



BECOMING AN ECO-KID

part of NSN's EARTH UP!

April 5th - April 23rd, 2021

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GECKO CANNOT SLEEP (GO TO SLEEP GECKO) ICELANDIC VERSION

Youtube search: Earth Care MRM Gecko Cannot Sleep
Bi-lingual tellers: Icelandic-English. Birte Harksen and Ingibjörg Sveinsdóttir

THE NOISY GECKO

Youtube search: Earth Care MRM The Noisy Gecko
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ABOUT THESE ACTIVITIES

These activities are meant to inspire you to take action on behalf of the environment. Addressing the climate crisis is everyone's job, and we've noticed how action-oriented the youth of our planet can be. We hope you act globally, as well as locally. In addition to the activities suggested below, you might create an environmentally-themed piece of art. Storytellers are artists and you can be too!

- a drawing, sculpture, painting, photograph or perhaps a mosaic from natural materials
- an environmentally - themed poem or story
- an environmentally-themed short film
- an environmentally-themed song

These stories and associated activities follow Barry Commoner's four laws of ecology. (The Closing Circle). Try to address these ideas as you enjoy the stories and become active and inspired through the activities.

- 1) Everything is connected to everything else (interdependence);
- 2) Everything must go somewhere; there's no such thing as 'garbage'.

3) Nature knows best; nature is resilient as long as there's time to adapt

4) There is no such thing as a free lunch. Every action costs something.

All forms of life are equally important on our finite planet. Human behavior has caused disruption in our climate and environments and in the diversity of life forms found in Nature.

1. GECKO CANNOT SLEEP

COMPARING THREE VERSIONS OF GECKO CANNOT SLEEP

Activity contributed by Jane Stenson

Three versions of GECKO CANNOT SLEEP invite comparison; Yes, it's a mash up, but you can figure out which story is which. Make a chart to help you think boldly about each version and the significance of the folktale.

1. What is it about the mash up format that adds or detracts from understanding?
2. How do the various tellers communicate with us?
3. How do the various languages aid our understanding?
4. Is the sound of the many languages interesting? Does it delight you? Do you want to hear more?
5. How do the plots in the three versions differ?
6. Does the location or setting matter to the story?
7. How are characters differentiated?
8. What do you like about each version?
9. What is one topic, place, or ecosystem these versions make you curious about?

ACTING OUT GECKO, PRIMARY

Primary Level Activity. Contributed by Sherry Norfolk.

MacDonald, Margaret Read. *Go to Sleep Gecko!: A Balinese Folktale*, illus. by Geraldo Valério. Little Folk/August House, 2006.

A 2nd grade activity by Sherry Norfolk.

Next Generation Science Standard: 2 Interdependent relationships in ecosystems.

Goal: Interconnectedness can be explored easily – and joyfully! – by dramatizing the story.

1. Share the story using character voices and sound effects!
2. Review the sequence of the story, emphasizing cause-and-effect and relationships.
3. Demonstrate dramatization, asking 6 students to assume the roles of Gecko, Elephant, Firefly, Buffalo, Rain Cloud and Mosquito
4. Divide into groups of 6 or more and give them time to rehearse the story.
5. After they have performed once, explain that each group will have a chance to take the stage again – but one of the characters will be removed! Teacher assistance in thinking through this ‘new’ story may be necessary. The remaining cast will continue the story without that character and depict the result. Give them time to rehearse or plan the removal of each character and the results. Encourage the players to really dramatize stepping in the buffalo poop, etc. In other words – make it fun while making your point!

6. Find a way to randomly assign the removed character to each group (roll die, spin a spinner, draw cards, etc.).
7. Ask each to group present their new version of the story.
8. Discuss the message of the story and how it relates to the classroom, the community and the world.

