or large table top. Working near a sink is ideal. One or two parent volunteers or teacher aides are very useful in this project.

### **PRESENTATION:**

1. Hold up a used piece of paper and ask students the following:
  - ✓ What was this paper made from? (Answer: trees, unless it's tree-free paper.)
  - ✓ How many trees get cut down every year to make paper for the world's supply? (Answer: two billion. Write this number on the board to show the numerous zeros.)
  - ✓ Why are these two billion trees important to all forests and to the health of the planet? (Answer: animal habitat, oxygen, erosion control, climate stabilizer, shade, medicinal benefits, home to indigenous peoples, etc.)
  - ✓ What are some ways to use less paper and to reuse paper?
2. Divide the class into groups of three and explain that they will now help save trees and forests by making 100% post-consumer recycled paper. If desired, ask them to shred and separate the scrap paper (see “**Set-up**”). Otherwise, have them begin laying newspaper and tubs on a counter or table top.
3. Each team should be given one bowl with 5 cups of shredded paper and a measuring cup with at least 1 cup of water. Ask students to

add approximately 1 cup of water to their bowl of shredded paper. (The ratio of 1 cup of water to 5 cups of shredded paper is important.)

4. When the paper is soaked, each team can take turns pouring their wet paper into the blender. Be careful not to overfill the blender, and make sure the mixture is not too thick. Blend the water and paper until it is a smooth pulp.
5. Pour batches of pulp into a tub—adding a little water if it is too thick—until there is about 2 inches of mushy pulp water in the tub. (Depending on the size of the tub, there may need to be more than one batch of pulp added. If this is the case, then teams can work together over the same tub.)
6. Have one student at a time carefully dip the frame into the pulp and then lift it slightly out. Keeping the mold level, shift it back and forth over the tub until a layer of pulp—approximately 1/4 inch thick—settles evenly over the surface. If there is too much pulp or too little, then put the mold back under the pulp layer and try again.
7. Without tilting the mold, lift it up and hold it over the tub to let the excess water drain out. When the water is gone, the bottom of the mold should be covered by a layer of pulp. This will be a sheet of paper once it dries.
8. Optional: Add fallen leaves and flower petals. As soon as most of the water has been drained from the pulp in the mold, press flattened leaves or flower petals into the pulp. They do not need to be completely covered with pulp but they should be at least partially covered, or they won't stay on the paper.
9. With a rag or previously moistened sponge, *gently* sponge off as much moisture as possible from the pulp that's in the mold. With a stack of newspaper laid on a flat surface nearby, carefully and slowly flip the screen upside down so that the paper lands evenly on the newspaper. If it cracks, simply mend it with water. Cover the paper with another stack of newspaper and place a sturdy board over it. Have a student stand on the board for two minutes to squeeze out remaining water and to press the paper flat.

When this is done, carefully remove the paper and place it between two fresh stacks of newspaper for final blotting. Place a set of heavy books on top of the newspaper and let it dry overnight.

10. When the paper sheets are finally dry, peel them carefully from the newspaper.
11. Decorate the paper with pens, rubber stamps, crayons, or glitter. Put messages on the paper to raise awareness about the importance of using less wood. Here are some ideas:
  - Use “100% post-consumer recycled” logo.
  - Write slogans reminding people to buy tree-free products, reuse grocery bags, and use less paper and wood.
  - Decorate with images of rainforest animals and native forest peoples.
  - List three things people can do to help save rainforests.
  - Press leaves onto an inkpad and stamp onto paper.
12. Use these newly-created pieces of paper as notes! Suggestions:
  - Post them on the refrigerator reminding people to take a canvas bag to the grocery store instead of using new paper bags.
  - Send them to schoolmates, school employees, family members, local business owners, etc., asking them to use 100% post-consumer recycled or tree-free paper whenever possible.

### **Extensions:**

- Send letters, pictures, or poems on this paper to government officials asking them to help the rainforest. (Refer to “Rainforest Poetry” and “Write Away!” lesson plans).
- Research and write reports on kenaf, agricultural waste, cotton, hemp, seaweed, bamboo, and other tree-free alternatives for making paper products.
- Brainstorm paper-use reduction ideas, committing to some goals for the classroom and at home (i.e. bringing cloth napkins to school; using ceramic mugs instead of paper cups; using cloth towels instead of paper towels, etc.)
- Read and discuss *The Lorax* by Dr. Seuss.

# RAINFOREST POETRY

**Objective:** Students will learn how to write poetry that reflects their knowledge of rainforest issues and will share this poetry with others.

**Base of Knowledge:** *Rainforests Forever!* glossary

**Vocabulary:** cinquain, diamond poem, haiku

## Materials:

- sample poems (refer to attachment)
- copies of *Rainforests Forever!* glossary
- scratch paper and/or 100% recycled paper made by the students (see “Paper Makers” lesson plan)
- pencils, pens, markers, crayons
- chalkboard or dry-erase board and writing utensil

**Set-up:** On the chalkboard, write some sample poems for the class (using the poems featured below or creating your own), emphasizing such themes as wood-use reduction, oil-use reduction, and eating less beef. Distribute materials to students either individually or in teams.



**Grade Level(s):** 3rd-6th

**Time for Activity:** 45-60 minutes

**Subject:** Language Arts, Performing Arts

**Intelligence Capacities:** Verbal/Linguistic, Naturalistic

**Focus:** Wood-Use Reduction, Oil-Use Reduction, Beef Reduction

## PRESENTATION:

1. Initiate a discussion about poetry by reading the sample poems to the class. Ask students why they think people write poetry and what purpose poems serve. Answers might include:
  - ✓ to inspire others
  - ✓ to share ideas about something's or someone's uniqueness
  - ✓ to tell a story
  - ✓ to raise awareness
2. Explain that there are many different types of poetry. Discuss the unique structures of haiku, cinquain, and diamond poems, and explain that rhyming is not necessary.
3. Ask students to write their own poem(s)—individually or in teams—incorporating concepts and vocabulary from the *Rainforests Forever!* glossary.
4. Have the students read or act out their poems aloud to the class and then ask the students to decorate their poems with rainforest pictures. Display these poems around the school.

## HAIKU

Haiku (HI-koo) is a Japanese poem using the following pattern:

Line 1: five syllables

Line 2: seven syllables

Line 3: five syllables

Examples: Let's save rainforests  
Reduce, reuse, recycle  
All of us can help!

Beautiful old growth  
Precious to all living things  
Protect what is left

Plant based foods taste great  
Eating less beef helps the earth  
It's simple to do

## DIAMOND POEM

When writing a diamond poem, words should form a diamond shape.

Line 1: Noun  
 Line 2: Adjective, Adjective  
 Line 3: A sentence with an action  
 Line 4: Adjective, Adjective  
 Line 5: Noun—synonym of first noun on line 1

Cheap beef  
 Stringy, ground-up  
 Slash and burn rainforests  
 The sorrow the animals feel  
 Barren

Redwood tree  
 Towering, strong  
 It needs our protection  
 Ancient, endangered  
 Sequoia

Sun  
 Shining, powerful  
 It can fuel our world  
 Clean, renewable  
 Star

Plants  
 Plentiful, organic  
 They feed our bodies  
 Tasty, nutritious  
 Vegetation

### **Extensions:**

- Learn to write other types of poetry such as limericks and prose. Compile them in a rainforest poetry book and decorate it with drawings.
- Hold a poetry reading for your school. Invite other classes to attend and serve rainforest juices and snacks.
- Submit poetry to kids' magazines for possible publication.

## **CINQUAIN**

Cinquain (sing-KANE) follows this pattern:

Line 1: two syllables that focus on poem's topic  
 Line 2: four syllables that feature a description  
 Line 3: six syllables that feature an action  
 Line 4: eight syllables that feature a feeling  
 Line 5: two syllables that feature a word that evokes a visual image of the poem's topic

Clear-cut  
 Harmful, severe  
 People can do better!  
 I'm glad there are alternatives  
 Tree-free

Petrol  
 Oily, staining  
 It leads to pollution  
 How sad all the damage it makes  
 Messy

# WRITE AWAY!

**Objective:** Students will use letter-writing skills to demonstrate their understanding of the ecological, economic, and cultural issues involved with wood-use, oil-use, and beef consumption.

**Base of Knowledge:** *Rainforests Forever!* glossary and fact sheets: *Facts About Wood*, *Facts About Oil*, *Facts About Beef*

**Vocabulary:** scenario, viewpoint

## Materials:

- tree-free or reused paper
- pens or pencils
- overhead projector or chalkboard

**Set-up:** On the overhead projector or chalkboard, write the Business Letter Outline provided on the next page. Also write the three scenarios listed below. Pass out paper and pencils to students.

### Letter-writing scenarios:

- A farmer's child in Nebraska learns that her/his parent sells agricultural waste from harvested wheat straw so that it can be converted into paper. S/he writes to the president of a paper company that makes paper from trees and asks them to consider using this alternative pulp source.
- A student writes to an oil company and asks them to help save the rainforest by switching from selling oil to selling clean, renewable energy from the sun and wind.
- A student writes to a local store or copy shop, asking them to carry tree-free paper.
- A student writes to the school district asking for school lunches that contain less beef.

**Grade Levels:** 3rd-6th (Younger ages may need assistance.)

**Time for Activity:** 60 minutes

**Subjects:** Social Studies, Language Arts

**Intelligence Capacities:** Verbal/Linguistic, Intrapersonal, Interpersonal

**Focus:** Wood-Use Reduction, Oil-Use Reduction, Beef Reduction



## PRESENTATION:

1. Discuss with students the purpose of writing letters:
  - ✓ personal communication with family or friends
  - ✓ to request something
  - ✓ to communicate with businesses
  - ✓ to express a viewpoint
2. Explain the Business Letter Outline to students and tell them they are going to write a business letter that will express a viewpoint about the rainforests and how using less wood and oil can help save the rainforests and their inhabitants.
3. Have the students either individually or in pairs pick one of the three scenarios listed and write a business letter. Explain that this letter will serve to:
  - ✓ inform others of their viewpoints, knowledge, and/or feelings
  - ✓ ask for a specific action or consideration
  - ✓ request a response
 (*Note:* For younger grade levels, create a group letter or poster instead.)
4. Use the last two scenarios to write a real business letter. Research names and addresses in the yellow pages or on the web (check out [www.ran.org](http://www.ran.org)) and mail them out. See the next page for six companies to which the students can write.

## Extensions:

- Make drawings or murals to go with letters and display them in the library or school halls.
- Read *The Great Kapok Tree* by Lynne Cherry; ask the students to respond by writing letters to the man under the tree.

**Business Letter Outline:**

Your name  
Your street address  
Your city, state, zip  
Today's date: month/day/year

Name of person you are writing to  
Title  
Name of company  
Street address  
City, state, zip

Dear Ms./Mr. \_\_\_\_\_,

1st Paragraph: Who you are.  
Where you are from.  
Why you are writing.

2nd Paragraph: Why you are concerned.

3rd Paragraph: What you would like the company to do. End with saying thank you.

Sincerely,  
Your Signature

**Companies students can write to:**

**PAPER COMPANIES:**

John T. Dillon, Chairman and C.E.O.  
**International Paper**  
Two Manhattanville Road  
Purchase, NY 10577

Mr. Wayne Sanders, CEO  
**Kimberly-Clark**  
P.O. Box 619100  
Dallas, TX 75261

George J. Harad, CEO  
**Boise Cascade Corporation**  
P.O. Box 50  
Boise, ID 83728-0001

**OIL COMPANIES:**

Phillip J. Carroll, CEO  
**Shell Oil**  
P.O. Box 2463  
Houston, TX 77252

Kenneth T. Derr  
**Chevron Corporation**  
575 Market Street  
San Francisco, CA 94105-2856  
415-894-7700

Angus J. Dodson, President  
**Exxon Power**  
2401 S. Gessner  
Houston, TX 77063

# RAINFORESTS FOREVER!

## Culmination Activity

**Objective:** Students demonstrate their knowledge about how their actions can help rainforests by participating in a Jeopardy®-style game.

**Base of Knowledge:** As this is the culmination activity, students will have experienced most if not all of the *Rainforests Forever!* lesson plans and word games. A spelling review is recommended using the *Rainforests Forever!* glossary, fact sheets, and word games.

**Materials:** As with all of the *Rainforests Forever!* lesson plans, materials that promote wood-use reduction, oil-use reduction, and beef consumption reduction are encouraged. Please consider the sources for the paper and cardboard used in this activity.

- 16 pieces of 8 1/2" x 11" paper
- 3 ft. by 4 ft. approximate space on chalkboard
- chalk
- wide tip markers
- sign saying "Rainforests Forever!"
- masking tape
- scissors
- Question and Answer sheets provided at the end of this lesson plan
- Certificate of Achievement for each student, provided at the end of this lesson plan. (*Note:* Using re-used or tree-free paper for the certificate is important!)
- *Rainforests Forever!* glossary, fact sheets, and word games

**Grade Levels:** 3rd-6th

**Time for Activity:** 45-60 minutes

**Subjects:** Language Arts, Science

**Intelligence Capacities:** Visual/Linguistic, Visual/Spatial, Interpersonal, Intrapersonal, Naturalistic

**Focus:** Wood-Use Reduction, Oil-Use Reduction, Beef Reduction



### Set-up:

- On the chalkboard, write the following secret message within the 3 ft. by 4 ft. space:

*Your choices and voices*

*Save rainforests forever!*

*Reduce wood, beef, and oil use*

*You have the power!*

If you like, use drawings instead of words for part of the phrase as if it were a rebus. This adds extra fun!

- Take the 16 pieces of paper (previously used sheets are ideal!) and carefully cover the message so none of it is showing. You should then have four rows of four sheets.
- On the chalkboard, write at the top of each column the following categories:
  - ✓ Cool School
  - ✓ The Gifted Present
  - ✓ Where's the Beef?
  - ✓ Spelling Bee
  - ✓ Rainforest Mix
- Place your "Rainforests Forever!" sign at the top of the board.

### PRESENTATION:

1. Divide the class into four teams. Have each team choose a rainforest tree for their team name (mahogany, lauan, redwood, cedar, etc.)
2. Explain the rules of the game:
 

After being told what the categories stand for, each team will choose to answer a question from one of the four categories. When the question is asked, the team must work together to come up with the answer. No

individual may shout out the answer without first consulting the team. Doing so will disqualify that team in that round, even if the answer was correct. When the answer is decided on, one person is chosen to call it out. Eventually, everybody should have the opportunity to represent their team this way. If the answer is correct, then a placard under that category is removed, partially revealing the secret message underneath. If the answer is not correct, then the next team in line has the opportunity to answer it correctly, or to answer a different question from the same category. Once a placard is revealed, then the team that answered the question correctly has a chance to guess the secret message. If they cannot figure it out, then play resumes. The secret message can only be guessed by the team that just answered a question correctly. They have one minute to discuss it amongst themselves and offer the correct answer.

3. Begin playing the game.
4. If the secret message is solved early on, you may continue to ask the remaining questions so that students can reinforce their newly acquired knowledge about what they can do to reduce wood and oil use. If most of the questions have already been asked when the secret message is uncovered, then the game is over and students can cheer and clap and yell out the secret message in unison.
5. Since learning is a reward unto itself, everybody is a winner in this game! Even though one team may have uncovered the secret message first, everyone receives a prize. For this prize, ask students to be seated at their desks and to think of two things they can commit to do to help save the rainforests. One thing should be related to using less wood, one to using less oil, and one to eating less beef. When they have found their answers, pass out the personalized certificates (write in the names ahead of time) and ask them to write down their commitments. Have each student share what they wrote with the class. They can then spend ten minutes coloring the certificate before taking it home to proudly display.

**Extensions:**

- Invite another class to be the audience for the game. Have them cheer as if they were at a real game show.
- Have a little rainforest party to celebrate completion of *Rainforests Forever!* Serve tropical fruit juices and snacks like peanuts, almonds, corn chips, popcorn, dried papaya, pineapple, mango, and coconut. Students can participate by turning the party into a rainforest potluck. Remember to use glass bottles and reusable cups, plates, and napkins!
- Go on a field trip to a store or look at a mail-order catalog (toy store, gift catalogs, etc.). Analyze the packaging of various items. Determine the origins of the items and of the packaging.
- Continue having Spelling Bees.
- Let the students create and share their own game show, board game, skit, etc.
- Research topics such as sustainable alternatives.
- Educate others. Use the internet to connect with other classes, groups, countries, etc.

# Question & Answer Sheets

Use these questions for the *Rainforests Forever!* culmination activity. Students should be able to answer them after completing the entire *Rainforests Forever!* unit. Since *Rainforests Forever!* is meant to be a supplemental unit, some questions (i.e. in the Rainforest Mix category) address general rainforest information that students should already know. Therefore, please decide which questions to include, based on what students have already learned.

**Cool School** This category illustrates how schools can help the rainforests through wood-use reduction and oil-use reduction.

- **Pencil Points** (refer to “What’s Wrong With Jelutong?”)
  1. **Q:** What is jelutong?  
**A:** endangered tropical tree often used to make pencils.
  2. **Q:** Where does it grow?  
**A:** Southeast Asia, notably Indonesia and Malaysia.
  3. **Q:** What is an alternative to this source for pencils?  
**A:** graphite, sustained incense cedar, denim, old currency, or refillable pencils.
  4. **Q:** What are some characteristics of jelutong pencils compared to other types?  
**A:** They have no smell; their wood grain looks like tiny spots, etc.
  
- **Arts and Crafts** (refer to “Paper Makers”)
  1. **Q:** How can construction paper scraps be reused?  
**A:** confetti, collages, paper-making.
  2. **Q:** How can magazines and catalogs be reused?  
**A:** murals, posters, cards, collages, paper-making.
  3. **Q:** Instead of oil-based inks and paints, what can be purchased and used?  
**A:** water-based, soy-based, natural dyes, etc.
  4. **Q:** How can newspapers be reused (especially at school)?  
**A:** protection for tables/floor, making paper, paper maché, and packing boxes.
  
- **Lunch Time** (refer to “Garbage Bag Lunch”)
  1. **Q:** What can be used instead of a paper lunch bag?  
**A:** reusable container (examples being: metal lunchbox, cloth bag, tupperware® etc.).
  2. **Q:** How can a plastic yogurt cup be reused?  
**A:** food container, crayon holder, etc.
  3. **Q:** What is the liquid origin of styrofoam?  
**A:** crude oil.  
**BONUS Q:** Under normal conditions of sunlight, rain, etc., how long does it take for styrofoam to decompose? Multiple choice: 1 week; 1 year; 12 years; or unknown.  
**A:** unknown.
  4. **Q:** To avoid having juice in plastic bottles, what else can you purchase?  
**A:** glass, aluminum.
  5. **Q:** What can be used instead of paper napkins?  
**A:** cloth napkins.

- **Homework**

1. **Q:** Name one way to reduce paper-use when doing your math homework.  
**A:** Use both sides of a sheet of paper; use “junk mail” envelopes, half-sheets, receipts, etc.
2. **Q:** Instead of oil-based ink, what kind can you use?  
**A:** soy-based, water-based, and natural dyes.
3. **Q:** In an effort to raise concern about rainforests, you choose to write a letter to a company. What are the three parts of the letter to include?  
**A:** viewpoint/concern; what you would like the company to do; closure/signature and address.
4. **Q:** What's the best kind of pencil to use for homework?  
**A:** Those made from sustained incense cedar, denim, old currency, graphite or refillable ones.

## The Gifted Present

This category encourages students to articulate how an ordinary purchase like choosing a gift affects rainforests.

- **Transportation**

1. **Q:** Name two ways to help with oil-use reduction as you travel to and from the store.  
**A:** walk; bicycle; carpool; bus; train; rollerblade; planning trips for maximum efficiency.
2. **Q:** In trying to decide which gift to give—a very large, heavy item or a small, light-weight item—which item would use less oil in transportation? Why?  
**A:** A smaller, lighter item would use less oil in transportation since the heavier an item is, the more oil and gas it takes to transport it.
3. **Q:** Which uses less oil?..delivering a gift personally on foot or bicycle, or through the mail?  
**A:** By delivering it personally, oil used for postal machines—including trucks—is avoided.
4. **Q:** Which uses less oil?..regular postal delivery of packages or over-night delivery?  
**A:** Regular delivery uses less oil; the over-night delivery demands faster use of machines, transportation, etc.

- **The Gift** (includes packaging)

1. **Q:** What are some things to think about before buying a wooden gift such as a picture frame or a set of kitchen bowls?  
**A:** Source of wood; packaging; are there alternative materials that can be used; are there other non-wood gifts from companies that donate to environmental and conservation efforts.
2. **Q:** When looking at the packaging, what should you take into consideration?  
**A:** the amount of styrofoam, plastic (bubblewrap), and/or cardboard used.
3. **Q:** What alternatives exist for wood gifts like picture frames or bowls?  
**A:** making your own gifts out of scrap cardboard and fabric; buying those made of ceramic, glass, etc.; buying antiques or secondhand items.

- **“Would you like paper or plastic or..?”**

1. **Q:** Name one way you can reduce paper/plastic bag-use.  
**A:** Bring your own bag, especially cloth/canvas ones; avoid bags altogether whenever possible (i.e. just say “No, thanks” to the cashier, explaining that you’re trying to save resources that come from the rainforests.)

- **The Card Attached**

1. **Q:** When selecting or making a card, name one thing to consider about the paper.  
**A:** Origin of the paper (Is it tree-free? If not, how much is recycled/post-consumer waste?)
2. **Q:** When selecting or making a card, name one thing to consider about the ink.

**A:** Is it oil-based, water-based, soy-based, or made with natural dyes?

3. **Q:** What materials could you reuse to make your own card?

**A:** Junk mail, magazines, old construction paper, tree-free paper, etc.

- **Wrapping It Up**

1. **Q:** Name one way to reduce paper-use when wrapping the gift.

**A:** Save and reuse old wrapping paper; make your own wrapping paper by using comic pages from the newspaper; use fabric scraps, scarves, towels, or old, cut-up sheets; use a ribbon with nothing else.

2. **Q:** Which uses more wrapping paper?...a large gift or a small one?

**A:** large.

## **Where's the Beef?**

This category explains how eating less beef can help save the rain forest and the environment in general.

- **What's for Lunch?**

1. **Q:** Name three types of sandwiches that don't contain beef.

**A:** Peanut butter and jelly, egg salad, grilled cheese, veggie-slices (i.e. soy bologna).

2. **Q:** When ordering lunch at a restaurant, name three entrees that don't contain beef.

**A:** Veggie stir-fry, macaroni and cheese, pasta primavera, cheese pizza, veggie lasagna, bean burrito, stuffed potato, veggie burger, tofu hot dog.

3. **Q:** If a fruit or vegetable is labeled "organic" what does that mean?

**A:** It means it was raised naturally without the use of chemical fertilizers or pesticides.

4. **Q:** Name three types of legume?

**A:** Peanuts, lentils, kidney beans, pinto beans, garbanzo beans, navy beans, soybeans.

- **Environmental Stampede**

1. **Q:** Half (or 50%) of what natural resource gets used to raise beef cattle in the United States?

**A:** Water.

2. **Q:** Cattle ranching accounts for what percentage of rainforest destruction?

**A:** 25%.

3. **Q:** What is slash and burn agriculture and what is it used for?

**A:** It's when farmers cut and burn the rainforest trees to clear land to grow crops. It is often used for cattle ranching to provide grass pastures for cows.

4. **Q:** What kind of greenhouse gas do cows emit as part of their digestive process?

**A:** Methane

5. **Q:** To produce one pound of beef requires approximately how many pounds of grain?

**A:** Twelve

6. **Q:** What happens to the rainforest a few years after it's been slashed and burned to make a cattle ranch?

**A:** Desertification sets in which means that the rainforest becomes barren and dry like a desert.

- **An Apple a Day Keeps the Doctor Away**

1. **Q:** Name two diseases that are typically associated with a diet high in beef and other animal products.

**A:** Cancer, heart disease.

2. **Q:** True or False: Studies show that when countries adopt a typical American diet high in beef and other animal products that their incidences of cancer and heart disease increase.

**A:** True

3. **Q:** True or False: Studies show that eating a plant based diet full of fresh fruits, vegetables, whole grains, legumes, nuts and seeds is the healthiest way to eat.

**A:** True

4. **Q:** True or False: It is difficult to live a healthy life and get adequate nutrition without eating beef.

**A:** False

**Spelling Bee** Using the glossary, offer a selection of words that are both wood and oil related.

**Examples:**

kenaf, petroleum, alternatives, carpool, solar, mahogany, bagasse, synthetic, sustainable, indigenous, temperate

**Rainforest Mix** This category is devoted to miscellaneous knowledge—geography, energy alternatives, fiber alternatives, etc.

- Q:** What's another term for sugarcane agricultural waste?  
**A:** bagasse.
- Q:** Name three types of agricultural waste.  
**A:** cornstalks, wheat straw, bagasse, rice straw, banana stalks.
- Q:** Name two countries with tropical rainforests.  
**A:** Brazil, Ecuador, Costa Rica, Madagascar, The People's Republic of Congo, Indonesia, Malaysia, US (Hawaii).
- Q:** Name three countries with temperate rainforests.  
**A:** Canada (British Columbia), US (Pacific Northwest), Chile, New Zealand.
- Q:** Instead of using oil for energy, what else can we use?  
**A:** solar power; wind power.

**Photocopy the certificates on the next page on tree-free or re-used paper and distribute them to the students after the activity is completed. Remember to fill in their names and add your signature before passing them out.**

This certificate of achievement is presented to



for caring about the rainforests  
and consuming less wood, oil, and beef  
so that the rainforests can be saved!



One way I commit to REDUCE WOOD USE is...

---

One way I commit to REDUCE OIL USE is...

---

One way I commit to EATING LESS BEEF is...

---

\_\_\_\_\_  
teacher's signature

\_\_\_\_\_  
date

Rainforests Forever! Rainforests Forever! Rainforests Forever!

This certificate of achievement is presented to



for caring about the rainforests  
and consuming less wood, oil, and beef  
so that the rainforests can be saved!



One way I commit to REDUCE WOOD USE is...

---

One way I commit to REDUCE OIL USE is...

---

One way I commit to EATING LESS BEEF is...

---

\_\_\_\_\_  
teacher's signature

\_\_\_\_\_  
date

Rainforests Forever! Rainforests Forever! Rainforests Forever!

Name \_\_\_\_\_

# Tree-Free Cryptograms

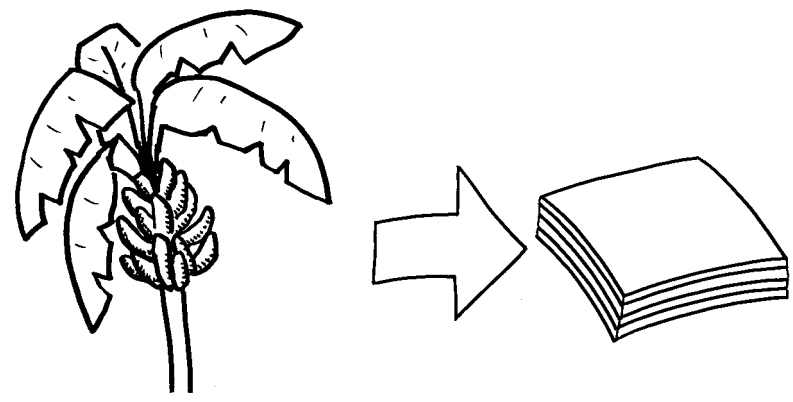
Write the letter in the alphabet that follows the letter below the line to learn a fun fact about saving the rainforest. For example, if the letter below the line is a **V**, then print a **W**.

A \_ \_ \_ \_ \_ A \_      W A S T E  
 \_ F Q H B T K S T Q \_ K      V \_ R S D

\_ \_ \_ \_ \_      \_ \_ \_ \_ \_  
 A D B N L D R      T R D E T K

\_ \_ \_ \_      \_ \_  
 V G D M      V D

\_ A \_ \_      \_ A \_ \_ \_      \_ \_ \_ \_      \_ \_ !  
 L \_ J D      O \_ O D Q      E Q N L      H S





Write the letter in the alphabet that comes before the letter below the line to discover a great way to save the rainforests. For example, if the line has a **D** below it, write a **C**.

\_ \_ \_      \_ \_ \_ \_ \_      \_ \_ \_ \_ \_      \_ \_ \_ \_  
 V T F      U S F F G S F F      Q B Q F S

Name \_\_\_\_\_

# Unscrambling Wood Use!

Unscramble the words below to find exciting alternatives to wood-based paper! Choose your answers from the list of tree-free fibers provided. Use your *Rainforests Forever!* glossary to help define the words.

<b><u>Agricultural waste:</u></b>		<b><u>Other tree-free alternatives:</u></b>	
bagasse banana stalks cornstalks hay straw rice straw wheat straw		cotton currency denim flax hemp kenaf	

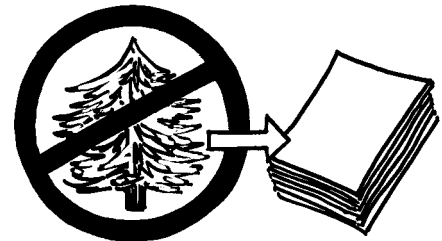
**F E N K A** = \_\_\_\_\_      **R N C O K L A T S S** = \_\_\_\_\_

**S A G A B E S** = \_\_\_\_\_      **N I D M E** = \_\_\_\_\_

**H E T A W W A R T S** = \_\_\_\_\_

Now, arrange the bold letters to form the surprise answer.

Using paper and cardboard that are \_\_\_\_\_ is a super way to help rainforest animals live and be!



Using the list of wood alternatives above, figure out these tree-free terms.

- \_\_\_ **T** \_\_\_ So easy to grow, this crop makes great paper not easily forgotten.
- \_\_\_ **R** \_\_\_ Instead of wasting these stalks, let's turn them into a new paper form.
- \_\_\_ **E** \_\_\_ This fast-growing shrub could help reduce the amount of trees we cut by half.
- \_\_\_ **E** \_\_\_ Blue, black, or green—this can be made into paper from worn jeans!
  
- \_\_\_ **F** \_\_\_ Using this plant with blue flowers to make paper can save trees from the ax.
- \_\_\_ **R** \_\_\_ Using wood alternatives now can help prevent a forest emergency later.
- \_\_\_ **E** \_\_\_ Leftovers from this make great paper after we harvested it to eat.
- \_\_\_ **E** \_\_\_ This agricultural waste can be made into tree-free paper that's oh so nice!

Name \_\_\_\_\_

# Tree-Free! Hidden Message

To find an important message about something that can help save the trees in the rainforest, follow the directions below and circle the remaining words. Use your *Rainforests Forever!* glossary if you need help.



ebony      We      South America      spices      can  
 nuts      teak      make      medicine      paper  
 Africa      rubber      from      fruit      mahogany  
 plants      douglas fir      like  
 Southeast Asia      kenaf      North America  
 and      redwood      Northeast Australia      corn.

- Cross out **5** areas where rainforests are found.
- Cross out **5** types of rainforest trees that are cut down to make paper, furniture, and lumber.
- Cross out **5** products (in the top three lines only) that rainforest communities sustainably harvest.

Name \_\_\_\_\_

# Words Change... Worlds Change (Wood Use)

With the clues provided, change the first word into the final word—one letter at a time.

Using tree-free paper isn't just good for trees,  
It's good for all living creatures like eagles and bees!

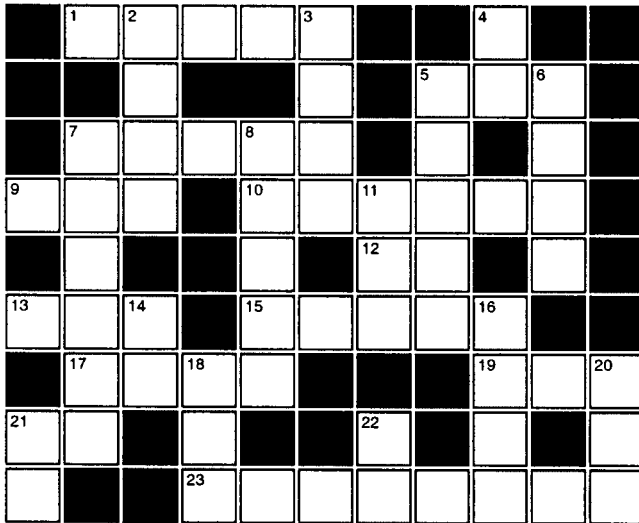
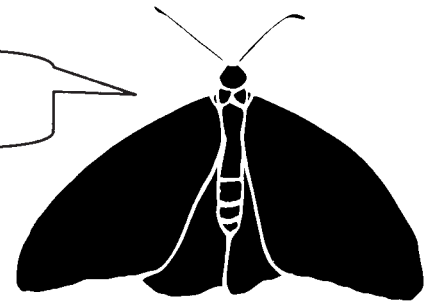


- W O O D      Paper can be made of lots of things other than \_\_\_\_\_,  
 \_\_\_\_\_ so let's spread the \_\_\_\_\_ about how alternatives like  
 \_\_\_\_\_ denim, kenaf, hemp, and agricultural waste such as  
 C O R N      \_\_\_\_\_ stalks and rice straw can help reduce wood use!
- P A P E R      Making notes for friends, solving a math problem, drawing a rainforest  
 \_\_\_\_\_ picture—these are some ways to use both sides of \_\_\_\_\_.  
 \_\_\_\_\_ It's fun to pretend you're a detective who can solve a mystery \_\_\_\_\_.  
 \_\_\_\_\_ Catwoman, Superman, and others wear \_\_\_\_\_ to help them move swiftly.  
 \_\_\_\_\_ You can make cassette \_\_\_\_\_ of your own rainforest song or rap!
- T Y P E S      Two \_\_\_\_\_ of tree-free paper fiber are wheat straw and bagasse.
- T R E E S      Sitka spruce and douglas fir are two temperate rainforest \_\_\_\_\_.  
 \_\_\_\_\_ It \_\_\_\_\_ the bald eagle from worry when we protect its home in the  
 \_\_\_\_\_ temperate rainforests of Canada.  
 \_\_\_\_\_ When acres of temperate rainforest are clear-cut for wood and paper, sunlight falls  
 on the Earth, and it bakes and \_\_\_\_\_ in the sun.
- T R I E S      It's amazing how many animal homes are saved when someone \_\_\_\_\_ their  
 best to save trees.
- P L O W      \_\_\_\_\_ the soil before sowing seeds of the kenaf plant.  
 \_\_\_\_\_ Water regularly and let the sun's rays \_\_\_\_\_ upon it.  
 \_\_\_\_\_ See the kenaf plant \_\_\_\_\_ quickly and strong.  
 \_\_\_\_\_ Watch the black \_\_\_\_\_ fly overhead as it goes, "caw! caw!"
- C R O P      Let's use this \_\_\_\_\_ to make tree-free paper and help save the rainforests!
- S A V E      We must \_\_\_\_\_ tropical and temperate rainforests for our future.  
 \_\_\_\_\_ We \_\_\_\_\_ to work together and cooperate,  
 \_\_\_\_\_ like bees in a \_\_\_\_\_,  
 L I V E      so that the rainforests can \_\_\_\_\_ forever!
- C U P S      Instead of using disposable paper \_\_\_\_\_, use ones made of ceramic or glass.  
 \_\_\_\_\_ \_\_\_\_\_ made of wool, cotton, or hemp keep your head warm in winter.  
 \_\_\_\_\_ Drilling for oil \_\_\_\_\_ into the earth deep underneath the rainforests.  
 \_\_\_\_\_ Clothing \_\_\_\_\_ can easily be made from tree-free paper.  
 \_\_\_\_\_ When we learn how sad rainforest destruction is, it really \_\_\_\_\_ at the heart!
- M U G S      Use ceramic \_\_\_\_\_ again and again instead of throwing away paper cups.

Name \_\_\_\_\_

# Use Less Wood! Crossword Fun

Rainforests are awesome!!



**ACROSS**

1. This plant makes great tree-free paper!
5. This color is used to name a certain tree that can live to be over 2,000 years old.
7. Temperate rainforests can be found in the \_\_\_\_\_ of Oregon.
9. The rainforest still \_\_\_ thousands of new medicines for us to discover and use!
10. Using cloth napkins is a great way to \_\_\_\_\_ paper use and save trees.
12. Making paper from agricultural waste \_\_ a very smart thing to do.
13. Since the canopy blocks out most of the sun, the light on the forest floor can be very \_\_\_\_\_.
15. Until rainforest destruction has finally \_\_\_\_\_ we must do all we can to save them.
17. The good \_\_\_\_\_ is that we can help save rainforests by using tree-free paper.
19. \_\_\_ excellent way to save trees is to use a reusable mug instead of paper cups.
21. Cardboard and paper can be made from left-over straw, sugarcane, and cornstalks that are also known as “\_\_ waste.”
22. Using \_\_\_\_\_ paper helps protect the homes of millions of rainforest animals!

**DOWN**

2. When tropical trees are destroyed, the food that a monkey \_\_\_\_\_ will disappear.
3. Even though paper napkins in a restaurant are \_\_\_\_\_, we shouldn't grab a stack of them when all we need is one or two. After all, they cost a tree something!
4. \_\_ a rainforest hero and let others know what they can do to help the rainforests.
5. One easy way to \_\_\_\_\_ an old sheet of paper is to turn it over and use the other side.
6. This graceful animal can be found in both tropical and temperate rainforests.
7. \_\_\_\_\_ the rainforests by using less wood isn't just important for protecting the animals that live there, it's important to all of life on Earth!
8. Old growth \_\_\_\_\_ aren't just pretty to look at, they provide shelter to many animals that live only in old growth forests.
11. \_\_\_ you know that half of the world's tropical rainforests are found in only four countries? (Brazil, Indonesia, The People's Republic of Congo, Peru.)
14. Saving trees by using less paper is something everyone can do—including you and \_\_\_!
16. Instead of using rainforest wood like lauan to build a \_\_\_\_\_, let's use alternatives like reused wood.
18. It's very \_\_\_ in the rainforest since it rains at least 100 inches a year.
20. Keep your \_\_\_ open for paper and notebooks that are made from tree-free paper.
21. When shopping \_\_ the grocery store, take a cloth bag with you so that you don't have to use the paper or plastic bags.
22. By using less wood and paper, \_\_ all have so much power to help save the rainforests!

# Use Less Wood!

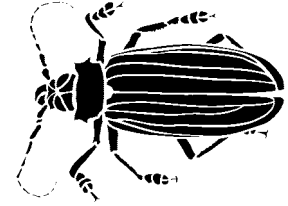
## Super Crossword Fun

### ACROSS

1. When you buy candy and cereal, use this kind of container and buy in bulk.
3. A mushy form of fiber—including kenaf and hemp—before it's made into paper.
9. A type of agricultural waste, often associated with hay or wheat.
12. Sugarcane agricultural waste, perfect for making paper.
14. Tree-free paper is the way to \_ \_ !
15. A fibrous, tree-free type of shopping bag.
17. Gathering and selling these helps tropical rainforest peoples earn a living; examples include cashews, almonds, and Brazil.
19. Reducing cardboard use, plus reusing paper—both \_ \_ \_ up to saving trees.
23. \_ \_ no! 150 acres of rainforest are being destroyed every minute!
24. A type of paper that isn't made from trees.
25. Buying and refinishing these types of antiques helps save trees.
27. Chicle is a renewable resource from this tropical tree.
28. This non-rainforest tree is found in many parts of the world (rhymes with spoke).
30. Acronym for Rainforest Action Network.
31. Spanish word for water.
32. Latex is a product of this traditional tropical tree resource.
37. \_ \_ \_ wood is often produced from Indonesian trees.
38. Tropical rainforest examples of these include paprika, ginger, cloves, nutmeg, cinnamon, cardamom, and black pepper.
40. \_ \_ many animal homes are saved when we reduce, reuse, and recycle paper.
42. \_ \_ easy way to save paper is to use cloth napkins and rags.
43. Millions of people know the rainforests \_ \_ their home.
44. It takes \_ \_ \_ person like you to make a positive difference for the rainforests!

Name \_\_\_\_\_

Rainforest destruction really bugs me.



46. Indigenous people can preserve their rainforest home and earn income by carving a rainforest tagua nut and selling it as a \_ \_ \_ to wear.
48. \_ \_ time goes by, we discover new medicines that come from rainforest plants.
49. Trees that grow in our neighborhoods are often found in back\_ \_ \_ \_ \_.
51. An endangered hardwood from Southeast Asia that is used to make furniture and picture frames.
53. Gibbons—which live in the rainforests of Malaysia—are the smallest of this type of animal.
54. It's \_ \_ \_ to organize recycling activities and "Save-the-Rainforest" fundraisers.
55. Short for "Save Our Sitkas!"
57. In Hawaii, one says "Aloha!" for "\_ \_!"
58. To limit the use of a natural resource so that it can be there in the future.
60. When we buy products with as little cardboard packaging as possible, we \_ \_ \_ \_ \_ our use of wood.
64. Located in Indonesia and Malaysia, this tree is often made into pencils.
68. Instead of paper napkins, use napkins made of \_ \_ \_ \_ \_.
70. Short for "company."
71. You can use a palm branch as a \_ \_ \_ on hot days in Costa Rica.
72. South American country that contains 1/3 of the Amazon rainforest.
74. Abbreviation for Iowa—a state where kenaf grows well.
75. Just say "\_ \_!" to paper bags when you're only buying one or two items.
76. When we \_ \_ \_ \_ \_ wood-based paper and cardboard, we save millions of trees.
78. Think of \_ \_ \_ the animals we save when we use tree-free alternatives!