EXAMINING INTERRELATIONSHIPS IN GECKO

Upper Elementary Activity Contributed by Sherry Norfolk

Objectives

Fifth Grade students will be able to say:

1. I can research interdependent flora and/or fauna within specific ecosystems.
2. I can write, revise, edit, and publish a fictional narrative, which includes scientifically accurate information that describes the movement of matter among plants, animals, decomposers, and the environment.
3. I can perform stories for the class.
4. I can provide positive peer feedback.

Activity

Analyze the story together in your class.

Next: Can we move this story to another locale? brainstorm as a group
Where will the story take place? Who are the human characters?
What kinds of plants and animals live in that ecosystem? What interdependencies would be upset if one of the living things was either removed or greatly multiplied? (How can we find out?) What causes the imbalance and why? What is the result of the imbalance? How does the story end?

Create individual stories based on this model.

Reprinted with permission from Stenson, Jane, et al, *Science with Storytelling: Strategies for the K-5 Classroom*, “All Things Are Connected” by Sherry Norfolk. McFarland & Company, Publishers, Jefferson, North Carolina: 2017.

2. MIKKU AND THE TREES

TAKING CARE OF YOUR LAND

Activities from Margaret Read MacDonald

1. Make a list of all the things trees do for you. Trees provide nuts, fruits for us and wild animals, they help the soil retain moisture, clean the air, provide shade, trees help protect the homes near them from cold winds and hot sun, etc.
2. Try to identify trees on the land around your school or your home. To help identify them you can use an app such as PlantNet Plant Identification or other apps that you can download for free.
3. Make a map of your land, showing where the trees are, with their names. Are there spots that could use another tree?
4. Plant a tree. You can purchase one, find an organization which gives small trees for free, or transplant a small tree you find growing in wild land. Search online for instructions before planting. We dig a hole twice as wide as the tree’s root ball and as deep as the root ball. Mix wood chips with good soil and put a bit in the hole. Put in the tree. Fill

around the root ball with good soil. Water well. Stake the tree up if it might lean. Spread wood chips around the tree to help it retain moisture and keep weeds out.

TREE IDENTIFICATION

Upper Elementary and Middle School. Contributed by Kevin Strauss

ACTIVITY - TREE LEAF KEY ACTIVITY

1. Combine the leaves and needles students gathered from their homes and the school yard. Organize them by similarities.: round leaves, oval leaves, lobed leaves with bumps, et al. Give each group of students one pile. Give each group guidebooks asking them to identify the tree from the leaves. If the pile has several kinds of trees in it, divide the pile by species level of identification or genus.

1. A quick way to identify trees is to use a dichotomous key by answering the questions below:

1. Is the leaf needle-shaped (thin)? yes no
if answer is YES, go to 2. if NO, go to 3

2. Does the needle-shaped leaf have long needles? yes no
if YES, it is part of the pine tree family.
if NO, it part of the spruce, fir, cedar group.

3. Is the leaf made up of little leaflets? yes no
if YES, it is part of the ash and locust group.
if NO, go to 4.

4. Does the leaf have lobes (little thumbs that stick out from the leaf)?
if YES, go to 5. yes no
if NO, go to 6.

5. Is the leaf 'hand-shaped' with three to five lobes? yes no
 if YES, it is part of the maple group.
 if NO, it is part of the oak group.
6. Does the leaf have a flat petiole (leaf stem)? yes no
 if YES, it is part of the aspen group.
 if NO, it is part of the birch and elm group.

Dichotomous keys are tools designed for a particular habitat. A key made for one area may not work in another area. But the principles on which the keys operate always apply. By building a key with "yes or no" questions, scientists, naturalists, and the general public can develop ways to categorize and understand the diverse animal and plant life on the planet.

Reprinted with permission from Kevin Strauss, *Tales with Tails: Storytelling the Wonders of the Natural World*. Libraries Unlimited, Westport, Connecticut: 2006.

TO BE OF USE activity from Kevin Strauss

Grade Level: primary

Objectives:

1. Paying attention to trees.
2. Studying how trees help the economy.
3. Noticing the gifts trees freely give to all of nature.