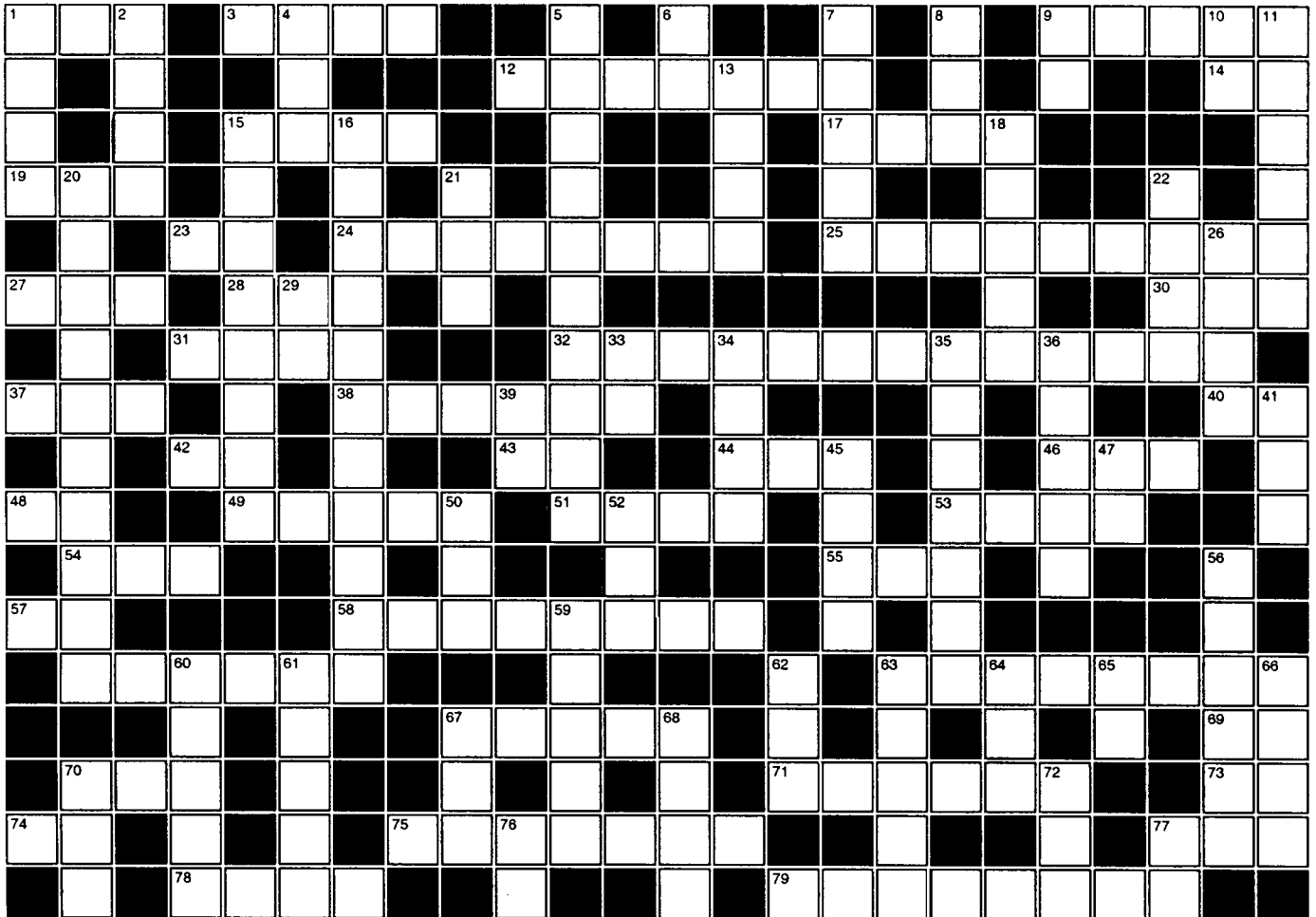
**Use Less Wood!****ACROSS continued**

79. The world is a healthier place when we have \_\_\_\_\_ rainforest trees.
80. These endangered tropical trees are named after a flower.

**DOWN**

1. A bee will “buzz,” and a sheep will “\_\_\_\_\_.”
2. Buying furniture made of bamboo is a \_\_\_\_\_ way to reduce the use of hardwood trees.
4. A way to reduce wood \_\_\_\_\_ is to shop for cereal in bulk instead of buying it in cardboard boxes.
5. In a \_\_\_\_\_ it rains at least 100 inches annually.
6. Parrot feathers might tickle, making you laugh and say “\_\_\_\_\_!”
7. A fast-growing shrub that can be used to make tree-free paper.
8. The opposite of “in.”
9. “Yes” in Spanish.
10. Sources of \_\_\_\_\_ waste include cornstalks and bagasse.
11. Not using disposable, \_\_\_\_\_ chopsticks is a simple way to save rainforest trees.
13. We \_\_\_\_\_ millions of flowering plants and butterflies when we protect rainforest trees.
15. This South American wood is often used for furniture and boats.
16. A strong and tall tree found in Washington and British Columbia (two words).
18. From \_\_\_\_\_ to sundown, the rainforest provides fresh air for all (two words).
20. A tall temperate tree and a male’s name.
21. \_\_\_\_\_ old growth trees remain standing since there are so few of them left!
22. Slash-and-\_\_\_\_\_ is one technique used to clear rainforest areas.
26. Instead of paper towels, use cloth \_\_\_\_\_ to reduce wood use and save trees.
29. Scientific abbreviation for “gold”
33. It’s up to \_\_\_\_\_ to help save rainforests!
34. A phone \_\_\_\_\_ is easily recycled.
35. Cornstalks and wheat straw are examples of \_\_\_\_\_ that can be made into paper once farmers are through with them.
36. Using tree-free \_\_\_\_\_ is one of the best ways to save the rainforests.
39. Abbreviation for California.
41. The rainforest is not our \_\_\_\_\_; we should respect it as a home for many.
45. Vietnam and India are two countries in \_\_\_\_\_ Asia that have rainforests.
47. Using mugs instead of paper cups \_\_\_\_\_ a great way to save paper!
50. With rainforest indigenous peoples, tools are often passed on from father to \_\_\_\_\_.
52. The stalk—not the \_\_\_\_\_ of corn—can be used to make paper.
56. Remember to avoid this writing tool that says ‘Made in Indonesia.’
59. An endangered tropical, black wood used for furniture.
61. Worn blue jeans made of \_\_\_\_\_ are a great alternative for making tree-free paper.
62. To \_\_\_\_\_-cut means cutting down all the trees in one area leaving nothing behind.
63. In temperate rainforests, the little bear \_\_\_\_\_ loves to eat berries.
64. Blue \_\_\_\_\_ can be turned into paper (see #61 DOWN).
65. In Hawaii, they greet people with a flowery necklace called a \_\_\_\_\_.
66. Writing or drawing on both sides of a piece of paper is an excellent way \_\_\_\_\_ save trees.
67. Encourage your parents to set a wood-use reduction \_\_\_\_\_ at work.
68. Some endangered tropical trees are used for making pool or \_\_\_\_\_ sticks.
69. Clear-cutting a rainforest area leaves a huge \_\_\_\_\_ in the canopy.
71. Rainforest trees provide homes \_\_\_\_\_ millions of exciting animals.
73. “\_\_\_\_\_” is a nickname for the lion.
77. Abbreviation for Colorado.
78. Putting an \_\_\_\_\_ in the newspaper is a good way to teach people about what they can do to help save the rainforests!

# Use Less Wood!



I love eating ants, and I love tree-free paper made from plants!

Name \_\_\_\_\_

# Secret Message Math (Wood)

ADDITION and SUBTRACTION with WHOLE NUMBERS

Add or subtract the numbers under each space and match your answer with the corresponding letters below to form a helpful hint about wood-use reduction. For example, if an answer is **5**, put a **W** on the line directly above the math problem.

I'm a grizzly bear and I live in the temperate rainforests of Canada.



- $(19 + 8)$   $(11+5)$   $(20 - 7)$   $(13+15)$   $(21 - 5)$   $(12+15)$   $(13 - 4)$   $(4 + 15)$   $(31 - 4)$
- $(21 + 7)$   $(29 - 8)$   $(11 + 11)$   $(19 - 7)$   $(11 + 6)$   $(19 - 3)$   $(35 - 7)$   $(6 + 3)$   $(19 - 8)$   $(21+6)$   $(5 + 6)$
- $(26 - 9)$   $(12 + 4)$   $(32 - 4)$   $(13 - 4)$   $(41 - 7)$   $(30 - 21)$   $(15 + 13)$
- $(7 + 7)$   $(17 - 8)$   $(3 + 16)$   $(37 - 5)$   $(1 + 8)$   $(30 + 4)$   $(21 - 12)$   $(33 - 5)$  ...
- $(10 + 7)$   $(25 - 3)$   $(11 + 1)$   $(38 - 7)$   $(12 - 7)$   $(16 + 5)$   $(17 - 2)$   $(3 + 8)$   $(25 + 2)$   $(18 - 2)$
- $(36 - 8)$   $(20 - 11)$   $(27 + 4)$   $(19 - 1)$   $(24 - 5)$   $(7 + 2)$   $(12 - 7)$   $(21 - 5)$   $(8 + 8)$   $(35 - 4)$
- $(30 - 9)$   $(4 + 8)$   $(25 + 6)$   $(15 - 2)$   $(17 + 4)$   $(4 + 9)$   $(19 - 10)$   $(30 - 2)$   $(12 + 6)$   $(40 - 29)$   $(1 + 8)$

**Secret Code:** 14=B 17=F 22=I 15=Y 28=R 5=W 32=L 21=A 9=E  
 27=T 16=O 11=S 31=D 18=U 12=N 34=V 19=C 13=P

Name \_\_\_\_\_

# Secret Message Math (Wood)

MULTIPLICATION with WHOLE NUMBERS

Multiply the numbers under each space and match your answer with the corresponding letters below to form a helpful hint about wood-use reduction. For example, if an answer is **25**, put a **B** on the line directly above the math problem.

It's because of kids like you who care that I'm hopeful my rainforest home in Africa will be saved!



$$\overline{(4x3)} \quad \overline{(6x4)} \quad \overline{(16x3)} \quad \overline{(6x10)} \quad \overline{(45x2)}$$

$$\overline{(5x5)} \quad \overline{(10x10)} \quad \overline{(7x12)} \quad \overline{(4x4)} \quad \overline{(3x8)} \quad \overline{(8x6)} \quad \overline{(9x8)} \quad \overline{(3x10)} \quad \overline{(12x2)} \quad \overline{(20x5)} \quad \overline{(35x2)}$$

$$\overline{(9x5)} \quad \overline{(9x2)} \quad \overline{(3x15)} \quad \overline{(15x2)} \quad \overline{(6x6)} \quad \overline{(4x12)} \quad \overline{(4x6)} \quad \overline{(9x10)} \quad \overline{(50x2)} \quad \overline{(25x4)} \quad \overline{(2x36)}$$

$$\overline{(7x7)} \quad \overline{(2x8)} \quad \overline{(4x25)} \quad \overline{(5x20)} \quad \overline{(8x3)} \quad \overline{(6x8)} \quad \overline{(5x12)} \quad \overline{(3x30)} \quad \overline{(2x42)} \quad \overline{(8x2)} \quad \overline{(24x2)} \quad \overline{(24x1)}$$

$$\overline{(5x3)} \quad \overline{(2x9)} \quad \overline{(25x2)} \quad \overline{(12x2)} \quad \overline{(3x6)} \quad \overline{(7x6)} \quad \overline{(5x6)} \quad \overline{(4x6)} \quad \overline{(3x5)} \quad \overline{(20x5)} \quad \overline{(2x50)} \quad \overline{(8x9)}$$

Secret Code: 36=R    72=D    18=A    15=W    48=I    49=C    12=U    45=P    30=E    90=G  
 25=B    60=N    50=Y    16=H    100=O    24=S    84=T    42=V    70=F

Name \_\_\_\_\_

# Secret Message Math (Wood)

DIVISION with WHOLE NUMBERS

Divide the numerator by the denominator under each space and match your answer with the corresponding letters below to discover a helpful hint about wood-use reduction. For example, if an answer is **48**, put an **I** on the line directly above the math problem.



$\overline{36} \frac{48}{6} \frac{3}{5} \frac{5}{7} \frac{7}{5}$	$\overline{52} \frac{7}{55}$	$\overline{27} \frac{48}{3} \frac{8}{11}$	$\overline{18} \frac{15}{18} \frac{34}{3} \frac{2}{2}$
$\overline{42} \frac{70}{3} \frac{32}{7} \frac{2}{14} \frac{5}{5}$	$\overline{28} \frac{25}{6} \frac{9}{3} \frac{12}{3}$	$\overline{36} \frac{40}{18} \frac{42}{10} \frac{21}{7} \frac{26}{2}$	
$\overline{35} \frac{24}{5} \frac{18}{4} \frac{9}{1} \frac{16}{1}$	$\overline{30} \frac{48}{3} \frac{3}{3}$	$\overline{48} \frac{56}{16} \frac{14}{4} \frac{4}{2} \frac{2}{2}$	$\overline{36} \frac{20}{5} \frac{75}{5} \frac{51}{3} \frac{45}{9}$
$\overline{80} \frac{32}{5} \frac{36}{8} \frac{3}{3} \frac{4}{4}$	$\overline{17} \frac{39}{1} \frac{3}{3} \frac{7}{10} \frac{7}{7}$	$\overline{27} \frac{48}{9} \frac{4}{4} \frac{6}{6} \frac{4}{4} \frac{4}{4}$	$\overline{56} \frac{16}{4} \frac{45}{4} \frac{3}{3}$

Secret Code: 5=O 14=D 3=E 13=R 7=C 4=A 17=T 9=M 15=Y 16=S  
 11=G 1=N 12=V 8=L 6=U 10=I 2=P 20=B 18=W

Name \_\_\_\_\_

# Secret Message Math (Wood)

## ADDITION with FRACTIONS

Add the pair of fractions under each space and match your answer with the corresponding letters below to reveal a helpful tip about wood-use reduction. For example, if an answer is  $\frac{5}{8}$ , put a **P** on the line directly above the math problem. Remember your common denominators!

$$\frac{1}{4} + \frac{1}{4} \quad \frac{1}{4} + \frac{1}{8} \quad \frac{3}{6} + \frac{1}{6} \quad \frac{5}{16} + \frac{1}{8}$$

$$\frac{1}{4} + \frac{3}{8} \quad \frac{1}{7} + \frac{2}{14} \quad \frac{1}{8} + \frac{8}{16} \quad \frac{2}{6} + \frac{1}{3} \quad \frac{2}{6} + \frac{1}{18} \quad \frac{2}{9} + \frac{2}{9}$$

$$\frac{3}{8} + \frac{10}{16} \quad \frac{1}{32} + \frac{1}{16} \quad \frac{2}{6} + \frac{1}{6} \quad \frac{1}{6} + \frac{2}{6} \quad \frac{3}{2} + \frac{4}{2} \quad \frac{2}{5} + \frac{4}{10}$$

$$\frac{3}{8} + \frac{10}{16} \quad \frac{1}{6} + \frac{1}{6} \quad \frac{16}{6} + \frac{1}{6} \quad \frac{1}{24} + \frac{1}{6} \quad \frac{1}{3} + \frac{1}{3} \quad \frac{2}{20} + \frac{7}{10}$$

$$\frac{1}{7} + \frac{2}{14} \quad \frac{1}{6} + \frac{2}{12} \quad \frac{3}{6} + \frac{1}{6} \quad \frac{6}{4} + \frac{4}{8} \quad \frac{1}{32} + \frac{4}{64}$$

$$\frac{2}{5} + \frac{8}{20} \quad \frac{2}{4} + \frac{6}{12} \quad \frac{1}{16} + \frac{1}{16} \quad \frac{2}{32} + \frac{3}{16} \quad \frac{2}{16} + \frac{4}{10} \quad \frac{2}{5} + \frac{4}{5}$$

$$\frac{1}{3} + \frac{4}{12} \quad \frac{12}{10} + \frac{4}{5} \quad \frac{1}{16} + \frac{1}{32} \quad \frac{4}{6} + \frac{1}{3} \quad \frac{3}{16} + \frac{1}{4}$$

$$\frac{1}{6} + \frac{1}{6} \quad \frac{1}{7} + \frac{3}{21} \quad \frac{12}{6} + \frac{5}{6} \quad \frac{1}{5} + \frac{9}{15}$$

$$\frac{1}{7} + \frac{4}{28} \quad \frac{1}{4} + \frac{1}{12} \quad \frac{2}{12} + \frac{4}{6} \quad \frac{4}{18} + \frac{1}{9} \quad \frac{2}{3} + \frac{1}{6} \quad \frac{1}{8} + \frac{1}{8}$$

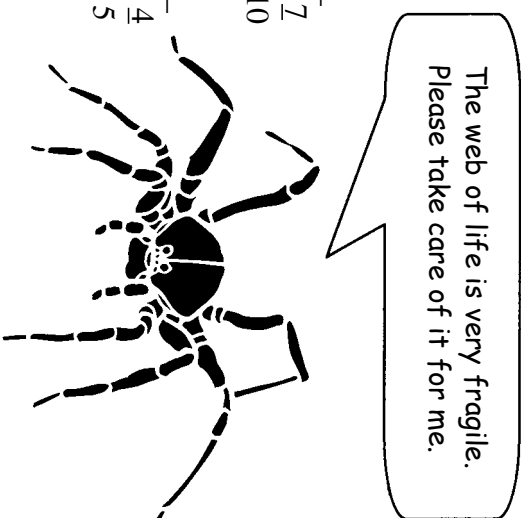
$$\frac{3}{8} + \frac{2}{16} \quad \frac{1}{8} + \frac{6}{24} \quad \frac{2}{8} + \frac{3}{8} \quad \frac{1}{24} + \frac{3}{4} \quad \frac{1}{8} + \frac{3}{8}$$

$$\frac{8}{6} + \frac{2}{24} \quad \frac{3}{4} + \frac{1}{4} \quad \frac{1}{4} + \frac{6}{9} \quad \frac{4}{24} + \frac{10}{12} \quad \frac{14}{12} + \frac{5}{6} \quad \frac{2}{12} + \frac{2}{3}$$

$$\frac{2}{6} + \frac{3}{9} \quad \frac{1}{32} + \frac{1}{16} \quad \frac{6}{10} + \frac{1}{5} \quad \frac{1}{10} + \frac{14}{16}$$

Secret Code:

- |              |            |              |               |              |              |               |              |
|--------------|------------|--------------|---------------|--------------|--------------|---------------|--------------|
| <b>1/8=B</b> | <b>3=G</b> | <b>3/8=I</b> | <b>7/16=H</b> | <b>5/6=E</b> | <b>2=L</b>   | <b>1/2=W</b>  | <b>3/4=D</b> |
| <b>1/3=R</b> | <b>1=T</b> | <b>2/3=C</b> | <b>5/8=P</b>  | <b>2/7=A</b> | <b>1/4=U</b> | <b>3/32=O</b> | <b>4/5=S</b> |



Name \_\_\_\_\_

# Secret Message Math (Wood)

## SUBTRACTION with FRACTIONS

Subtract the pair of fractions under each space and match your answer with the corresponding letters below to spell out a reminder about saving the rainforests. For example, if an answer is  $\frac{3}{8}$ , place a V on the line directly above the math problem. Remember your common denominators!



I may only be a newt, but I know a good idea when I see one!

$$\begin{array}{r} 15 \\ 3 \end{array} - \begin{array}{r} 4 \\ 1 \end{array} \quad \begin{array}{r} 7 \\ 8 \end{array} - \begin{array}{r} 3 \\ 8 \end{array} \quad \begin{array}{r} 6 \\ 5 \end{array} - \begin{array}{r} 4 \\ 5 \end{array} \quad \begin{array}{r} 6 \\ 15 \end{array} - \begin{array}{r} 1 \\ 5 \end{array} \quad \begin{array}{r} 7 \\ 8 \end{array} - \begin{array}{r} 1 \\ 4 \end{array} \quad \begin{array}{r} 4 \\ 5 \end{array} - \begin{array}{r} 2 \\ 10 \end{array} \quad \begin{array}{r} 9 \\ 3 \end{array} - \begin{array}{r} 4 \\ 2 \end{array} \quad \begin{array}{r} 2 \\ 3 \end{array} - \begin{array}{r} 2 \\ 1 \end{array} \quad \begin{array}{r} 1 \\ 5 \end{array} - \begin{array}{r} 2 \\ 5 \end{array} \quad \begin{array}{r} 9 \\ 5 \end{array} - \begin{array}{r} 6 \\ 5 \end{array} \quad \begin{array}{r} 21 \\ 4 \end{array} - \begin{array}{r} 6 \\ 2 \end{array} \quad \begin{array}{r} 8 \\ 15 \end{array} - \begin{array}{r} 4 \\ 3 \end{array} \quad \begin{array}{r} 21 \\ 5 \end{array} - \begin{array}{r} 6 \\ 3 \end{array} \quad \begin{array}{r} 8 \\ 15 \end{array} - \begin{array}{r} 4 \\ 5 \end{array} \quad \begin{array}{r} 21 \\ 15 \end{array} - \begin{array}{r} 4 \\ 5 \end{array} \quad \begin{array}{r} 8 \\ 10 \end{array} - \begin{array}{r} 1 \\ 5 \end{array}$$

$$\begin{array}{r} 8 \\ 16 \end{array} - \begin{array}{r} 1 \\ 4 \end{array} \quad \begin{array}{r} 1 \\ 20 \end{array} - \begin{array}{r} 1 \\ 4 \end{array} \quad \begin{array}{r} 5 \\ 4 \end{array} - \begin{array}{r} 1 \\ 20 \end{array} \quad \begin{array}{r} 5 \\ 10 \end{array} - \begin{array}{r} 4 \\ 5 \end{array} \quad \begin{array}{r} 21 \\ 7 \end{array} - \begin{array}{r} 5 \\ 5 \end{array} \quad \begin{array}{r} 1 \\ 3 \end{array} - \begin{array}{r} 2 \\ 9 \end{array} \quad \begin{array}{r} 4 \\ 5 \end{array} - \begin{array}{r} 3 \\ 5 \end{array} \quad \begin{array}{r} 4 \\ 15 \end{array} - \begin{array}{r} 3 \\ 15 \end{array} \quad \begin{array}{r} 28 \\ 3 \end{array} - \begin{array}{r} 1 \\ 3 \end{array} \quad \begin{array}{r} 7 \\ 8 \end{array} - \begin{array}{r} 1 \\ 2 \end{array} \quad \begin{array}{r} 28 \\ 35 \end{array} - \begin{array}{r} 1 \\ 5 \end{array} \quad \begin{array}{r} 6 \\ 3 \end{array} - \begin{array}{r} 3 \\ 3 \end{array} \quad \begin{array}{r} 12 \\ 5 \end{array} - \begin{array}{r} 8 \\ 5 \end{array} \quad \begin{array}{r} 28 \\ 35 \end{array} - \begin{array}{r} 8 \\ 5 \end{array} \quad \begin{array}{r} 12 \\ 5 \end{array} - \begin{array}{r} 8 \\ 5 \end{array} \quad \begin{array}{r} 28 \\ 35 \end{array} - \begin{array}{r} 8 \\ 5 \end{array}$$

$$\begin{array}{r} 9 \\ 8 \end{array} - \begin{array}{r} 1 \\ 2 \end{array} \quad \begin{array}{r} 5 \\ 5 \end{array} - \begin{array}{r} 2 \\ 4 \end{array} \quad \begin{array}{r} 20 \\ 4 \end{array} - \begin{array}{r} 1 \\ 1 \end{array} \quad \begin{array}{r} 9 \\ 9 \end{array} - \begin{array}{r} 2 \\ 9 \end{array} \quad \begin{array}{r} 5 \\ 10 \end{array} - \begin{array}{r} 1 \\ 10 \end{array} \quad \begin{array}{r} 6 \\ 3 \end{array} - \begin{array}{r} 3 \\ 1 \end{array} \quad \begin{array}{r} 10 \\ 10 \end{array} - \begin{array}{r} 2 \\ 10 \end{array} \quad \begin{array}{r} 9 \\ 9 \end{array} - \begin{array}{r} 3 \\ 9 \end{array} \quad \begin{array}{r} 2 \\ 10 \end{array} - \begin{array}{r} 1 \\ 5 \end{array} \quad \begin{array}{r} 1 \\ 6 \end{array} - \begin{array}{r} 1 \\ 18 \end{array} \quad \begin{array}{r} 9 \\ 15 \end{array} - \begin{array}{r} 6 \\ 4 \end{array} \quad \begin{array}{r} 4 \\ 4 \end{array} - \begin{array}{r} 1 \\ 16 \end{array} \quad \begin{array}{r} 16 \\ 4 \end{array} - \begin{array}{r} 3 \\ 12 \end{array} \quad \begin{array}{r} 12 \\ 15 \end{array} - \begin{array}{r} 3 \\ 4 \end{array} \quad \begin{array}{r} 16 \\ 15 \end{array} - \begin{array}{r} 3 \\ 15 \end{array} \quad \begin{array}{r} 12 \\ 15 \end{array} - \begin{array}{r} 3 \\ 15 \end{array}$$

$$\begin{array}{r} 5 \\ 18 \end{array} - \begin{array}{r} 1 \\ 18 \end{array} \quad \begin{array}{r} 12 \\ 12 \end{array} - \begin{array}{r} 1 \\ 6 \end{array} \quad \begin{array}{r} 3 \\ 4 \end{array} - \begin{array}{r} 1 \\ 4 \end{array} \quad \begin{array}{r} 8 \\ 8 \end{array} - \begin{array}{r} 10 \\ 10 \end{array} \quad \begin{array}{r} 9 \\ 9 \end{array} - \begin{array}{r} 3 \\ 9 \end{array} \quad \begin{array}{r} 2 \\ 14 \end{array} - \begin{array}{r} 13 \\ 9 \end{array} \quad \begin{array}{r} 14 \\ 16 \end{array} - \begin{array}{r} 3 \\ 8 \end{array} \quad \begin{array}{r} 12 \\ 4 \end{array} - \begin{array}{r} 1 \\ 1 \end{array} \quad \begin{array}{r} 2 \\ 3 \end{array} - \begin{array}{r} 2 \\ 6 \end{array} \quad \begin{array}{r} 14 \\ 7 \end{array} - \begin{array}{r} 1 \\ 5 \end{array} \quad \begin{array}{r} 4 \\ 5 \end{array} - \begin{array}{r} 3 \\ 18 \end{array} \quad \begin{array}{r} 6 \\ 5 \end{array} - \begin{array}{r} 1 \\ 18 \end{array} \quad \begin{array}{r} 2 \\ 9 \end{array} - \begin{array}{r} 11 \\ 9 \end{array} \quad \begin{array}{r} 7 \\ 8 \end{array} - \begin{array}{r} 5 \\ 3 \end{array}$$

$$\begin{array}{r} 4 \\ 10 \end{array} - \begin{array}{r} 1 \\ 5 \end{array} \quad \begin{array}{r} 4 \\ 3 \end{array} - \begin{array}{r} 1 \\ 1 \end{array} \quad \begin{array}{r} 9 \\ 9 \end{array} - \begin{array}{r} 6 \\ 4 \end{array} \quad \begin{array}{r} 24 \\ 30 \end{array} - \begin{array}{r} 1 \\ 5 \end{array} \quad \begin{array}{r} 7 \\ 5 \end{array} - \begin{array}{r} 3 \\ 5 \end{array} \quad \begin{array}{r} 24 \\ 30 \end{array} - \begin{array}{r} 1 \\ 5 \end{array} \quad \begin{array}{r} 4 \\ 10 \end{array} - \begin{array}{r} 1 \\ 10 \end{array} \quad \begin{array}{r} 12 \\ 6 \end{array} - \begin{array}{r} 1 \\ 6 \end{array} \quad \begin{array}{r} 15 \\ 15 \end{array} - \begin{array}{r} 4 \\ 15 \end{array} \quad \begin{array}{r} 10 \\ 6 \end{array} - \begin{array}{r} 1 \\ 3 \end{array} \quad \begin{array}{r} 15 \\ 4 \end{array} - \begin{array}{r} 4 \\ 7 \end{array} \quad \begin{array}{r} 12 \\ 4 \end{array} - \begin{array}{r} 7 \\ 7 \end{array} \quad \begin{array}{r} 6 \\ 4 \end{array} - \begin{array}{r} 4 \\ 6 \end{array} \quad \begin{array}{r} 7 \\ 6 \end{array} - \begin{array}{r} 4 \\ 5 \end{array} \quad \begin{array}{r} 7 \\ 6 \end{array} - \begin{array}{r} 2 \\ 5 \end{array}$$

$$\begin{array}{r} 7 \\ 6 \end{array} - \begin{array}{r} 1 \\ 3 \end{array} \quad \begin{array}{r} 10 \\ 15 \end{array} - \begin{array}{r} 1 \\ 3 \end{array} \quad \begin{array}{r} 3 \\ 3 \end{array} - \begin{array}{r} 3 \\ 9 \end{array} \quad \begin{array}{r} 6 \\ 3 \end{array} - \begin{array}{r} 6 \\ 10 \end{array} \quad \begin{array}{r} 12 \\ 5 \end{array} - \begin{array}{r} 6 \\ 5 \end{array} \quad \begin{array}{r} 3 \\ 10 \end{array} - \begin{array}{r} 4 \\ 8 \end{array} \quad \begin{array}{r} 7 \\ 8 \end{array} - \begin{array}{r} 2 \\ 16 \end{array} \quad \begin{array}{r} 8 \\ 8 \end{array} - \begin{array}{r} 1 \\ 2 \end{array} \quad \begin{array}{r} 14 \\ 7 \end{array} - \begin{array}{r} 2 \\ 1 \end{array} \quad \begin{array}{r} 2 \\ 5 \end{array} - \begin{array}{r} 2 \\ 10 \end{array} \quad \begin{array}{r} 10 \\ 5 \end{array} - \begin{array}{r} 1 \\ 6 \end{array} \quad \begin{array}{r} 18 \\ 6 \end{array} - \begin{array}{r} 1 \\ 20 \end{array} \quad \begin{array}{r} 16 \\ 20 \end{array} - \begin{array}{r} 1 \\ 5 \end{array} \quad \begin{array}{r} 16 \\ 20 \end{array} - \begin{array}{r} 1 \\ 5 \end{array}$$

Secret Code: 1/9=W 2/5=M 5/9=C 1/2=O 7/9=U 1/5=A 4/5=H 5/8=K 2/3=S 0=F 8/9=G 1/4=P 2/9=L  
 1/3=N 3/4=D 4=Y 3/8=V

Name \_\_\_\_\_

# Use Less Oil! Word Games

To find some petroleum-based products, look for the number below each line and match it with a letter from the special code below; then put the matching letter in the space provided. For example, the letter matching the number 3 is C. Print a C in every empty space that has a 3 beneath it.

**A B C D E F G H I J K L M N O P Q R S T U V W X Y Z**  
**1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26**

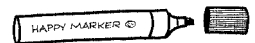
\_\_\_\_\_  
 16 12 1 19 20 9 3 3 15 14 20 1 9 14 5 18 19

Hint: Yogurt cups and water bottles are \_\_\_\_\_ that can be reused over and over.



\_\_\_\_\_  
 16 5 14 19

Hint: Remember to put the caps on your marker \_\_\_\_\_, so they don't dry up.



\_\_\_\_\_  
 3 15 19 13 5 20 9 3 19

Hint: More and more people are wearing \_\_\_\_\_ that have no petroleum-based ingredients.



\_\_\_\_\_  
 3 4 19

Hint: \_\_\_\_\_ (abbreviation) are petroleum-based, so listen well and take good care of them.



\_\_\_\_\_  
 19 20 18 1 23

Hint: When drinking juice or soda, an easy way to reduce plastic use is to drink without a \_\_\_\_\_.



\_\_\_\_\_  
 19 25 14 20 8 5 20 9 3 3 12 15 20 8 9 14 7

Hint: One way to avoid \_\_\_\_\_ is to buy natural clothing made of cotton, hemp, or wool.



\_\_\_\_\_  
 20 1 2 12 5 23 1 18 5 1 14 4 11 9 20 3 8 5 14 23 1 18 5

Hint: Instead of plastic \_\_\_\_\_, use glass and ceramic whenever you can.



Now use the same formula provided above to reveal a rainforest-friendly message below!

\_\_\_\_\_  
 12 5 20 19 20 8 9 14 11 15 6 23 1 25 19

\_\_\_\_\_  
 20 15 21 19 5 12 5 19 19 15 9 12 14 1 20 21 18 1 12 12 25!

Name \_\_\_\_\_

# Oil-Free Cryptograms

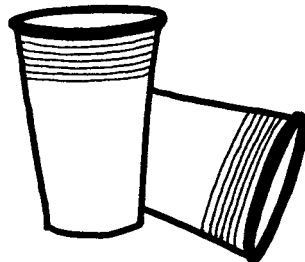
In the spaces provided, write the letter that comes after the letters below the line in the alphabet, and you'll find an important tip about how we can all help protect rainforests!

T R H M F    X N T Q    N V M

L T F    N U D Q    A — M C    N U D Q    H M R S D — C    N E

O K — R S H B    B T O R

G D K O R    Q D C T B D    N H K    T R D !



Now, using the same pattern as above, find some examples of ways to reduce oil use. Every bit you save helps save the rainforests!

— — — — — A —  
S G D Q L N R S — S

To reduce oil use, turn down the \_\_\_\_\_ and put on a hat.

— — — — —  
R X M S G D S H B

Instead of \_\_\_\_\_ clothes, go “oil-free” from your head to your toes.

— A — —  
A — F R

Shop around with the best; \_\_\_\_\_ of cloth or mesh pass the test.

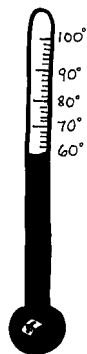
— — — — —  
A N S S K D

A juice \_\_\_\_\_ made of glass? Share that idea with your class!

— — — — — and  
E N Q J R

On a picnic, don't settle for plastic \_\_\_\_\_ and \_\_\_\_\_; instead, use those made of metal.

— — — — —  
R O N N M R

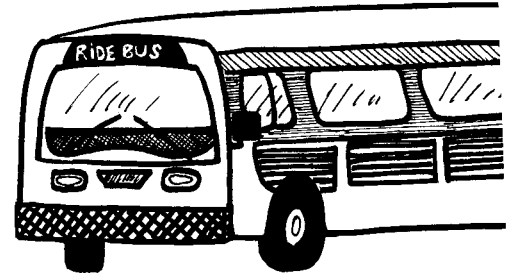


Name \_\_\_\_\_

# Unscrambling Oil Use!

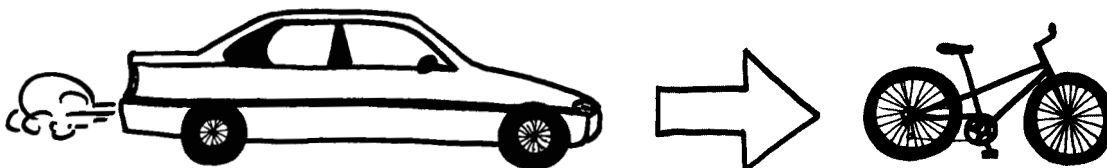
Unscramble these puzzles to form nine words or phrases that show us how to use less oil. Remember, reducing oil use means using less gasoline and plastic.

- S H E M G A B = \_\_\_\_\_
- D I R E K I B E = \_\_\_\_\_
- L O C O **P** A R = \_\_\_\_\_
- S E **L** S S A G = \_\_\_\_\_
- S U R E E = \_\_\_\_\_
- E C R Y L **E** C = \_\_\_\_\_
- C U **E** R E D = \_\_\_\_\_
- S **L** S E L I O = \_\_\_\_\_
- S A M S N I T S R A **T** = \_\_\_\_\_



Now, arrange the **bold** letters to form a surprise message below:

Using \_\_\_\_\_ is a rainforest-friendly goal!



Use the list above as a guide and fill in the blanks below to learn ways to use less oil.

R E C Y C L E

- \_\_\_ **E** \_\_\_
- \_\_\_ **S** \_\_\_
- \_\_\_ **S** \_\_\_
- \_\_\_ **P** \_\_\_
- \_\_\_ **E** \_\_\_
- \_\_\_ **T** \_\_\_
- \_\_\_ **R** \_\_\_
- \_\_\_ **O** \_\_\_
- \_\_\_ **L** \_\_\_

Bringing in used motor oil to \_\_\_\_\_ is one part of the cycle.

Using paper or plastic is a drag—use this for shopping instead!

Toss the plastic cup? Just refuse! Instead, simply \_\_\_\_\_.

Walking may not be as fast, but you’re using \_\_\_\_\_.

When sharing autos, this is the motto: “\_\_\_\_\_’s rule!”

A fun and oil-free way to travel that most kids like.

By bus, train, or subway—\_\_\_\_\_ is the best way!

Using alternatives to plastic is a great way to \_\_\_\_\_ oil use.

Turn down the heat, don’t boil; its easy to use \_\_\_\_\_!

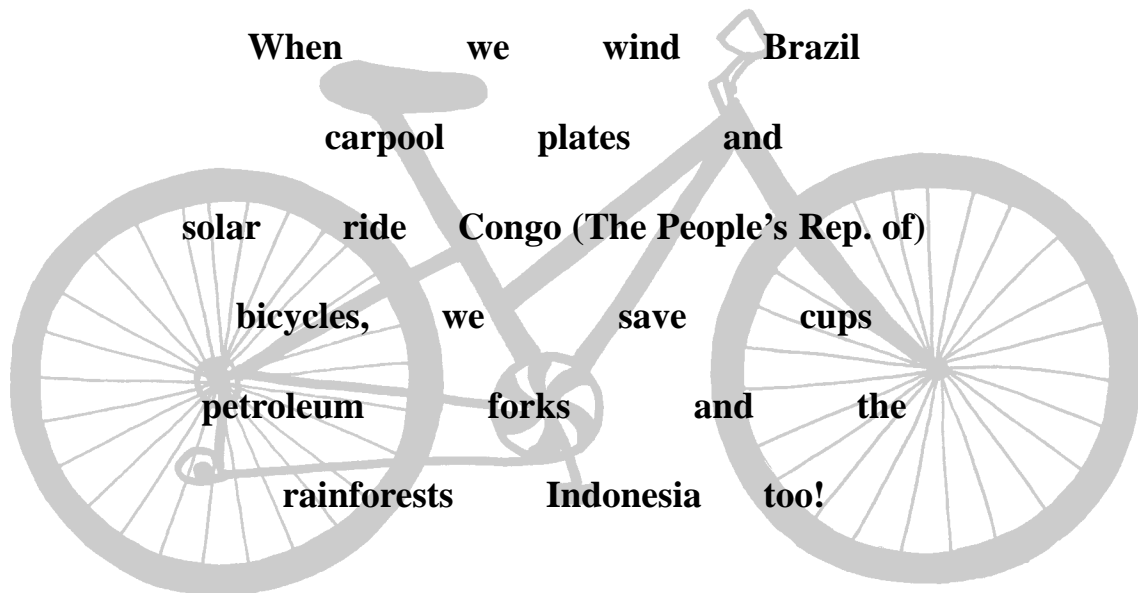
Cotton is natural, it’s an easy fiber to grow—so choose it instead of polyester, when buying new \_\_\_\_\_.



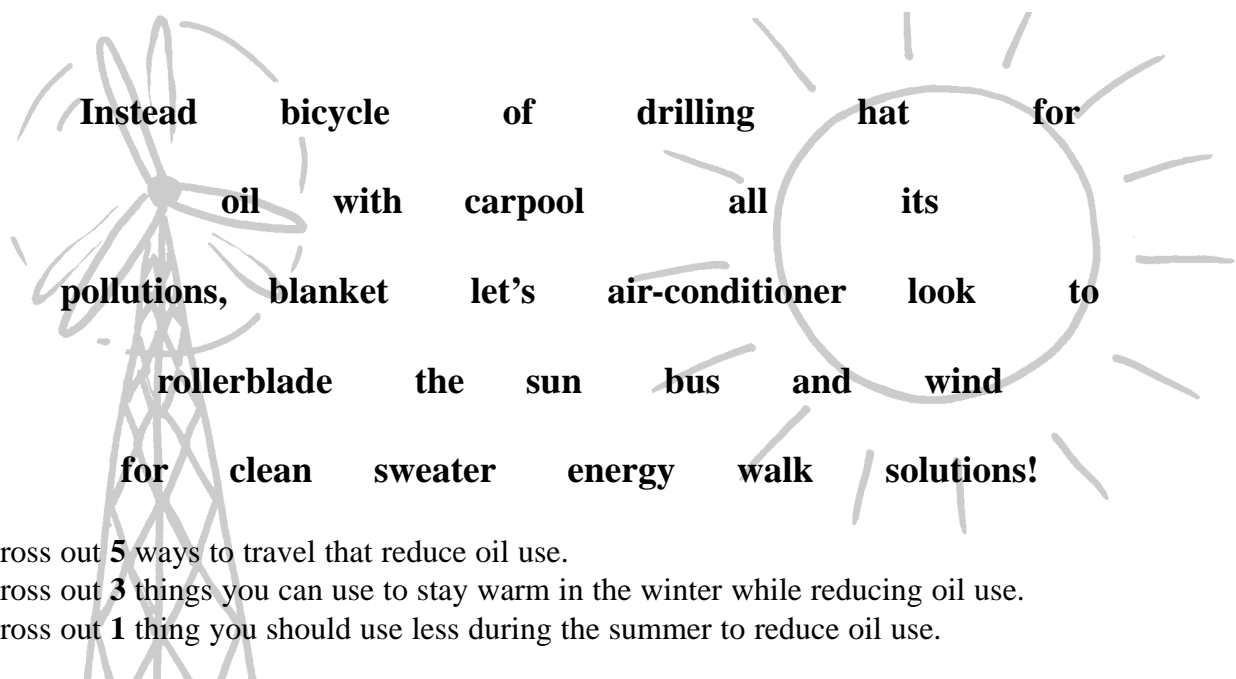
Name \_\_\_\_\_

## Use Less Oil! Hidden Messages

To find two important messages about how you can help save the rainforests, follow the directions below and circle the remaining words. Use your *Rainforests Forever!* glossary if you need help.



- Cross out **3** tableware items often made of plastic.
- Cross out **3** nations where tropical rainforests are being damaged.
- Cross out **2** alternative types of energy that use renewable resources.