Activity:

1. Participants run around their house for 60 seconds and make a list of all the things they find that came from a tree. Have participants count up the results, and then do it again for 60 seconds to find additional things not on their first list.

2. Gather participants and talk about what they found. Some will be easy (kitchen cabinets, wood floor, laminated wood floor-not 100% wood, but mostly wood, etc., other things would be harder. Rank by ALL wood, PARTIAL wood and determine the 'other' building products.
3. Research a list of all products made from wood. Compare what's in your home to this list.
4. Have participants draw a picture of a tree in their yard, paying attention to the overall shape of the tree. List other "gifts" that trees give us: shade, windbreaks, squirrel homes, oxygen, places to climb. Have participants add themselves to the tree picture. How are they enjoying that tree's "gifts?"
5. Then draw a second picture of what they can do in the next month to help "give back" to the trees in their life. Perhaps by watering the tree during a drought, Fertilizing the tree, trimming dead branches, hugging the tree, talking to the tree.

Activism: paying attention to trees - their canopy, their growth, as host. How can you best care for your trees?

Trees as Habitat - Meet a Tree Observation activities from Janice Kelley, M.S.

Goal

Students will observe and learn about the dynamic growth systems, structure and canopy of a tree.

By developing a meaningful relationship with a tree as a living system, observing what causes tree health and what can harm it, students will be more aware when a tree(s) are not thriving. This will ideally lead them to identify appropriate next action steps.

Grade Level: Children grades one through four (higher grade levels provide more detailed observations)

Objectives :

1. Examine and take note of the tree bark, branches, canopy and structure to speculate on its age and evidence of disease.
2. Compare and contrast the branches, trunk and canopy of the tree to their human form and function.
3. Observe what lives in a tree and site evidence of animals past or present.
4. Create a detailed illustration and/or description of the tree.

Time: 45 minutes

Supplies: 6 sheets blank 8 x 11 white paper assembled into a bound journal format (stapled)

Blank sheets are better for combining drawing and writing.

Background:

1. Leaders introduce the students to the idea of “meeting a tree” through careful observation. They describe the living systems of a tree (bark, sap, leaves, canopy) and ask students to consider and provide feedback on how their own living systems are the same or different from trees.
2. If available, leaders should show and identify the cross-section of a tree.
3. Students are asked to examine both the “big picture” of the tree - size, structure and shape of the tree canopy and the small details that may include bark texture, signs of wildlife, disease or injury.

4. Students are instructed to select their own tree and record their observations, based on the attached study questions, through illustrations, narrative, and/or data measurements in Discovery Journals.

Meet a Tree Observation Activity

Depending on the size of your group, you may choose to visit students individually and at random to ask a selection of questions. If you have a large group and individual visits with each student is not possible, present the handout with questions for them to consider during their observation. Review the questions to assure that all students understand the questions and what they are expected to do.

1. Students may go individually or in pairs to meet their tree. Each student is responsible for writing and/or drawing individual observations in his or her own journal.
2. Gather students to reconvene after 30 minutes of observation.

Meet a Tree Study Questions

Examine the tree bark, its branches, leaf canopy and structure. Challenge yourself to guess its age and look for any evidence of disease or holes made by insects or birds in the tree. Questions below are guides to help “meet the tree” and create an understanding of its life and habitat. Respond thoughtfully to as many questions as time permits. Do not feel pressured to answer every question.

1. How does the tree receive and transport its nutrients to survive?
 2. Describe the tree bark. (using descriptive words such as density, texture, scent or color)
 3. What is the usual habitat of the tree? (such as forest, wetland or grassland) How has this tree adapted to its habitat? In what way? In what habitat(s) do you suspect it would not survive?
 4. Draw a leaf or needles from your tree. Describe how the leaves/needles arranged on the branch?
 5. Describe the role of the leaves or needles in supporting the life of the tree.
 6. Look at the ground near the tree for signs of decomposition. Describe the evidence.
- Compare the difference between the shape of your body and trees. Are your arms like branches? Do you have a trunk? How do you and the tree receive and transport nutrients through your “trunks?”
 - How do you think this tree reproduces itself?
 - Name three ways or living things that can harm this tree. (excluding being cut down by a saw)
8. Visit a second tree that has different characteristics. Compare the bark, tree canopy, leaves or needles and cones.