- Cross out **5** ways to travel that reduce oil use.
- Cross out **3** things you can use to stay warm in the winter while reducing oil use.
- Cross out **1** thing you should use less during the summer to reduce oil use.

Name \_\_\_\_\_

# Words Change... Worlds Change (Oil Use)

With the clues provided, change the first word into the final word—one letter at a time.

Do me a big favor will you? Please try to use less oil and gas so that my rainforest home can be saved. Every little bit helps a lot! Thanks, friend.



C A R S  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 B I K E

Trucks and \_\_\_\_\_ use a lot of oil and gas.  
 If it weren't for rainforests, we wouldn't have chocolate \_\_\_\_\_!  
 After a while cleared rainforests become \_\_\_\_\_ like a desert.  
 Rainforests provide foods like vanilla that we use to \_\_\_\_\_ cookies.  
 Instead of driving so much, encourage your friend to use her or his \_\_\_\_\_.

H E A T  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 B E A M

The temperature of the planet will \_\_\_\_\_ up if rainforests are destroyed.  
 You can \_\_\_\_\_ birds, monkeys, and insects make sounds in the rainforest.  
 When oil is drilled in the rainforest it \_\_\_\_\_s apart the lives of the indigenous peoples who have lived there for thousands of years.  
 Let's \_\_\_\_\_ up together for the rainforests and use less oil when we can.  
 Using the \_\_\_\_\_s of the sun to fuel our homes and schools is way cool!

C A N 'T  
 \_\_\_\_\_  
 \_\_\_\_\_  
 W I N D

The rainforests \_\_\_\_\_ stay healthy if we keep using petroleum for energy.  
 If we \_\_\_\_\_ to save the rainforests, we have to eventually stop using oil.  
 We don't need a magic \_\_\_\_\_ to make this change happen;  
 we just need to use things like the sun and \_\_\_\_\_ for power!

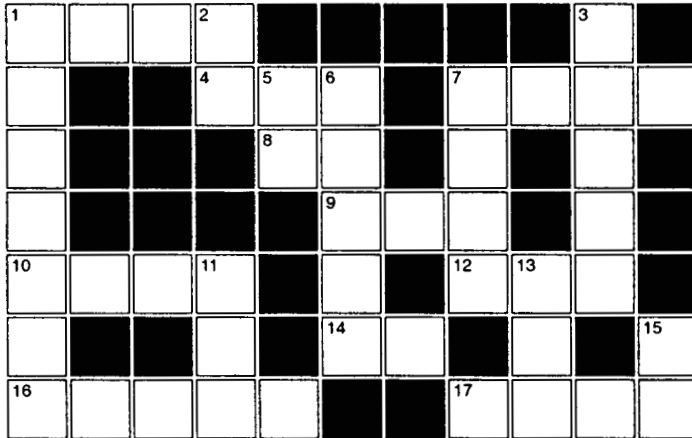
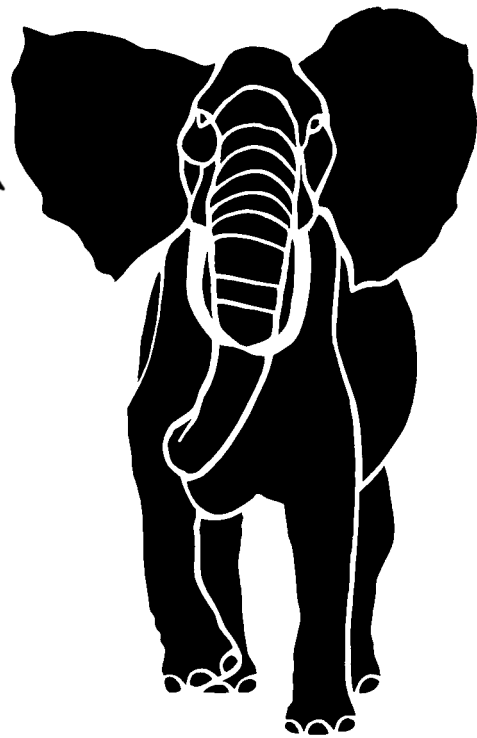
O I L  
 (un)' \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 S U N

The drilling for \_\_\_\_\_ in rainforests will continue  
 '\_\_\_\_\_ more people use alternative sources of energy.  
 We already know about recycling cans made of \_\_\_\_\_ or aluminum.  
 It makes a \_\_\_\_\_ of difference when we each do our part together.  
 From daughter to mother and \_\_\_\_\_ to father, we can show parents how to use less oil.  
 Let's all look for clean and renewable sources like the \_\_\_\_\_ for power!

Name \_\_\_\_\_

# Use Less Oil! Crossword Fun

Where's a fella like me going to live if the rainforests disappear?



### ACROSS

1. Electric and solar-powered \_\_\_\_\_ get you where you need to go without using oil.
4. When \_\_\_\_\_ gets drilled from the rainforest, it often spills on the ground and pollutes the rivers and streams.
7. When you \_\_\_\_\_ friends to go to the park, walk, ride your bike, or take the bus.
8. Spanish speakers from Peru say this word for “yes.”
9. Using less \_\_\_\_\_ by riding our bike instead of driving a car is a great way to help the rainforests.
10. Many people have a lot of \_\_\_\_\_ that we will save the rainforests in time!
12. Everyone \_\_\_\_\_ the power to make a positive difference in this world.
14. One great way \_\_\_\_\_ use less oil is to put on a sweater instead of turning up the heat.
16. Using less oil \_\_\_\_\_ the rainforest and all the animals that live there.
17. It's \_\_\_\_\_ to use plastic when you must, but try to use less of it whenever you can!

### DOWN

1. When choosing \_\_\_\_\_, remember that natural fibers like cotton, wool, and hemp are better for the rainforests than oil-based synthetic fabrics like polyester or nylon.
2. \_\_\_\_\_ much rainforest could be saved if we fueled our world with solar power or wind power instead of with fossil fuels.
3. Burning oil doesn't just pollute the air, it also \_\_\_\_\_ up the atmosphere and makes the planet get too warm.
5. Buying juice or milk in glass bottles instead of in plastic \_\_\_\_\_ a great way to use less oil.
6. Turn off the \_\_\_\_\_s when you leave the room—that helps reduce the amount of oil we consume!
7. Take cloth or \_\_\_\_\_ bags with you to the market instead of using plastic bags.
11. Keep your \_\_\_\_\_s open for other ways to reduce plastic use!
13. \_\_\_\_\_ your parents to help you reduce oil use and plastic use at home.
15. \_\_\_\_\_ doing all we can to reduce oil use, we are being rainforest heroes who can help save the rainforest in time!

Name \_\_\_\_\_

# Use Less Oil!

## Super Crossword Fun

### ACROSS

5. \_\_\_ takes a lot of oil to use air conditioning. Let's conserve!
6. Small South American country on the equator; a prime target for oil exploration.
10. Petroleum-based products which are found in such cloth fibers as polyester.
16. Education is our best \_\_\_\_\_ for improving our world.
17. Let's \_\_\_ what we can do to help others look for oil alternatives.
18. Another word for oil.
20. Half of something (rhymes with "semi").
21. By going for a \_\_\_\_\_ on your skateboard or bicycle—instead of in your family's car—you are helping reduce oil use.
22. \_\_\_ are the ones who can save the rainforests!
23. Often with indigenous people, tools are passed on from father to \_\_\_\_\_.
24. Turning down the thermostat can \_\_\_\_\_ the amount of oil we use.
26. Purchasing juice in glass \_\_\_\_\_ (instead of plastic) is one way to help reduce oil use.
28. Styrofoam is \_\_\_ example of a petroleum-based product that is bad for the environment.
30. Scientific abbreviation for "aluminum," and also a male's name.
31. There is \_\_\_ much we can do to save the rainforests by reducing our oil use.
32. "Tic-\_\_\_\_" goes the clock as time is running out to save the rainforests!
34. Just like sweeping with a broom, you are \_\_\_\_\_ the air when you choose oil-free alternatives because more rainforest trees can be left standing.
36. What does your school \_\_\_ to reduce its use of oil-based products? Share your ideas!
37. When you leave a room, conserve energy by not leaving the lights \_\_\_.

Save the rainforests so  
I can keep hanging out!

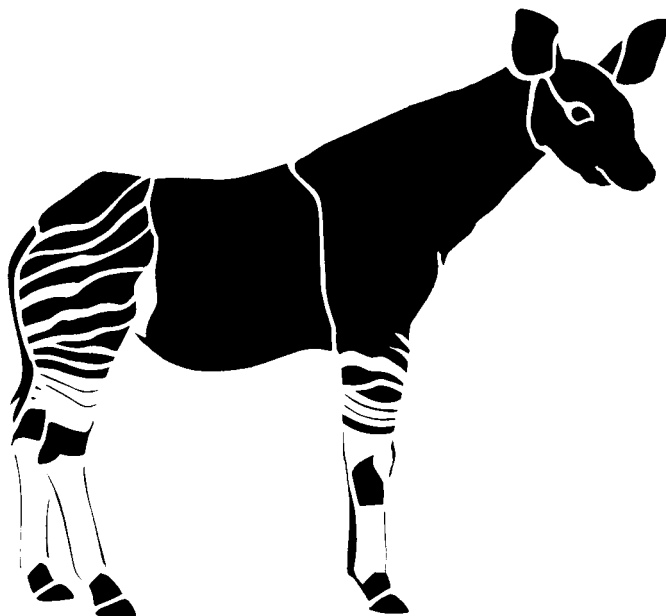
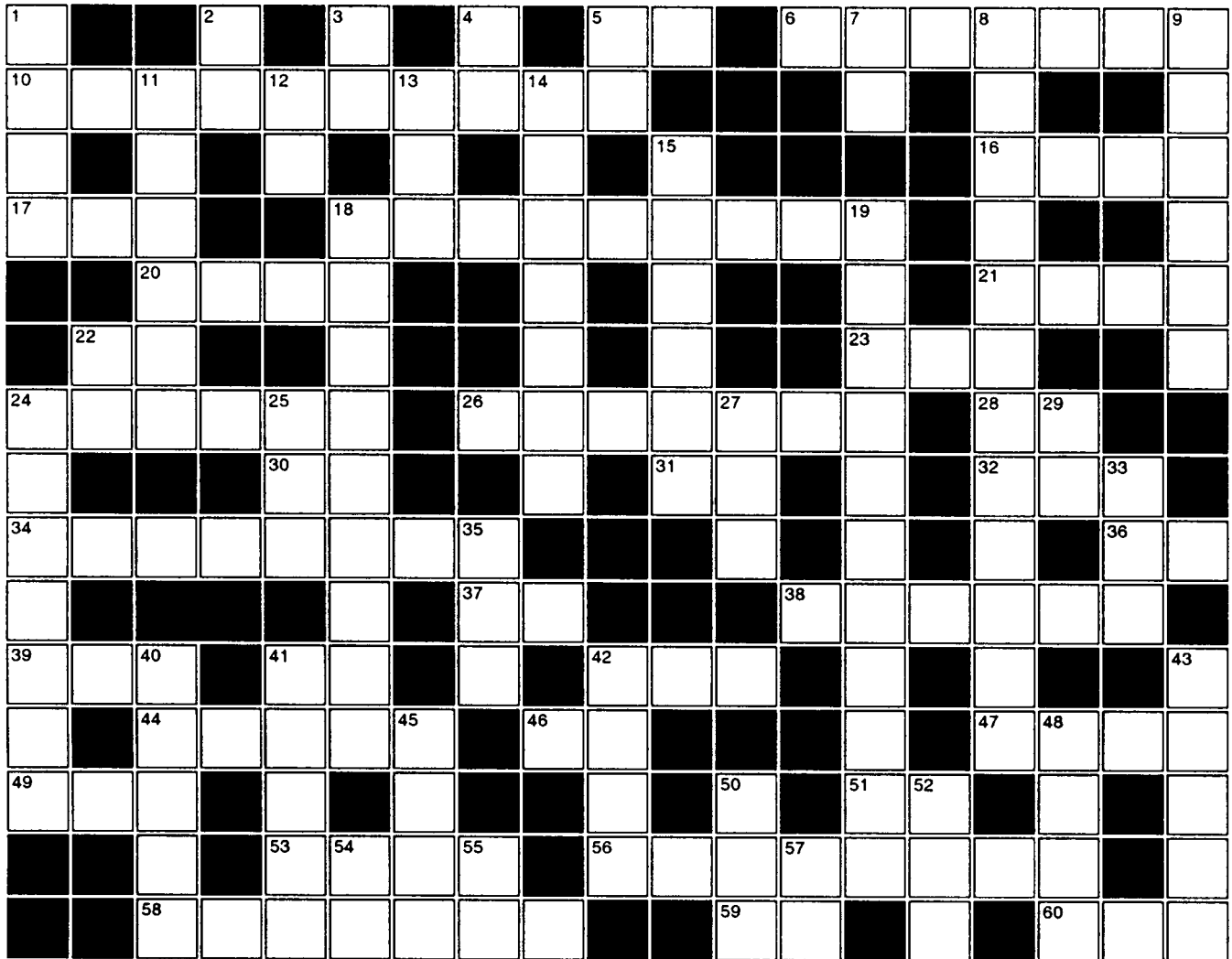


38. Instead of using plastic bags, try using this kind of bag when grocery shopping.
39. To drill and transport oil from the rainforests, trees are \_\_\_ down, and rivers are often polluted.
41. Let it \_\_, naturally.
42. Solar energy is a fantastic alternative to fossil fuels. It comes from the \_\_\_\_\_.
44. \_\_\_\_\_ yogurt cups, plastic bags, and other petroleum-based products.
46. Rainforests are where it's \_\_\_!
47. The animals of the rainforest need our help. Let's \_\_\_\_\_ their forest homes!
49. The aye-aye of Madagascar's rainforest are famous for their big \_\_\_s.
51. \_\_\_ really helps save the rainforests if we use wind power instead of oil.
53. When trees are cut down for oil pipelines, the food the monkey \_\_\_\_\_ disappears.
56. Many toys and containers are made from these oil-based products.
58. Some people help save the rainforests by looking for ways to market \_\_\_\_\_able products like nuts. Unlike cutting down the trees to drill for oil, nuts can be harvested and sold without harming the rainforests.
59. When you \_\_\_ to the store, choose products with little or no oil-based packaging.
60. To find more \_\_\_, companies often cut down trees and drill for it.

**Use Less Oil!****DOWN**

1. As we learn more about tropical rainforests from indigenous peoples, it is exciting to realize the many \_\_\_\_\_ that plants have (e.g. for medicine, food, clothing).
2. \_\_\_\_ is up to all of us to use less oil!
3. It's great to \_\_\_\_ helping the animals of the rainforest by using alternatives to oil.
4. Abbreviation for Hawaii.
5. \_\_\_\_ it necessary to turn up the heat and use more oil when we have blankets and sweaters?
7. The initials of a Latin American nation which is trying to preserve its rainforests. (Hint: the name of the country is two words.)
8. For clothing, natural fibers like cotton and hemp are great \_\_\_\_\_ to synthetic fibers like nylon and polyester.
9. \_\_\_\_\_ blades and skates are great modes of travel that require no gas.
11. Less oil is \_\_\_\_\_ when we choose wind power to meet our energy uses.
12. If you were in Ecuador, you might say "hola" instead of "\_\_\_\_."
13. Using solar energy and wind power are two of \_\_\_\_ many ways to reduce oil use.
14. When two or more people share an automobile, they \_\_\_\_\_.
15. It's a healthier world when rainforest \_\_\_\_\_ like the rafflesia (world's largest flower) can live long and flourish.
18. Oil \_\_\_\_\_ in the rainforest cause damage and sometimes leak.
19. Examples of this include: bus, train, and subway (two words).
22. \_\_\_\_ can help save rainforests by doing simple things like not using plastic straws or lids at fast-food restaurants.
24. If plastic containers are used, be sure to \_\_\_\_\_ them afterwards.
27. A \_\_\_\_ of animal species will become extinct if we don't save the rainforests soon.
29. For many people, there is \_\_\_\_ better way to travel than with their bicycle.
33. Listen up! Cassettes and \_\_\_\_ are petroleum-based, so take good care of them.
35. If we love the animals that live in the rainforest, we have \_\_\_\_ to protect their homes from being destroyed!
40. These are damaged when people drill for and transport oil.
41. When we ride \_\_\_\_\_, we do a lot to help the rainforests by using less gasoline.
42. Since the products we choose affect how much oil we use, \_\_\_\_\_ and think about what something is made of before buying it.
43. Instead of plastic tableware for picnics and parties, simply use your own \_\_\_\_\_ forks, spoons, and knives and wash them later.
45. After you \_\_\_\_\_ sandwich that was in a zip-lock plastic bag, can you think of a way to reuse the bag instead of throwing it away?
48. Along with recycling plastics at home, you can \_\_\_\_\_ encourage your parents to recycle at work.
50. Whenever you shop, use a canvas or mesh \_\_\_\_\_ instead of one from paper or plastic.
52. Here's a timely \_\_\_\_: put canvas bags in the trunk of the car so that they are always there when you go to the store.
54. The rainforest canopy is found \_\_\_\_ the top.
55. If you were in Mexico and wanted to say "yes" to reusable plates instead of those made from plastic, you would say "\_\_\_\_."
57. We have the power to save the rainforests, \_\_\_\_ let's help others use less oil!

# Use Less Oil!



I'm an Okapi. I live in the African rainforests. There are lots of wonderful animals where I live, such as gorillas, forest elephants, chimpanzees, duikers, parrots, and panthers. The Bakola people (often called "Pygmy") also live in the African rainforest. They know how to live in balance with nature. Will you please help us save our home?

Name \_\_\_\_\_

# Secret Message Math (Oil)

## ADDITION and SUBTRACTION with WHOLE NUMBERS

Add or subtract the numbers under each space and match your answers with the corresponding letters below to reveal a timely tip about oil-use reduction. For example, if an answer is **40**, put a **T** on the line directly above the math problem.



I'm just batty about the rainforests!

$$\underline{\quad} \quad \underline{\quad} \quad (4 + 4) \quad \underline{\quad} \quad \underline{\quad} \quad (6 + 24) \quad \underline{\quad} \quad \underline{\quad} \quad (18 + 6) \quad \underline{\quad} \quad \underline{\quad} \quad (8 + 14)$$

$$\underline{\quad} \quad \underline{\quad} \quad (36 + 2) \quad \underline{\quad} \quad \underline{\quad} \quad (10 + 2) \quad \underline{\quad} \quad \underline{\quad} \quad (52 - 44) \quad \underline{\quad} \quad \underline{\quad} \quad (24 - 16) \quad \underline{\quad} \quad \underline{\quad} \quad (28 + 14) \quad \underline{\quad} \quad \underline{\quad} \quad (36 - 6) \quad \underline{\quad} \quad \underline{\quad} \quad (45 - 7) \quad \underline{\quad} \quad \underline{\quad} \quad (48 - 28) \quad \underline{\quad} \quad \underline{\quad} \quad (20 + 4) \quad \underline{\quad} \quad \underline{\quad} \quad (10 - 4)$$

$$\underline{\quad} \quad \underline{\quad} \quad (18 - 4) \quad \underline{\quad} \quad \underline{\quad} \quad (34 + 4) \quad \underline{\quad} \quad \underline{\quad} \quad (4 + 16) \quad \underline{\quad} \quad \underline{\quad} \quad (20 - 12) \quad \underline{\quad} \quad \underline{\quad} \quad (60 - 20) \quad \underline{\quad} \quad \underline{\quad} \quad (40 - 10) \quad \underline{\quad} \quad \underline{\quad} \quad (20 - 4) \quad \underline{\quad} \quad \underline{\quad} \quad (36 - 16) \quad \underline{\quad} \quad \underline{\quad} \quad (20 + 14) \quad \underline{\quad} \quad \underline{\quad} \quad (20 - 8)$$

$$\underline{\quad} \quad \underline{\quad} \quad (20 - 2) \quad \underline{\quad} \quad \underline{\quad} \quad (4 + 16) \quad \underline{\quad} \quad \underline{\quad} \quad (44 - 40) \quad \underline{\quad} \quad \underline{\quad} \quad (32 - 24) \quad \underline{\quad} \quad \underline{\quad} \quad (55 - 15) \quad \underline{\quad} \quad \underline{\quad} \quad (20 + 22) \quad \underline{\quad} \quad \underline{\quad} \quad (44 - 8) \quad \underline{\quad} \quad \underline{\quad} \quad (60 - 48) \quad \underline{\quad} \quad \underline{\quad} \quad (4 + 8) \quad \underline{\quad} \quad \underline{\quad} \quad (2 + 12)$$

$$\underline{\quad} \quad \underline{\quad} \quad (12 + 22) \quad \underline{\quad} \quad \underline{\quad} \quad (36 - 16) \quad \underline{\quad} \quad \underline{\quad} \quad (24 + 6) \quad \underline{\quad} \quad \underline{\quad} \quad (16 + 8) \quad \underline{\quad} \quad \underline{\quad} \quad (40 - 12) \quad \underline{\quad} \quad \underline{\quad} \quad (50 - 8) \quad \underline{\quad} \quad \underline{\quad} \quad (50 - 16) \quad \underline{\quad} \quad \underline{\quad} \quad (6 + 6) \quad \underline{\quad} \quad \underline{\quad} \quad (48 - 40) \quad \underline{\quad} \quad \underline{\quad} \quad (26 + 14) \quad \underline{\quad} \quad \underline{\quad} \quad (2 + 6)$$

$$\underline{\quad} \quad \underline{\quad} \quad (30 - 2) \quad \underline{\quad} \quad \underline{\quad} \quad (12 + 8) \quad \underline{\quad} \quad \underline{\quad} \quad (30 - 6) \quad \underline{\quad} \quad \underline{\quad} \quad (100 - 60) \quad \underline{\quad} \quad \underline{\quad} \quad (50 - 30) \quad \underline{\quad} \quad \underline{\quad} \quad (40 - 32) \quad \underline{\quad} \quad \underline{\quad} \quad (70 - 30) \quad \underline{\quad} \quad \underline{\quad} \quad (16 + 14) \quad \underline{\quad} \quad \underline{\quad} \quad (22 - 6) \quad \underline{\quad} \quad \underline{\quad} \quad \text{!}$$

**Secret Code:**    28=F   16=C   20=A   48=U   36=K   24=N   30=I   8=S   40=T  
                      22=G   12=E   4=Y   18=W   34=R   38=L   14=P   6=D   42=O

Name \_\_\_\_\_

# Secret Message Math (Oil)

## MULTIPLICATION with WHOLE NUMBERS

Multiply the numbers under each space and match your answers with the corresponding letters below to reveal a timely tip about oil-use reduction. For example, if an answer is **40**, put a **G** on the line directly above the math problem.

$$\overline{(5 \times 1)} \quad \overline{(45 \times 2)} \quad \overline{(3 \times 5)} \quad \overline{(14 \times 5)} \quad \overline{(5 \times 8)} \quad \overline{(11 \times 5)} \quad \overline{(4 \times 5)} \quad \overline{(9 \times 10)} \quad \overline{(30 \times 3)}$$

$$\overline{(3 \times 25)} \quad \overline{(3 \times 5)} \quad \overline{(5 \times 11)} \quad \overline{(5 \times 5)} \quad \overline{(15 \times 3)} \quad \overline{(5 \times 15)} \quad \overline{(4 \times 15)} \quad \overline{(1 \times 5)} \quad \overline{(17 \times 5)} \quad \overline{(21 \times 5)} \quad \overline{(18 \times 5)}$$

$$\overline{(3 \times 5)} \quad \overline{(35 \times 2)} \quad \overline{(25 \times 3)} \quad \overline{(1 \times 5)} \quad \overline{(9 \times 5)} \quad \overline{(30 \times 2)} \quad \overline{(25 \times 4)} \quad \overline{(5 \times 3)} \quad \overline{(5 \times 11)} \quad \overline{(25 \times 2)}$$

$$\overline{(5 \times 11)} \quad \overline{(5 \times 3)} \quad \overline{(11 \times 10)} \quad \overline{(4 \times 5)} \quad \overline{(45 \times 2)} \quad \overline{(2 \times 5)} \quad \overline{(4 \times 5)} \quad \overline{(11 \times 5)} \quad \overline{(5 \times 5)} \quad \overline{(5 \times 18)} \quad \overline{(9 \times 10)} \quad \overline{(4 \times 25)} \quad \overline{(5 \times 22)} \quad \overline{(10 \times 2)}$$

$$\overline{(5 \times 9)} \quad \overline{(20 \times 5)} \quad \overline{(3 \times 5)} \quad \overline{(35 \times 2)} \quad \overline{(40 \times 2)} \quad \overline{(3 \times 25)} \quad \overline{(5 \times 9)} \quad \overline{(10 \times 2)} \quad \overline{(2 \times 45)} \quad \overline{(5 \times 21)} \quad \overline{(30 \times 3)} \quad \overline{(3 \times 30)} \quad \overline{(5 \times 15)}$$

$$\overline{(10 \times 10)} \quad \overline{(5 \times 11)} \quad \overline{(11 \times 5)} \quad \overline{(5 \times 21)} \quad \overline{(5 \times 2)} \quad \overline{(10 \times 2)} \quad \overline{(3 \times 5)} \quad \overline{(5 \times 9)} \quad \overline{(10 \times 10)} \quad \overline{(14 \times 5)} \quad \overline{(1 \times 15)} \quad \overline{(7 \times 5)} \quad \overline{(5 \times 20)} \quad \overline{(5 \times 11)} \quad \overline{(18 \times 5)}$$

$$\overline{(5 \times 17)} \quad \overline{(50 \times 2)} \quad \overline{(2 \times 35)} \quad \overline{(3 \times 30)} \quad \overline{(1 \times 5)} \quad \overline{(15 \times 3)} \quad \overline{(22 \times 5)} \quad \overline{(3 \times 5)} \quad \overline{(55 \times 2)} \quad \overline{(2 \times 10)}$$

**Secret Code:**      **100=A**      **45=R**      **5=U**      **105=T**      **90=S**      **20=E**      **35=M**      **70=N**      **90=S**      **25=P**  
**65=B**      **40=G**      **110=V**      **80=F**      **55=L**      **15=I**      **50=Y**      **10=H**      **60=D**      **75=O**      **85=C**



Name \_\_\_\_\_

# Secret Message Math (Oil)

## DIVISION with WHOLE NUMBERS

Divide the numerator by the denominator under each space and match your answers to the corresponding letters below to discover a helpful tip about oil-use reduction. For example, if an answer is **8**, place a **T** on the line directly above the math problem.

$$\begin{array}{r} \underline{45} \overline{70} \quad \underline{24} \overline{63} \quad \underline{18} \overline{27} \quad \underline{81} \overline{14} \\ 3 \quad 7 \quad 8 \quad 7 \quad 9 \quad 9 \quad 9 \quad 7 \end{array}$$

$$\begin{array}{r} \underline{108} \overline{88} \quad \underline{40} \overline{56} \quad \underline{32} \overline{60} \quad \underline{35} \overline{16} \quad \underline{20} \overline{72} \quad \underline{35} \overline{9} \\ 9 \quad 8 \quad 8 \quad 7 \quad 2 \quad 4 \quad 5 \quad 8 \quad 5 \quad 9 \quad 7 \end{array}$$

$$\begin{array}{r} \underline{64} \overline{96} \quad \underline{48} \overline{24} \quad \underline{48} \overline{45} \quad \underline{80} \overline{66} \\ 8 \quad 6 \quad 8 \quad 6 \quad 9 \quad 8 \quad 8 \quad 11 \end{array}$$

$$\begin{array}{r} \underline{8} \overline{70} \quad \underline{68} \overline{54} \quad \underline{80} \overline{18} \quad \underline{72} \overline{36} \\ 8 \quad 14 \quad 4 \quad 3 \quad 16 \quad 2 \quad 9 \quad 4 \quad 9 \quad 13 \quad 4 \end{array}$$

$$\begin{array}{r} \underline{42} \overline{99} \quad \underline{63} \overline{64} \quad \underline{32} \overline{21} \quad \underline{84} \overline{90} \quad \underline{8} \overline{52} \\ 3 \quad 9 \quad 9 \quad 16 \quad 4 \quad 7 \quad 7 \quad 6 \quad 12 \quad 4 \quad 13 \end{array}$$

Reminder your parents of this helpful tip... They can help save the rainforests, too!



$$\begin{array}{r} \underline{34} \overline{44} \quad \underline{72} \overline{2} \\ 2 \quad 11 \quad 12 \end{array}$$

$$\begin{array}{r} \underline{14} \overline{45} \quad \underline{9} \overline{39} \quad \underline{90} \overline{40} \quad \underline{72} \overline{18} \\ 2 \quad 5 \quad 9 \quad 3 \quad 18 \quad 4 \quad 12 \end{array}$$

**Secret Code:** 1=Y 12=C 15=B 6=E 18=D 16=H 10=R 2=G 11=L  
 5=0 3=I 14=P 8=T 9=N 4=S 13=M 17=U 7=A

Name \_\_\_\_\_

# Secret Message Math (Oil)

ADDITION with FRACTIONS

Add the pair of fractions under each space and match your answer with the corresponding letters below to reveal a helpful tip about oil-use reduction. For example, if an answer is  $\frac{3}{8}$ , put a G on the line directly above the math problem.

Remember your common denominators!

Jump into action and reduce oil use whenever possible. It's easy if you try!



$$\frac{3}{2} + \frac{1}{2} \quad \frac{1}{8} + \frac{1}{8} \quad \frac{18}{9} + \frac{3}{3} \quad \frac{6}{4} + \frac{8}{4} \quad \frac{3}{8} + \frac{1}{4} \quad \frac{8}{2} + \frac{18}{3} \quad \frac{3}{2} + \frac{5}{10} \quad \frac{6}{7} + \frac{2}{14} \quad \frac{10}{5} + \frac{21}{7} \quad \frac{18}{6} + \frac{9}{3} \quad \frac{4}{4} + \frac{16}{4}$$

$$\frac{1}{8} + \frac{2}{16} \quad \frac{8}{8} + \frac{6}{8} \quad \frac{2}{4} + \frac{3}{6} \quad \frac{10}{2} + \frac{8}{4} \quad \frac{8}{10} + \frac{1}{5} \quad \frac{8}{12} + \frac{48}{12} \quad \frac{1}{16} + \frac{1}{16} \quad \frac{1}{5} + \frac{8}{10} \quad \frac{5}{5} + \frac{2}{4} \quad \frac{20}{5} + \frac{15}{3} \quad \frac{3}{4} + \frac{4}{8} \quad \frac{3}{8} + \frac{4}{8} \quad \frac{15}{5} + \frac{14}{7}$$

$$\frac{8}{2} + \frac{16}{4} \quad \frac{12}{6} + \frac{10}{2} \quad \frac{7}{8} + \frac{2}{16} \quad \frac{8}{8} + \frac{15}{5} \quad \frac{10}{2} + \frac{12}{4} \quad \frac{1}{4} + \frac{4}{5} \quad \frac{8}{4} + \frac{6}{2} \quad \frac{4}{16} + \frac{2}{8} \quad \frac{1}{6} + \frac{4}{12} \quad \frac{1}{3} + \frac{2}{5} \quad \frac{30}{5} + \frac{4}{1} \quad \frac{8}{4} + \frac{5}{4} \quad \frac{24}{4} + \frac{12}{3}$$

$$\frac{10}{5} + \frac{7}{1} \quad \frac{1}{1} + \frac{2}{8} \quad \frac{8}{8} + \frac{3}{6} \quad \frac{12}{8} + \frac{8}{8} \quad \frac{1}{2} + \frac{1}{1} \quad \frac{6}{3} + \frac{7}{7} \quad \frac{9}{3} + \frac{10}{10} \quad \frac{1}{4} + \frac{1}{8} \quad \frac{12}{6} + \frac{8}{2} \quad \frac{14}{7} + \frac{5}{7} \quad \frac{1}{1} + \frac{4}{2} \quad \frac{18}{3} + \frac{9}{3} \quad \frac{3}{4} + \frac{1}{4} \quad \frac{10}{8} + \frac{9}{3}$$

Secret Code:

5/8=F    6=T    7=H    2=R    1=E    3/2=D    3=I    7/8=U    8=W    1/2=V  
 4=N    1/8=P    5/4=Y    1/4=A    12=L    10=O    9=B    5=S    3/8=G

Name \_\_\_\_\_

# Secret Message Math (Oil)

## SUBTRACTION with FRACTIONS

Subtract the pair of fractions under each space and match your answer with the corresponding letters below to spell out a powerful reminder about saving the rainforests. For example, if an answer is  $\frac{7}{12}$  place a **T** on the line directly above the math problem. Remember your common denominators!

$$\begin{array}{r} \frac{6}{6} - \frac{1}{3} \\ 4 \quad 3 \end{array} \quad \begin{array}{r} \frac{1}{8} - \frac{1}{8} \\ 4 \quad 8 \end{array} \quad \begin{array}{r} \frac{1}{12} - \frac{3}{12} \\ 1 \quad 12 \end{array} \quad \begin{array}{r} \frac{1}{9} - \frac{7}{9} \\ 1 \quad 9 \end{array} \quad \begin{array}{r} \frac{7}{6} - \frac{1}{6} \\ 6 \quad 3 \end{array} \quad \begin{array}{r} \frac{1}{1} - \frac{5}{1} \\ 1 \quad 12 \end{array} \quad \begin{array}{r} \frac{8}{2} - \frac{6}{2} \\ 2 \quad 3 \end{array} \quad \begin{array}{r} \frac{1}{1} - \frac{4}{1} \\ 1 \quad 9 \end{array}$$

$$\begin{array}{r} \frac{9}{8} - \frac{3}{8} \\ 12 \quad 2 \end{array} \quad \begin{array}{r} \frac{9}{12} - \frac{1}{12} \\ 3 \quad 9 \end{array} \quad \begin{array}{r} \frac{1}{4} - \frac{1}{4} \\ 3 \quad 4 \end{array} \quad \begin{array}{r} \frac{1}{3} - \frac{1}{3} \\ 3 \quad 4 \end{array} \quad \begin{array}{r} \frac{12}{4} - \frac{4}{4} \\ 1 \quad 9 \end{array} \quad \begin{array}{r} \frac{2}{9} - \frac{4}{9} \\ 3 \quad 4 \end{array} \quad \begin{array}{r} \frac{4}{10} - \frac{10}{10} \\ 3 \quad 9 \end{array} \quad \begin{array}{r} \frac{2}{4} \\ 2 \quad 4 \end{array}$$

$$\begin{array}{r} \frac{1}{1} - \frac{1}{12} \\ 6 \quad 5 \end{array} \quad \begin{array}{r} \frac{6}{6} - \frac{1}{6} \\ 5 \quad 18 \end{array} \quad \begin{array}{r} \frac{12}{18} - \frac{1}{18} \\ 2 \quad 1 \end{array} \quad \begin{array}{r} \frac{2}{5} - \frac{6}{5} \\ 2 \quad 18 \end{array} \quad \begin{array}{r} \frac{7}{7} - \frac{8}{7} \\ 18 \quad 9 \end{array} \quad \begin{array}{r} \frac{2}{18} - \frac{2}{18} \\ 9 \quad 18 \end{array} \quad \begin{array}{r} \frac{1}{1} - \frac{4}{1} \\ 18 \quad 3 \end{array} \quad \begin{array}{r} \frac{3}{18} - \frac{4}{18} \\ 9 \quad 18 \end{array}$$

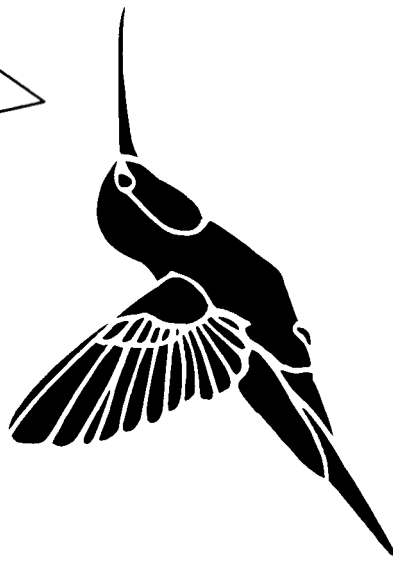
$$\begin{array}{r} \frac{6}{6} - \frac{2}{8} \\ 3 \quad 8 \end{array} \quad \begin{array}{r} \frac{6}{8} - \frac{2}{6} \\ 6 \quad 18 \end{array} \quad \begin{array}{r} \frac{1}{2} - \frac{1}{3} \\ 3 \quad 3 \end{array} \quad \begin{array}{r} \frac{4}{9} - \frac{11}{9} \\ 5 \quad 10 \end{array} \quad \begin{array}{r} \frac{7}{7} - \frac{6}{12} \\ 3 \quad 12 \end{array} \quad \begin{array}{r} \frac{2}{12} - \frac{1}{18} \\ 18 \quad 9 \end{array} \quad \begin{array}{r} \frac{4}{4} - \frac{5}{2} \\ 2 \quad 3 \end{array} \quad \begin{array}{r} \frac{3}{3} - \frac{1}{4} \\ 4 \quad 6 \end{array}$$

$$\begin{array}{r} \frac{18}{24} - \frac{2}{12} \\ 3 \quad 1 \end{array} \quad \begin{array}{r} \frac{12}{4} - \frac{2}{9} \\ 1 \quad 9 \end{array} \quad \begin{array}{r} \frac{10}{4} - \frac{5}{9} \\ 9 \quad 9 \end{array} \quad \begin{array}{r} \frac{4}{4} - \frac{8}{9} \\ 2 \quad 12 \end{array} \quad \begin{array}{r} \frac{1}{2} - \frac{1}{4} \\ 4 \quad 1 \end{array} \quad \begin{array}{r} \frac{3}{3} - \frac{2}{18} \\ 3 \quad 24 \end{array} \quad \begin{array}{r} \frac{8}{5} - \frac{8}{10} \\ 5 \quad 18 \end{array} \quad \begin{array}{r} \frac{5}{18} - \frac{16}{18} \\ 18 \quad 18 \end{array} \quad \begin{array}{r} \frac{8}{18} - \frac{1}{8} \\ 8 \quad 4 \end{array} \quad \begin{array}{r} \frac{24}{24} - \frac{12}{18} \\ 8 \quad 4 \end{array}$$

$$\begin{array}{r} \frac{4}{6} - \frac{1}{12} \\ 9 \quad 18 \end{array} \quad \begin{array}{r} \frac{2}{18} - \frac{2}{18} \\ 9 \quad 8 \end{array} \quad \begin{array}{r} \frac{14}{8} - \frac{8}{4} \\ 9 \quad 8 \end{array} \quad \begin{array}{r} \frac{5}{5} - \frac{1}{4} \\ 4 \quad 2 \end{array} \quad \begin{array}{r} \frac{12}{24} - \frac{1}{12} \\ 6 \quad 18 \end{array} \quad \begin{array}{r} \frac{6}{12} - \frac{14}{18} \\ 2 \quad 7 \end{array} \quad \begin{array}{r} \frac{8}{8} - \frac{7}{2} \\ 2 \quad 7 \end{array} \quad \begin{array}{r} \frac{5}{4} - \frac{1}{3} \\ 4 \quad 3 \end{array} \quad \begin{array}{r} \frac{10}{2} - \frac{1}{2} \\ 2 \quad 1 \end{array} \quad \begin{array}{r} \frac{2}{2} - \frac{3}{15} \\ 8 \quad 9 \end{array} \quad \begin{array}{r} \frac{12}{9} - \frac{7}{9} \\ 9 \quad 9 \end{array} \quad \begin{array}{r} \frac{4}{4} - \frac{1}{3} \\ 4 \quad 1 \end{array} \quad \begin{array}{r} \frac{2}{2} - \frac{5}{4} \\ 2 \quad 1 \end{array}$$

**Secret Code:** 1/3=C 1/6=P 1/9=R 4/5=O 11/12=F 2/3=B 1/12=Y 3/4=S 1=I  
 5/6=G 7/12=T 2=H 5/9=E 5/12=A 3=D 7/9=W 1/4=U 2/9=N 4=L

The rainforest hums with life!

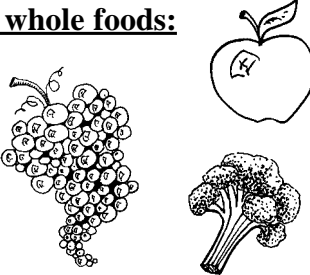
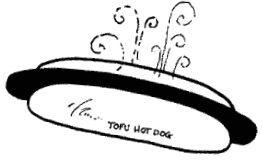




Name \_\_\_\_\_

# Unscrambling Beef!

Unscramble the words below to find tasty and nutritious alternatives to beef. Choose your answers from the list of words provided.

<p><b>Plant-based whole foods:</b></p> <ul style="list-style-type: none"> <li>legumes</li> <li>fruits</li> <li>vegetables</li> <li>grains</li> <li>nuts</li> <li>seeds</li> </ul>		<p><b>Prepared foods:</b></p> <ul style="list-style-type: none"> <li>veggie burger</li> <li>tofu hot dog</li> <li>pasta</li> <li>peanut butter sandwich</li> <li>bean burrito</li> <li>guacamole</li> </ul>	
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A**T**A**P**S = \_ \_ \_ \_ \_                      F**O**U**T** T**H**O **O**D**G** = \_ \_ \_ \_ \_

U**G**S**M**E**E**L = \_ \_ \_ \_ \_                      **B**L**A**S**T**E**G**E**V**E = \_ \_ \_ \_ \_

M**A**G**E**C**O**L**U**A = \_ \_ \_ \_ \_                      S**T**R**U**F**I** = \_ \_ \_ \_ \_

N**A**B**E** I**R**U**T**O**B**R = \_ \_ \_ \_ \_                      **E**D**E**S**S** = \_ \_ \_ \_ \_

Now, arrange the bold letters to form the surprise answer.

We can help protect the rainforests from ever getting quiet  
by eating less beef and more of a \_ \_ \_ \_ \_ - \_ \_ \_ \_ \_



Using the list of alternative foods above, figure out these beef-free terms.