Reprinted with permission from “Through the Eyes of John Muir, Practices in Environmental Stewardship” and Inspired by John Muir by Janice Kelley.

for more information visit <http://naturedetectiveusa.com>

3.FROG AND LOCUST

AMPHIBIAN LIFE CYCLE Activity by Karen Golden

Themes: This story is about how a group of frogs and locusts worked together to bring about rain after a drought. This story can also be a bridge to looking at how the effects of climate change and global warming have caused changes in rain patterns which affects wildlife and insects.

Age range: Grades K – 5

1. Students can learn about the life cycle of amphibians and the importance of water for frogs. Why did the frog in the story say he would die if it didn't rain?

Frogs need to live and produce in water.

2. Grades K – 2

The amphibian hokey, pokey – sung to the hokey pokey song,

“Put your left foot in put your left foot out, put your left foot in and shake it all about

Do the hokey pokey and turn yourself around, cause you're an Amphibian.”

Same pattern on: right foot, left arm, right arm, head

At the end sing a verse with “you jump in and jump out.”

3. Grades K – 2 Frog life cycle craft – there are many examples online.

PLIGHT OF FROGS WORLDWIDE Activity by Karen Golden

1. Grades K – 5 The locusts helped the frogs by singing with them and this story warns us that we must all care about the plight of frogs and drought around the globe because this affects all of us.
2. The Plight of Amphibians: Most conservation organizations, scientists, and researchers agree that at least 200 frog species have disappeared from around the world since 1979. If we do the math, in the past 36 years that's one species every 66 days. Frogs naturally go extinct at a rate of 1 every 250 years.
3. According to the International Union for the Conservation of Nature, at least 41 percent of amphibian species are at risk of extinction.

What can we do: Here is a website of things we can do to help the frogs:

<http://allaboutfrogs.org/info/save/whattodo.html>

Highlights are:

Create some space for wildlife, reduce, recycle, reuse, start garbage free lunches.

Here is another website:

<https://www.tractorsupply.com/tsc/cms/life-out-here/garden-home-land/gardening/how-to-help-save-frogs-on-your-land>

Highlights are:

Avoid using chemicals on your lawn, let part of your land go wild, learn about frogs and educate others.

Action plan: learn about frogs native to where you live and have a frog education day where everyone wears green and presents a report on what they have learned about frogs. Create an action plan based on the ideas presented above.

What about the locusts?

The drought has affected them as well. Locusts are known for forming large swarms and destroying crops.

Global warming has changed rain patterns, and this can cause large locust swarms:

“The conditions must be just right for locusts to join forces. Sudden rainfall, for example, could help feed a growing population and cause flooding that corrals locusts together and attract more locusts to join. What starts as a small group can turn into a thrumming swarm of thousands, millions or even billions of locusts. “

<https://insideclimatenews.org/news/22032020/locust-swarms-climate-change/>

Action plan: learn about locusts native to where you live, and the effects locusts have had in other countries, and through history.

Have the students retell the Frog and Locust and “Interview” the frog and locust characters in the story and ask them why water is so important to them based on their new knowledge.

CONSERVING WATER Jane Stenson

How many stories about rain NOT falling do you know? Desert areas in the world are growing. Available fresh water for plants and animals is becoming scarce. What can your family do at home to protect and conserve water?



“Next to air, water is the most important element for the preservation of life. Water is a finite commodity which, if not managed properly, will result in shortages in the near future. Water conservation can go a long way to help alleviate these impending shortages.

Children with an accompanying adult can be responsible for the housekeeping situations mentioned here.

- 1. Check your toilet for leaks.**
- 2. Stop using your toilet as an ashtray or wastebasket**
five to seven gallons of water per flush!
- 3. Put a plastic bottle in your toilet tank**

Put an inch or two of sand or pebbles in the bottom of a one liter bottle to weigh it down. Fill the rest of the bottle with water and put it in your toilet tank, safely away from the operating mechanism. In an average home, the bottle may save five gallons or more of water every day without harming the efficiency of the toilet. If your tank is big enough, you may even be able to put in two bottles.

4. Take shorter showers

5. Install water-saving shower heads or flow restrictors

6. Take baths

7. Turn off the water while brushing your teeth

Before brushing, wet your brush and fill a glass for rinsing your mouth.

8. Turn off the water while shaving

9. Check faucets and pipes for leaks

10. Use your automatic dishwasher for full loads only

11. Use your automatic washing machine only for full loads only

12. Don't let the faucet run while you clean vegetables

Rinse vegetables instead in a bowl or sink full of clean water.

13. Keep a pitcher/bottle of drinking water in the refrigerator

14. If you wash dishes by hand, don't leave the water running for rinsing

15. Check faucets and pipes for leaks

16. Water your lawn only when it needs it

17. Deep-soak your lawn and buy eco grass

18. Water during the cool parts of the day

19. Don't water the gutter

20. Plant drought-resistant trees and plants

21. Put a layer of mulch around trees and plants.

CREEK STUDY activities from Janice Kelley, M.S.

Goal

Study creatures that live in a creek habitat and develop a hypothesis for how their lives could be influenced by changes in their fresh water habitat.

Grade Level: third and fourth grade students

Objectives

1. Identify creatures living in the creek.

2. Identify the water source for the creek.
3. Brainstorm ideas on what forces of nature and/or predators can change the habitat.
4. Develop a hypothesis on the impact of change to the environment.
5. Conduct investigations on a phenomena occurring at the creek.

Time: 45 minutes

A. OBSERVATION

Advance Preparation

Assure that the creek offers areas where students can make at least three or four meaningful investigations.

Equipment and Supplies

Thermometer

Tape measure

Container to collect samples (e.g. plastic bag or clear cup with lid)

Hand lens or magnifying glasses

Field Journal

Procedures

Background

1. Explain that creeks provide habitat for creatures living in and around the creek.
2. Provide two or three examples, such as weather, pollution or erosion that influence the life of the creek and the creatures that depend on it for their survival.

3. Advise students that they will be conducting an investigation of the creek in pairs or groups of three.
4. Describe procedures for observing the creek using the hand lens, water sample cup and their own senses of hearing, sight, smell and touch.
5. Advise students that they need to decide on an experiment to conduct where they can predict what will happen, record the data and repeat the experiment two three times to verify results.
6. Pass out *Creek Study Questions* handout to guide students when developing and recording their experiments. Review the handout to be sure students understand instructions for the project.
7. Describe methods for recording observations their Discovery Journals based on the Creek Study questions. (tables, graphs, lists, narrative descriptions)

Activity

- Leader or students form pairs or groups of three and select a spot on the creek to study.
- Leader monitors activity, prompts and/or responds to questions as needed.
- Leader gathers students after 30 minutes of investigation.

Activism Goal:

This activity introduces students to studying creeks, so they can understand what it looks like when a creek is polluted or otherwise unhealthy or invaded by nonnative species. Awareness is the first path to identifying appropriate actions.

References

Roa, M. (2011). *The Conifer Connection: A guide for learning and teaching about coniferous forests and watersheds*. California State Parks. Retrieve at www.caltrees.org.

B. Creek Study Questions

The questions below are guides to help begin your investigation. Develop an experiment where you can predict what will happen. Repeat your experiments two three times to verify your results.