<p>_ _ _ _ _ <b>B</b> _ _ _ _ _</p> <p>_ _ _ <b>E</b> _ _ _</p> <p>_ _ _ _ _ <b>E</b> _</p> <p>_ _ _ _ _ <b>F</b> _ _ _ _ _</p>	<p>Make meals happy by including this type of soy-based patty.</p> <p>These tiny forms of energy are necessary for plant life, you see.</p> <p>Peas, lentils, beans and soy, cook them, eat them, and enjoy!</p> <p>Eating a diet full of these will help protect rainforest trees.</p>
<p>_ _ _ <b>F</b> _ _ _ _ _</p> <p>_ _ _ <b>R</b> _ _ _ _ _</p> <p>_ _ _ <b>E</b> _ _ _ _ _</p> <p>_ _ _ _ _ <b>E</b> _ _ _ _ _</p>	<p>Served on a whole wheat bun, they're tasty, healthy, and fun!</p> <p>Eat them whole not refined, and to your body you will be kind.</p> <p>Is this nutritious Mexican treat a food you love to eat?</p> <p>Studies show that eating these vitamin-rich foods helps us grow.</p>

Name \_\_\_\_\_

# Words Change... Worlds Change (Eat Less Beef)

With the clues provided, change the first word into the final word—one letter at a time.

B E E F Eating less \_\_\_\_\_ can do a lot to help save the rainforests.



Name \_\_\_\_\_

# "Foods I Like To Eat" Check List

Pick foods from the following categories that you like to eat. Include as much variety as possible to make sure you have a healthy diet. Share this list with your family and use the space at the bottom of the page to create a beef-free menu for a day!

## BREAKFAST

- bagel
- cereal
- cream of wheat
- eggs
- french toast
- fruit salad
- grits
- muffin
- oatmeal
- pancakes
- toast
- tortillas
- waffles



- hummus
- peanut butter
- tofu deli slices
- veggie Sloppy Joes
- sushi rolls

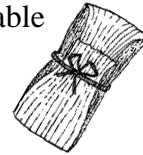


## DINNER

- baked beans
- bean burrito
- casserole
- cornbread
- chicken burger\*
- cheese enchilada
- chile relleno
- quiche
- lasagna
- macaroni and cheese
- mashed potatoes
- salad
- pasta primavera
- spaghetti
- soups
  - black bean
  - carrot ginger
  - corn chowder



- cream of broccoli
- lentil
- minestrone
- tomato
- split pea
- vegetable
- stir fry
- tamale
- tempura
- tofu hot dog
- turkey hot dog\*
- vegetarian chile
- veggie burger
- veggie taco



## SNACKS

- carrot sticks
- chips & salsa or guacamole
- fruit
- granola bar
- nuts
- trail mix
- popcorn
- rice cake
- peanut butter on crackers



## Beef-Free Menu For a Day

### BREAKFAST

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### LUNCH

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### DINNER

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\* While eating white meat is better for the rainforest than eating beef, it takes much more water and energy to produce white meat than to produce plant-based foods.

# ANSWER KEY

## Wood-Use Reduction Worksheets

### **p. 32: Tree-Free Cryptograms**

- Agricultural waste becomes useful when we make paper from it!
- Use tree-free paper.

### **p. 33: Unscrambling Wood Use!**

- kenaf, bagasse, denim, cornstalks, wheat straw.
- tree-free.
- cotton, corn, kenaf, denim, flax, currency, wheat straw, rice (straw).

### **p. 34: Tree Free! Hidden Message:**

- We can make paper from plants like kenaf and corn.

### **p. 35: Words Change/Worlds Change**

- word, worn; caper, capes, tapes; frees, fries; glow, grow, crow; have, hive, live; caps, taps, tags, tugs.

### **pp. 36-39: Crossword Puzzles see next page**

### **p. 40: Secret Message Math (Wood) —Add. & Sub.**

- To protect rainforests forever, be clever...find ways to reduce wood and paper use.

### **p. 41: Secret Message Math (Wood)—Multiplication**

- Using both sides of paper is good; choosing this way saves wood!

### **p. 42: Secret Message Math (Wood)—Division**

- Using a mug, not disposable paper cups, is an easy way to save trees every day!

### **p. 43: Secret Message Math (Wood)—Add. w/Fractions**

- With paper towels trees are lost, but cloth rags are reused with little cost!

### **p. 44: Secret Message Math (Wood)—Sub. w/Fractions**

- To make tree-free paper, we have the key: use ag waste like cornstalks and wheat straw instead of a tree.

## Oil-Use Reduction Worksheets

### **p. 45: Use Less Oil! Word Games**

- plastic containers; pens; cosmetics; CDs; straw; synthetic clothing; tableware and kitchenware.
- Let's think of ways to use less oil, naturally!

### **p. 46: Oil-Free Cryptograms**

- Using your own mug over and over instead of plastic cups helps reduce oil use!
- thermostat; synthetic; bags; bottle; forks and spoons.

### **p. 47: Unscrambling Oil Use!**

- mesh bag; ride bike; carpool; less gas; mass transit; less oil; reuse; recycle; reduce.
- less petrol.
- mesh bag; reuse; less gas; carpool; ride bike; mass transit; reduce; less oil; clothes.

### **p. 48: Use Less Oil! Hidden Messages**

- When we carpool and ride bicycles, we save petroleum and the rainforests too!
- Instead of drilling for oil with all its pollutions, let's look to the sun and wind for clean energy solutions!

### **p. 49: Words Change/Worlds Change**

- Bars, bare, bake; hear, tear, team; want, wand; til, tin, ton, son.

### **pp. 50-53: Crossword Puzzles see next page**

### **p. 54: Secret Message Math—Add & Sub. (Oil)**

- Using less oil and plastic are ways to keep rainforests fantastic!

### **p. 55: Secret Message Math (Oil)—Multiplication**

- Using less oil products in our daily lives helps save rainforests so all their animals can survive.

### **p. 56: Secret Message Math (Oil)—Division**

- Bringing cloth bags to the store means you don't need to use plastic bags anymore!

### **p. 57: Secret Message Math (Oil)—Add. w/Fractions**

- Rainforests are helped by us when we save oil by riding the bus.

### **p. 58: Secret Message Math (Oil)—Sub. w/ Fractions**

- By using the sun and wind for power, we can protect the rainforest trees and flowers.

## Beef Consumption Reduction Worksheets

### **p. 62: Beef-Free Cryptograms**

- Cutting down on fast food hamburgers means less rainforest trees get cut down for cattle pasture!
- Eat less beef.

### **p. 63: Unscrambling the Beef!**

- pasta, tofu hot dog, legumes, vegetables, guacamole, fruits, bean burrito, seeds.
- plant-based diet.
- veggie burger, seeds, legumes, fruits, tofu hot dog, grains, bean burrito, vegetables.

### **p. 64: Words Change/Worlds Change (Eat Less Beef):**

- Beef, been, bean, mean, meal, meat, melt, malt, salt, sale, sole, pole, role, roll, toll, toil, soil, boil, bail, bait, wait, want, wand, sand, send, seed



## RESOURCES FOR TEACHERS AND STUDENTS

### Curricula, Teaching Aids, and Resource Guides

**California CLASS Project.** For middle grades. \$29.00. Available from California Dept. of Education, Bureau of Publications, Sales Unit, P.O. Box 271, Sacramento, CA 95812-0271. Phone: (916) 445-1260; Fax: (916) 323-0823.

**Earthlife Series Indigenous Craft Baskets.** Baskets of crafts for hands-on classroom learning. Crafters receive fair wages for their work. \$325.00 retail, includes all materials. World of Education, P.O. Box 278, Lake Zurich, IL 60047. Phone: (847) 526-8338; Fax: (847) 526-0073; Website: [www.worldofeducation.org](http://www.worldofeducation.org).

**Eco-Club Actions.** For grades 6-12. Contains information on current environmental problems, how and by whom they are being solved. Members can write letters to help. Incorporates science, social studies, English and foreign languages. \$15/yr for individuals, \$25/yr for classroom. Global Response Newsletter, P.O. Box 7490, Boulder, CO 80306-7280. Phone: (303) 444-0306; Fax: (303) 449-9794; E-mail: [globresponse@igc.apc.org](mailto:globresponse@igc.apc.org).

**Environmental Education Resource Guide.** A booklet listing a variety of educational materials, including curricula, newsletters, films, and magazines. \$12.00 (shipping included). Friends of the Earth, 1025 Vermont Ave., 3rd Floor, NW, Washington, D.C. 20005. Phone: (202) 783-7400; Fax: (202) 783-0444.

**NEW!! Forest Family Forever!** Journey into an enchanted rainforest where magical trees come to life to empower young people with ways they can help protect the last ancient rainforests on Earth! *Forest Family Forever!* tells the story of a thousand year old grandfather tree who teaches his sapling grandson about the wonders of the rainforests and what kids can do to save them. Rainforest Action Network, 221 Pine St., Suite 500, San Francisco, CA 94104. Phone: (415) 398-4404; website: [www.ran.org](http://www.ran.org).

**Flumpa the Frog.** For younger students. Stories about a rainforest frog and its peril in a vanishing habitat. Book, CD, and live entertainment format. Ion Imagination Entertainment, Inc. P.O. Box 210943, Nashville, TN 37221-0943. Phone: (800) 335-8672.

**Get Real Video and Rainforest Adventure Activity Guide.** Presents positive young role models for kids; has won several awards. Contact Milwaukee Public Museum, 800 W. Wells St., Milwaukee, WI 53233. Phone: (414) 278-2700.

**Guide to Ecoliteracy: A New Context for School Restructuring.** A guide for K-12 educators spelling out in simple terms what ecoliteracy means and why it is important. \$15.00. Center for Ecoliteracy, 2522 San Pablo Ave., Berkeley, CA 94702. Phone: (510) 845-4595; Fax: (510) 845-1439.

**International Development Exchange (IDEX) Education Program.** IDEX motivates students to explore events in the developing world to achieve a deeper understanding of communities around the globe. Provides slides, written materials, and teachers' notes for conducting workshops. IDEX, 827 Valencia St., Suite 101, San Francisco, CA 94110. Phone: (415) 824-8384; Fax: (415) 824-8387.

**National Geographic Educational Services.** Variety of books, videos, and other resources. Call for a catalogue. Phone: (800) 368-2728 or (800) 548-9797; Fax: (301) 921-1575.

**New World Tropical Rainforests.** A comprehensive guide to curricula, activities, and resources. \$46.95 plus 10% for shipping. Stanford Program on Cross-cultural Education (SPICE), Littlefield Center, Room 14C, 300

Lausen St., Stanford University, Stanford, CA 94305-5013.

*The Rainforest and its Future.* For grades 2-8. One hundred learning activities about the African rainforest. Distributed by Save the Rainforest, P.O. Box 16271, Las Cruces, NM 88004. Phone: (888) 608-9435.

*The Rainforest Connection II.* A curriculum guide to tropical rainforests by the International Children's Rainforest Network. Available through Save the Rainforest, see above information.

*Rainforest Researchers CD-ROM Program.* For grades 5-8. A cooperative learning program; students form groups and take on different roles and then try to come to a constructive decision. \$199.95. Tom Snyder Productions, 80 Coolidge Hill Rd., Watertown, MA 02472. Phone: (800) 342-0236.

*Vanishing Rainforests Education Kit.* For grades 2-6. Designed to bring the wonders of the rainforest into the lives of students; includes a video. \$29.95, plus \$5.00 for shipping. World Wildlife Fund, 1250 24th St., NW, Washington, DC. 20037-1175. Phone: (202) 293-4800; Fax: (202) 293-9211.

*Wisconsin Academy of Sciences Curriculum Guides.* Send a 9 x 12 inch S.A.S.E. and \$3.00 to 1922 University Ave., Madison, WI 53706.

*Young Environmentalist Actions.* For children and teachers, grades 1-5. Describes current environmental issues and the people and organizations working on them. Members write letters to help. Interdisciplinary—includes science, social studies, and English work. \$15/yr for individuals and \$25/yr for classrooms. Global Response Newsletter, P.O. Box 7490, Boulder, CO 80306-7280. Phone: (303) 444-0306; Fax: (303) 449-9794; E-mail: globresponse@igc.apc.org.

## Books

Bellamy, David. 1991. *How Green Are You?* Clarkson Potter, NY. ISBN 0-517-58429 (cloth). Provides information and a list of activities to show kids and their families how to help save energy, protect wildlife, and avoid pollution.

Berger, Melvin and Gilda. 1994. *Life in the Rainforest.* Ideals Children's Books, Nashville, TN. ISBN 1-57102-0070-1 (paper). For ages 5-9. Explores the plants, animals, and people of the rainforest.

Cherry, Lynne. 1990. *The Great Kapok Tree.* Harcourt Brace, San Diego, CA. ISBN 0-15-200520-X (cloth). For ages 6-10. Story of a man chopping down a kapok tree. He falls asleep and is visited by forest animals in his dream, who convince him not to cut down the tree.

Cherry, Lynne. 1998. *The Shaman's Apprentice: A Tale of the Amazon Rainforest.* Gulliver Books. ISBN 0152012818 (cloth). For ages 6-10. Story of a rainforest shaman that educates children about the important roles of all living things.

Collard, Sneed. 1994. *Green Giants.* North Wood Press, Minocqua, WI. ISBN 1-55971-222-8 (paper). A profile of tropical trees.

Collins, Mark, Ed. 1990. *The Last Rain Forests.* Oxford University Press, NY. ISBN 0-19-520836-6. A World Conservation Atlas. Informational for teachers.

Cowcher, Helen. 1988. *Rain Forest.* Farrar, Strauss, and Giroux, NY. ISBN 0-372-46190-2 (paper). For ages 4-8. Recounts how the rainforest is a peaceful place until human beings threaten to destroy it with their machinery.

Earth Works Group. 1989. *50 Simple Things You Can do to Save the Earth.* Andrews and McMeel, Kansas City. ISBN 0-8362-2301-2 (paper). Listing of 50 easy, common sense actions kids and their families can take to support our environment.

Forsyth, Adrian. 1995. *How Monkeys Make Chocolate.* Firefly Books, Inc., NY. ISBN 1-895688-32-9 (paper). For upper elementary and middle school. Teaches about foods and medicines from the rainforest.

- Forsyth, Adrian. 1988. *Journey Through a Tropical Jungle*. Simon and Schuster, NY. ISBN 0-671-66262-7 (cloth). For ages 7 and up. Chronicles a journey through the Monteverde reserve in Costa Rica.
- Goodman, Billy. 1990. *A Kid's Guide on How to Save the Planet*. Avon/Camelot Books, NY. ISBN 0-380-76041-X (paper). Discusses environmental problems, many of which can be remedied if we work together to clean up the earth.
- Goodman, Susan E. 1995. *Bats, Bugs, and Biodiversity: Adventures in the Amazonian Rain Forest*. Atheneum, NY. ISBN 0-689-31943-6 (cloth). For ages 8-12. Recounts the adventures of a group of 7th and 8th graders who witness the environmental wealth of the rainforest.
- Hamilton, Virginia. 1995. *Jaguarundi*. Turtleback. ISBN0590473662 (paper). For ages 7-10. This fantasy story of endangered rainforest animals in South America describes the animals' struggle to survive and find suitable habitats.
- Horwich, Robert and Community Baboon Sanctuary. 1990. *A Belizean Rain Forest*. Orang-utan Press, Gays Mills, WI. ISBN 0-9637982-0-0. Informative book about the Belizean rainforest animals, and a local conservation program that has spread worldwide.
- Jordan, Tanis. 1992. *Journey of the Red-Eyed Tree Frog*. Green Tiger Press, NY. ISBN 0-671-76903-0 (cloth). For ages 4-8. An exquisite picture book about this endangered species.
- Lasky, Katherine. 1997. *The Most Beautiful Roof in the World: Exploring the Rainforest Canopy*. Gulliver Books. ISBN 0152008977 (cloth). For ages 9-12. Studies the brilliant and vivid world of the rainforest canopy.
- Lewington, Anna. 1992. *Antonio's Rain Forest*. Wayland Ltd., Hove, East Sussex, England. ISBN 0-87614-992-18. Book about how people live in the rainforest.
- Lewington, Anna. 1993. *What do We Know about the Amazonian Indians?* Simon and Schuster Young Book, NY. ISBN 0-87226-367-3.
- Lewis, Barbara A. 1991. *The Kid's Guide to Social Action*. Free Spirit Publications, Minneapolis. ISBN 0-915793-29-6 (cloth). For grades 4-7. The guide explains how to solve social problems through creative thinking and positive action.
- Pedersen, Anne. 1991. *The Kid's Environment Book: What's Awry and Why*. John Muir Publications, Santa Fe, NM. ISBN 0-94565-74-2 (cloth). Describes what an environment is, how it becomes polluted, and steps we can take to prevent environmental destruction.
- Pratt, Kristin. 1992. *A Walk in the Rainforest*. Dawn Publications, Nevada City, NV. ISBN 1-87826-553-9 (paper). In alphabet format, this book details rainforest species, their lifestyles, and their habitats.
- Rand, Gloria. 1999. *Fighting for the Forest*. Henry Holt & Co. ISBN 0805054669 (cloth). For ages 7-11. Story of a father and son trying to save an old growth forest near their home.
- Ross, Suzanne. 1991. *What's in the Rainforest? 106 Answers from A to Z*. Enchanted Rainforest Press, Los Angeles, CA. ISBN 0-9629895-0-9 (paper). For ages 2-6. An alphabet book of rainforest characters.
- Seuss, Dr. 1971. *The Lorax*. Random House. ISBN 0394823370 (cloth). For ages 4-8. This Dr. Seuss classic warns against mindless progress and the danger it poses to the natural world.
- Silver, Donald. 1993. *Why Save the Rain Forest*. Julian Messner, NY. ISBN 0-671-86610-9 (paper). Book uses specific examples to teach children the importance of the rainforest and the need to preserve it.
- Willow, Diane. 1991. *At Home in the Rainforest*. Charlesbridge Publishers, Watertown, MA. ISBN 0-88106-485-8 (cloth).
- UNESCO. 1994. *An Ecology Book for Children on Asian/Pacific trees*. The Asia/Pacific Cultural Centre for UNESCO, Tokyo. ISBN 4-946438-09-2 (paper). Asia/Pacific Cultural Centre for UNESCO, Japan Publishers Building, No. 6 Fukuromachi, Shinjuku-ku, Tokyo 162 JAPAN. Phone: +81-3-3269-4510. A wonderful book

with extraordinary photos and drawing containing stories, legends, and articles about the trees of this area.  
Yolen, Jane. 1993. *Welcome to the Greenhouse*. Putnam, NY. ISBN 0-399-22335-5 (cloth). For ages 4-8. Invites children into the rainforest to learn what's inside this ecosystem.

Zak, Monica. 1992. *Save My Rainforest*. Volcano Press, Volcano, CA. ISBN 0-912078-94-4 (cloth). For ages 6 and up. A boy dreams of visiting the rainforest in southern Mexico, realizes his vision, and fights to protect this fragile ecosystem from destruction.

## Books In Spanish

Cherry, Lynne. 1994. *El Gran Capoquero*. Harcourt Brace, NY. ISBN 0-15-232320-1 (paper). For ages 6-10.

Pratt, Kristin Joy. 1992. *Un Paseo por el Bosque Lluvioso*. Dawn Publications, NY. ISBN 1-883220-02-5 (paper). For ages 5 and up.

Seuss, Dr. 1993. *El Lorax*. Lectorum Pubns. ISBN 1880507048 (cloth). For ages 4-8.

Willow, Dianne. 1993. *Dentro de la Selva Tropical*. Charlesbridge, Watertown, MA. ISBN 0-88106-421-1 (paper). For all ages.

## Magazines and Newsletters

*Global Response*. A young environmentalist's newsletter dedicated to letter writing campaigns that focus on specific planetary environmental threats. In English, Spanish, and Braille. Global Response Newsletter, P.O. Box 7490, Boulder, CO 80306-7280. Phone: (303) 444-0306; Fax: (303) 449-9794; email: globresponse@igc.apc.org.

*Skipping Stones Magazine*. Quarterly multicultural and multilingual children's magazine that highlights traditions and environmental issues from around the world. \$25/yr for individuals, \$35/yr for schools and libraries. Skipping Stones Magazine, P.O. Box 3939, Eugene, OR 97403-0939. Phone: (541) 342-4956; email: skipping@efn.org.

*The Tropical Tribune*. An excellent publication on rainforest issues written by 6th graders, offering creative outlets for action and fostering a sense of social responsibility. Students are invited to write in with questions and submit articles for publication. Students' Staff, J.C. McKenna Middle School, 307 First St., Evansville, WI 53536.

## Maps and Posters

*Global Threats to the Environment Series: Endangered Oceans, Endangered Earth* (3 different maps in the same series). 17 x 22 inch poster sizes. Maps show major areas of rainforest destruction, drought, and overpopulation. News Currents, P.O. Box 52, Dept. CCTX, Madison, WI 53792-8639. Phone: (800) 356-2303.

*Rainforests of the World Poster Set: Neotropical, Northwest Coast, African, Southeast Asian Rainforests*. Poster and booklet. Celestial Arts, P.O. Box 7123, Berkeley, CA 94707. Phone: (800) 841-2665.