1. What do you notice about the water? What is its color and temperature? Do you see sediment in the water? If so, how much? What creatures do you see living in the water? What is the speed of the water and its level?
2. Describe ways that you can estimate the speed of the water. Think about what you can hear, feel or see in the water that gives you clues to its speed. What clues can you find that might slow the speed of the water?
3. After you have looked at the water with your eyes, pick up a hand lens or magnifying glass and check if you can see something else that you missed - something that was too small to see with your eyes alone.
4. Do you think this creek is the only place where the creatures in this habitat can survive? Do you notice any signs of creature adaptation? If so, what?
5. How does the water temperature in one place compare to another place on the creek? What do you think is the reason for this difference?
6. Where does the water in the creek begin?
7. Develop a hypothesis about why or how this creek can change. What could happen to the surrounding environment if the condition of the creek changed?
8. Develop a graph or table to record findings of your investigations.

4.SPIDER AND THE PALM-NUT TREE

This story was shared by Liberian teller Won-Ldy Paye of the Dan people.

THE GIFTS OF THE PALM NUT TREE. Activities from Judith Black and Karen Golden

In this tale, the chief asks the people of his village to enumerate all the benefits of the Palm Nut Tree. From palm fronds for their hut roofs, to thick line woven from the fibrous bark that falls from the tree, to it's nuts and oil, they are aware of many things that the tree gives them. It is the chief who bring up the larger gifts, such as the fact that the tree binds the soil to earth with its roots and is thus very good protection against flood.

Choose a common tree in your geographic area. Try and draw it. Then think about and research all the gifts it gives. Following are possible categories:

Food
for humans
for animals
for insects

Safety
for humans
for animals
for insects

Planetary
for the air
for the climate
for the forest understory

Make a diagram and show which part of the tree gives these gifts.

PERSONAL RESPONSIBILITY Activities from Judith Black and Karen Golden

Spider loves Palm Nut sap. When he was told that tapping the trees to obtain the sap was causing them to get sick and die, do you remember how Spider responded? He made up reasons why he could and should continue to tap the trees, and then talked himself into believing them. Remember, he was just one little spider. How much damage could he do?

Idling is allowing your vehicle engine to be on when it is not in motion. It is a dangerous practice which deeply effects air quality, the creation of ground level ozone, and contributes to our greenhouse gasses. This practice also causes and exacerbates (makes worse) asthma. When your parent or caretaker sits in an idling car they rationalize, just like Spider did: It is only me, one little car doing it. It is too cold or hot outside to turn it off and be uncomfortable. I am listening to a good radio show and just want to hear the end of it.

Your Challenge:

Create a poster that your school could enlarge and hang at its entrance. Communicate the hazards of idling and how every single individual action to continue or stop this practice counts. You may be alone in your car, but we all share the air!

If schools are not meeting in person and for students who are homeschooled, another suggestion would be to create a lawn sign that communicates the hazards of idling or even a tee shirt!

SO YOU WANT TO PLANT A TREE activity from Jane Stenson with help from Doug Tallamy and homegrownnationalpark.com

Grade Level: ALL, hopefully an intergenerational project. This is an excellent family or school or church or neighborhood/ community project.

Goals:

1. to recognize that the earth's resources are limited;
2. to recognize that the things we do where we live, work, and farm are critical to conservation efforts everywhere;
3. to acknowledge that people and bio-diversity can coexist;
4. to recognize that each of us, not just scientists, carry an inherent responsibility for good earth stewardship.
5. Begin to recognize that if Nature does not survive, humans will not survive.
6. Plant the right tree in the right place.

WHAT EACH OF US CAN DO to renature our surrounds

1. shrink the lawn
2. remove invasive species
3. plant keystone genera (plants that provide food that fuels insects)
4. be generous with your plantings
5. plant for specialist pollinators
6. network with neighbors
7. build a conservation hardscape
8. create caterpillar pupation sites under your trees
9. do not spray or fertilize

ACTIVITY: Choosing the right tree for the right spot.