## Courses

*The Global Classroom*. A project of the Institute for Environmental Awareness promoting rainforest preservation and restoration in cross-cultural education. The Global Classroom, 39 Glasheen Rd., Petersham, MA 01366-9715.

*Rainforest Ecology Courses*. Provides two week ecology courses in rainforest areas of Central America. Courses are designed for teachers and high school students. Save the Rainforest, P.O. Box 16271, Las Cruces, NM 88004. Phone: (888) 608-9435.

## RAINFOREST AUDIOVISUALS

**NEW!! *Forest Family Forever!*** Journey into an enchanted rainforest where magical trees come to life to empower young people with ways they can help protect the last ancient rainforests on Earth! *Forest Family Forever!* tells the story of a thousand year old grandfather tree who teaches his sapling grandson about the wonders of the rainforests and what kids can do to save them. Contact: Rainforest Action Network, 221 Pine Street, Suite 500, San Francisco, CA 94104. Phone: (415) 398-4404; website: [www.ran.org](http://www.ran.org).

***The Amazon: A Vanishing Rainforest.*** 29 min., 1988. Filmed in the heart of Brazil's Amazon River Basin, this video focuses on the work of the National Institute of Amazon Research, and shows how encroaching development poses a threat to the region's fragile ecosystem. Contact: The Cinema Guild (see below). VHS: Sale \$250.00, Rent \$50.00.

***Amazonia: the Road to the End of the Forest.*** Two 48 min. videos. This production provides a comprehensive survey of the global catastrophe escalating in the Amazon basin. It includes one of the last interviews with Chico Mendes, who was murdered for his outspoken opposition to land clearance. Contact: Filmmakers Library (see below). VHS: Sale \$495.00, Rent \$100.00.

***Amazonia: Voices From the Rainforest.*** 70 min., 1991. Produced by Rosaines Aguirre and Glenn Switkes. This video documents the conflicting interests between indigenous peoples, colonizers, and ranchers in the Amazonian rainforest. Includes a 92 page resource book. Contact: The Video Project (see below). VHS: Sale \$95.00, Rent \$39.95.

***Amazon Journal.*** 58 min. Produced by Geoffrey O'Connor. Beginning with the assassination of Chico Mendes in 1988 and ending with a return trip to Yanomami Territory in 1995, this documentary illuminates the volatile changes of this era. Contact: Filmmakers Library (see below). 16 mm print available. VHS: Sale \$395, Rent \$75.00.

***Ana in the Rainforest.*** 11 min. (Ages 6 to 10). Produced by Laura Heller. In an animated dream, young Ana takes an imaginary journey to a tropical rainforest where she finds a cure for her sick iguana. Ana also learns about the dangers the forest faces and wakes up determined to help save the rainforests. Contact: Bullfrog Films (see below). VHS: Sale \$195.00, Rent \$25.00.

***Arrows Against the Wind.*** 52 min., 1992. Produced by Tracey Groome. This emotionally moving production documents the story of the Dani and Asmat, two tribes in Irian Jaya. These tribes have been rendered expendable by multinational concerns and the Indonesian government. Contact: Bullfrog Films (see below). VHS: Sale \$250.00, Rent \$75.00.

***Banking on Disaster.*** 78 min., 1988. Produced by Adrian Cowell. This documentary examines the disastrous consequences of paving a road through the world's largest rainforest. Contact: Bullfrog Films (see below). Sale: \$350.00, Rent \$90.00.

***Battle for the Trees.*** 57 min. (Ages 10 to Adult). A striking documentary of the destruction of the largest remaining temperate rainforest in North America. The film takes a close look at the impacts of clearcutting, the potential for alternatives, and the questionable role of multinational corporations which are increasingly logging old growth forests. Contact: The Video Project (see below). VHS: Sale \$95.00, Rent \$39.95.

***Blowpipes and Bulldozers.*** 60 min., 1988. Produced by Gaia Films. Describes the story of the Penan peoples of Borneo and their desperate ongoing fight to save their rainforest homelands from the Malaysian logging companies. Contact: Bullfrog Films (see below). VHS: Sale \$350.00, Rent \$85.00

***Burning Rivers.*** 28 min., 1992. Produced by Merran Smith and Michael Simpson. Examines the link between environmental problems and the socio-economic crises in Guatemala. Contact: The Video Project (see below). VHS: Sale \$85.00, Rent \$35.00.

***Chico Mendes: A Voice from the Amazon.*** 60 min., 1989. Produced by Miranda Smith. A documentary on the life and work of Chico Mendes, including interviews with the rubber-tapper leader conducted shortly before his murder. Contact: Miranda Smith Productions, Inc. P.O. Box 4624, Boulder, CO, 80306-4624. Phone: (303) 546-0880.

***The Decade of Destruction.*** Five videos of 55 min. (Ages 14 to Adult). Adrian Cowell documents the systematic destruction of the Amazonian rainforests from the early 1980's. Each episode follows real life stories of personal tragedy and great courage among people caught in the frontier's web of greed. Contact: Bullfrog Films (see below). VHS: Sale \$495.00, Rent \$250.00.

***The Decade of Destruction: Classroom Version.*** Six videos, 10-19 minutes each. (Ages 11 to 18). This abridged version of Adrian Cowell's series presents the many complex factors leading to what may be this century's worst environmental disaster, the escalating destruction of the Amazonian rainforest. Contact: Bullfrog Films (see below). VHS: Sale \$350.00, Rent \$75.00.

- Earth First!: The Struggle for the Australian Rainforest.*** 58 min., 1990. Extraordinary images of the Australian rainforests are juxtaposed with dramatic footage documenting the efforts to preserve these areas through civil disobedience and demonstrations. Contact: The Video Project (see below). VHS: Sale \$39.95.
- Emerald Forest.*** 90 min., 1985. Produced by John Bormen. Feature film on the effects of a dam project in the Amazon basin. Available at local video rental stores.
- Environment Under Fire: Ecology and Politics in Central America.*** 28 min., 1988. Produced by The Environmental Project on Central America (EPOCA). Leading environmentalists explore the issues and potential solutions surrounding the environmental crisis in Central America. Contact: The Video Project (see below). VHS: Sale \$75.00, Rent \$39.95.
- Falling Giants.*** 14 min. Through interviews with key players and the work of nature photographer Doug Thron, this video examines the battle to preserve the largest unprotected ancient redwood forest on Earth from the sawmills of the Pacific Lumber Company. Contact: The Video Project (see below). VHS: Sale \$49.95, Rent \$29.95.
- Forest for the Future.*** 25 min. per video. This series of three videos (The Natural Forest, Humans in the Forest, and Decisions for the Future) shows the ecological interconnections within the old growth forests of the Pacific Northwest. Includes a 20 page study/activity guide. Contact: The Video Project (see below). VHS: Sale \$149.00, Rent \$89.00.
- The Forest through the Trees.*** 58 min., 1990 (Ages 12 to Adult). This video provides a sobering look at the battle for the last remaining stands of virgin redwoods in the United States. The film presents competing interests, exposes alternatives to current logging practices, and explores the underlying public policy and resource issues that affect us all. Contact: The Video Project (see below). VHS: Sale \$85.00, Rent \$39.95.
- A Future for Forests.*** 25 min., 1993. Directed by J. Edward Milner. Examines the aims of the Forest Stewardship Council to promote responsible forest management. Contact: The Cinema Guild (see below). VHS: Sale \$225.00, Rent \$50.00.
- In a Time of Headlong Progress.*** 45 min. Bahian conservationist Cristina Aves is creating a model that balances economic needs with the conservation of the rainforest. Contact: The Video Project (see below). VHS: Sale \$125.00, Rent \$39.95.
- In Good Hands: Culture and Agriculture in the Lacandon Rain Forest.*** 27 min. This video documents the sustainable farming practices of the Lacandon Maya of Chiapas in Mexico and examines how culture and mythology influence their methods, now threatened by modernization. Contact: The Video Project (see below). VHS: Sale \$99.95, Rent \$39.95.
- Halting the Fires.*** 52 min., 1991. Brazilian director Octavio Bezerra gives us a socio/political framework to the destruction of the Amazon rainforest, where an area larger than the Netherlands is burned each year. Contact: Filmmakers Library (see below). VHS: Sale \$495.00, Rent \$100.00.
- Jaguar Trax.*** 33 min. (Ages 9 to 14). This video teaches young people a myriad of reasons for saving the last of our tropical rainforests. Study guide included. Contact: The Video Project (see below). VHS: Sale \$65.00, Rent \$39.95.
- Jungle Pharmacy.*** 53 min., 1989. Produced by Better World Society. Dedicated scientists, physicians and environmentalists collaborate with Indian shamans (healers), to reveal how the rainforests can provide medicinal benefits. Contact: The Cinema Guild (see below). VHS: Sale \$295.00, Rent \$90.00.
- Keepers of the Forest.*** 28 min., 1986. An award winning exploration of the sustainable agro-ecosystem of the Lacandon Maya of Chiapas Mexico. It shows what tropical rainforests are, what's destroying them, and how indigenous knowledge is an invaluable and endangered resource for using them sustainably. Includes a study guide. Contact: Documentary Projects, 5209 Manila Ave., Oakland, CA 94618-1021. Phone: 510-595-5306; Fax: 510-595-5307. VHS: Sale \$95, Rent \$39.
- Kings of the Jungle.*** 51 min. The film follows the Boas brothers as they retrace their steps as part of their struggle to save the Amazonian rainforest and its inhabitants. The brothers explored the Amazon for development purposes in 1943 before realizing the devastation that development often brings to indigenous cultures. Contact: Bullfrog Films (see below). VHS: Sale \$250.00, Rent \$75.00.
- Listen Caracas.*** 19 min., 1979. Produced by Carlos Azpurua. A forceful testimony from the last Yescuana Chief on the impacts of colonizers and evangelical missionaries on the Yescuana peoples. Contact: The Cinema Guild (see below). VHS: Sale \$250.00, Rent \$50.00.
- Logging Siberia.*** 28 min. (Ages 14 to Adult). An introduction to critical resource management issues in the beautiful Siberian Taiga forest, which encompasses an area the size of the entire continental United States. With the dissolution of the Soviet state, thousands of acres are being sold to multinational companies who plan to clear-cut large tracts. Contact: The Video Project (see below). VHS: Sale \$125.00, Rent \$45.00.
- Mayan Rainforest Farming.*** 29 min., 1983. As part of an ecology workshop series, this film describes a centuries-old Mayan model of sustainable rainforest agriculture. Contact: Bullfrog Films (see below). Sale \$195.00, Rent \$50.00.
- The Monk, the Trees and the Concrete Jungle.*** 26 min., 1993. Focusing on Southeast Asia, this program portrays

- deforestation and the trade in endangered species. Contact: Bullfrog Films (see below). VHS: Sale \$175.00, Rent \$45.00.
- The Moon's Prayer: Wisdom of the Ages.*** 51 min. Presented from the viewpoint of the indigenous people, this documentary portrays the continuing conflicts over natural resources and shows how tribes in the Pacific Northwest work to protect and restore their lands. Contact: The Video Project (see below). VHS: Sale \$85.00, Rent \$39.95.
- A Naturalist in the Rainforest: A Portrait of Alexander Skutch.*** 54 min. A portrait of one of the great naturalists, this documentary guides us through the Costa Rican rainforest, explains its unique biology, and shows the importance of preserving this reservoir of genetic diversity. Contact: Bullfrog Films (see below). VHS: Sale \$250.00, Rent \$45.00.
- On the Edge of the Forest.*** 32 min. Economist E.F. Schumacher makes a powerful plea for good planetary behavior amidst a virgin forest in Western Australia. Schumacher reminds us of the efficiency of the perfectly balanced forest ecosystem. Contact: Bullfrog Films (see below). VHS: Sale \$115.
- Our Threatened Heritage.*** 19 min., 1988. Produced by the National Wildlife Federation. The video portrays the destruction of the rainforests and what actions can be undertaken to halt it. Contact: The Video Project (see below). VHS: Sale \$29.95.
- Our Vanishing Forests.*** 58 min., 1992. Produced by Arlen Slobodow. This documentary outlines how the U.S. Forest Service has abandoned any trace of conservation ethic and now favors clearcutting practices and follows the interests of the timber industry. The video questions whether we are willing to lose all of our old growth forests, rich in biodiversity and beauty, so that a few can profit. Contact: Bullfrog Films (see below). VHS: Sale \$250.00, Rent \$80.00.
- People and Rainforests Slide Show.*** 15 min., 1991. Produced by Cultural Survival. Introduces students to the indigenous peoples who live in the world's rainforests. Contact: Cultural Survival (see below). Sale \$125.00, Rent \$25.00.
- The Price of Progress.*** 54 min., 1987. Produced by Nicholas Claxton. This provocative film investigates three huge resettlement programs in India, Brazil, and Indonesia, all sponsored by the World Bank. Using the World Bank's own documents the film analyzes the social, environmental, and economic costs of some of the bank's lending policies. Contact: Cinema Guild (see below). VHS Sale \$350.00, Rent \$75.00.
- Rainforests: Proving Their Worth.*** 30 min., 1990 (High school to Adult). Produced by Interlock Media Associates. This award-winning film explores the promising new movement to market forest products sustainably harvested by local peoples. Contact: The Video Project (see below). VHS: Sale \$85.00, Rent \$35.00.
- Rainforest Rap.*** 6 min. Produced by World Wildlife Fund. Set to rap music, this video portrays the problems facing tropical rainforests and how kids can participate in solutions. Contact: World Wildlife Fund, 1250 24th St., N.W., Washington D.C., 20037. Phone: (202) 293-4800. VHS Kit: Sale \$29.95.
- RAN slide show for Kids.*** 39 slides, 1993 (Ages 8 to 11). Introduces the biodiversity of rainforests, as well as sustainable and non-sustainable uses of the resources contained within them. Contact: Rainforest Action Network, 221 Pine Street, Suite 500, San Francisco, CA 94104. Phone: (415) 398-4404. Web: [www.ran.org](http://www.ran.org). Sale \$50.00, Rent \$25.00.
- Redwood Summer.*** 30 min. (Ages 15 to Adult). Produced by Stuart Rickey. This documentary covers a season of public demonstrations and civil disobedience actions against timber corporations by the environmental action group, Earth First! Contact: Bullfrog Films (see below). VHS: Sale \$195.00, Rent \$45.00.
- Runa: Guardians of the Forest.*** 27 min., 1990. Produced by Ellen Speiser and Dominique Irvine. Portrays how the Quichua peoples of Ecuador utilize traditional knowledge to manage the resources of the rainforest. Contact: UC Extension Media Center, 2000 Center St., Ste. 400, Berkeley, CA 94704. Phone: (510) 642-0460. VHS: Sale \$175.00, Rent \$50.00.
- Saviors of the Forest.*** 75 min., 1993. Produced by The Camera Guys. Exploring the problems facing the forests of Ecuador, this video documents corporate destruction of the rainforest and offers insight into sustainable uses of the rainforest. Contact: The Camera Guys. Phone: (415) 488-9485. Web: [www.camguys.com](http://www.camguys.com). VHS: Sale \$19.95.
- Science in the Rain Forest.*** 120 min. video and computer CD learning kit. Field scientists demonstrate the biodiversity in the rainforests and efforts to use sustainable development in this natural habitat. Contact: Time Life Education. Phone: (800) 449-2010. Web: [www.timelifeedu.com](http://www.timelifeedu.com). VHS, and CD for Mac or PC: Sale \$179.00.
- Secrets of the Cobo.*** 52 min. Produced by Ian McLaren. This documentary follows six of the world's foremost experts on tropical ecology and sustainable development on board an old steamer into the Cobo rainforest in Colombia, one of the largest relatively unspoiled rainforests on the planet. Contact: Bullfrog Films (see below). VHS: Sale \$250.00, Rent \$75.00.
- Songbird Story.*** 15 min. (Ages 6 to 11). In an animated dream, two children fly along with migratory birds on one of their migration paths to the tropical rainforests. They see how quickly the rainforests are being cut down, and learn that there is no time to waste to save the birds from extinction. Contact: Bullfrog Films (see below). VHS: Sale \$195.00, Rent \$25.00.
- Spaceship Earth.*** 25 min., 1990 (Ages 10 to Adult). This film offers a unique demonstration of the amazing interdependency between human, natural, and technological systems. Hosted entirely by young people, the video journeys throughout the

world to examine critical environmental issues. Contact: The Video Project (see below). VHS: Sale \$39.95.

*Spotted in the Woods.* 8 1/2 min. (Ages 5 to Adult). This program introduces us to the northern spotted owl, a symbol for the preservation of our remaining ancient forests. It reminds us that our choices to consume paper and lumber products may affect the habitat of threatened or endangered species. Contact: The Video Project (see below). VHS: Sale \$39.95, Rent \$29.95.

*Sterling Forests: A Quality of Life Choice.* 15 min. (Ages 15 to Adult). Produced by Leonardo's Children, Inc. A beautiful presentation of forests, the true costs of development, and what it will take to leave a peaceful and healthy earth to our children. Contact: The Video Project (see below). VHS: Sale \$39.95, Rent \$29.95.

*Still Life for Woodpecker?* This film incorporates an ancient native myth into the study of forest ecology. In North America we are losing our old growth forests at an alarming rate. Yet these forests are vital to the survival of many species, including the pileated woodpecker. Contact: Bullfrog Films (see below). VHS: Sale \$250.00, Rent \$50.00.

*The Temperate Rain Forest.* 16 min. (Ages 9 to Adult). Produced by the National Film Board of Canada. This beautifully photographed film examines the characteristics and ecology of the coastal rainforest of the Pacific Northwest. It reminds us of the exquisite beauty of the temperate rainforest and of our obligation to preserve its place in nature. Contact: Bullfrog Films (see below). VHS: Sale \$335.00, Rent \$30.00.

*The Vanishing Forest: The Crisis of Tropical Deforestation.* 40 min., 1987 (Ages 9 to Adult). This in-depth film-strip, accompanied by an audio-cassette and teacher's guide, describes tropical rainforests, the threats they face, and the efforts to save them. Contact: Knowledge Unlimited, Inc., P.O. Box 52, Madison, WI 53701. Phone: 800-356-2303.

*A Walk in the Rainforest.* 11 min. (Ages 4 to 11). Produced by the Young Naturalist Foundation. In the Chan Chich Wildlife Reserve of Belize, children experience the beauty of a rainforest environment, with mahogany trees, toucans, monkeys, and leaf-cutter ants. Contact: Bullfrog Films (see below). VHS: Sale \$195.00, Rent \$25.00.

*When the Salmon Runs Dry.* 51 min. (Ages 14 to Adult). Allowing competing interests to discuss their perspectives, this documentary examines the impact of human development on the salmon population of the Pacific Northwest. Contact: The Video Project (see below). VHS: Sale \$85.00, Rent \$39.95.

*Wilderness: The Last Stand.* 53 min. Narrated by Susan Sarandon, this documentary investigates the status of America's last remaining virgin forests. It examines the impact of U.S. Forest Service policies, and the devastating harm caused by clearcutting practices. Contact: The Video Project (see below). VHS: Sale \$95.00, Rent \$45.00.

*Wonders of the Rain Forest.* 40 min. Jack Hanna visits people who are working to preserve Costa Rica's rich rainforest. Along the way, he encounters howler monkeys, poison-dart frogs, snakes, and a wide variety of bird life. Contact: Time Life Education. Phone: 800-449-2010. Web: [www.timelifeedu.com](http://www.timelifeedu.com). VHS: Sale \$14.99.

*Yanomami: Keepers of the Flame.* 58 min., 1992. A documentary of an expedition by a group of journalists, anthropologists, and doctors who journeyed to the Venezuelan rainforests to visit with the Ashetoeateri village, a Yanomami community never contacted by the outside world. Contact: The Video Project (see below). VHS: Sale \$65.00, Rent \$39.95.

*You Can't Grow Home Again.* 58 min., 1990 (Ages 8-14). Produced by Children's Television Workshop for 3-2-1. Designed as an introduction for children to the rainforests, this program teaches basic life science concepts, including biodiversity, species identification, and the importance of rainforests in preventing global warming. Includes study and activity guide. Contact: The Video Project (see below). VHS: Sale \$29.95.

## Organizational Contacts

Please contact the following organizations for more information about the videos listed above, or for a complete list of videos available from each organization.

Bullfrog Films P.O. Box 149 Oley, PA 19547 Phone: 800-543-3764 <a href="http://www.bullfrogfilms.com">www.bullfrogfilms.com</a>	Cultural Survival 96 Mt. Auburn Street Cambridge, MA 02138 Phone: 617-441-5400 <a href="http://www.cs.org">www.cs.org</a>	The Video Project 5332 College Ave. Oakland, CA 94618 Phone: 800-475-2638 <a href="http://www.videoproject.org">www.videoproject.org</a>
The Cinema Guild 1697 Broadway, Suite 506 New York, NY 10019 Phone: 800-723-5522 <a href="http://www.cinemaguild.com">www.cinemaguild.com</a>	The Filmmakers Library 124 East 40th Street New York, NY 10016 Phone: 212-808-4980 <a href="http://www.filmmakers.com">www.filmmakers.com</a>	

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