1. Have students determine which trees are keystone genera in your area/habitat; remember habitats are specific.
2. Determine the top 10 trees, the top 10 shrubs or small trees, the top 10 wildflowers for your area and decide which to “check out” at your local nursery;
3. How many caterpillars and pollinators will each tree host? which caterpillars and pollinators?
4. Determine what medium or microhabitat should surround the tree’s base: leaf mulch? which nectar and pollen plants? grass? cement? how large should the surround be? why?
5. Examine the place where you want the tree. How big will your tree be when it’s full grown? How much sunlight and what time of day will the tree be in daylight. Are there electrical/phone/etc lines across the tree canopy area? Will it be easy to get water to the tree? Is there wildlife in the area that might disturb the tree? What is the advisable distance from foundations or another tree?
6. Visit your local nursery and price chosen trees based on your research; do all trees sustain caterpillars and pollinators? Does the nursery have a variety of trees and shrubs specific to your habitat or are there many varieties (exotica) from other parts of the world?;
7. Decide what tree or small tree or shrub you should purchase;
8. Dig a hole twice as wide as the tree’s root ball and as deep as the root ball. Loosen the root ball. If recommended, mix fertilizer with good soil and put some in the hole. Place the tree straight in the hole; it may require staking. The crown should be slightly above ground level. Fill

around the root ball with good soil. Water well and throughout the first summer of growth when the soil is dry. Remove stake after a time.

9. Prepare the surround into a microhabitat of leaf mulch and nectar plants and pollen plants to support growth of pollinators and caterpillars;
9. Be sure your tree is protected from a mower and foraging animals, especially deer.

Evaluation:

After your tree is planted, take some blank paper and maybe colored pencils or some drawing implements. Draw a picture of a tree you remember from your youth. Put yourself somewhere in the drawing. And, well, tell the story of the adventure of you and the tree.

5.THREE GREEN LADIES

A TREE BOOK OF YOUR FAVORITE TREE Activity from Judy Campbell

Grade Level: 2-5th grades

Learning objectives: To develop a deeper appreciation of trees and how we can care for them.

Materials: Head to a forest, park, schoolyard, or even your backyard. Or bring in samples of different kinds of bark, leaves, fallen branches/trunk, nuts, seeds from area trees.

Activity: Make a tree book of your favorite tree.

Include:

A bark rubbing.

Press some leaves.

Draw pictures of your tree in every season.

Hug your tree. How does it feel?

How does it smell?

Does it provide food for animals? Which animals?

What does the seed or nut look like? If you are allowed to collect them, plant a seed or nut to see if you can grow another tree.

Draw pictures and write stories or poems about the animals and birds that live in and around your tree.

If you have a dead branch/trunk, count the rings. How old was this branch or this tree?

List ways that *you* can take care of your tree. Don't hit it with the lawn mower, don't carve things into the trunk, don't use chemicals around the tree, don't break off branches, etc.

For older grades—calculate the height of your tree using its shadow—Similar triangles and ratios.

Some of these ideas from *The Wild Watch Book*—Ann Cooper, Ann Armstrong, and Carol Kampert—Denver Museum of Natural History/Rinehart, Inc. Publishers, 1990.

EROSION AND WATER RETENTION activity from Judy Campbell

Grade Level: 2-5th grades

Learning Objective: To understand that taking too much leads to bigger problems like soil erosion, habitat loss, lack of plant diversity, sedimentation of rivers and streams, (depletion of oxygen, and less carbon dioxide sequestration).

Materials: Sandbox or bags of top soil, dead sticks, grass clippings, a large baking sheet, and a hose with an adjustable head or a sprinkling can.

Activity: In small groups, make three mounds (hills) a few inches high either on a large baking sheet, in an unplanted garden, or in a sand box.

Leave the first mound bare. (A hill completely cleared of trees—"Clear-cutting")

On the second mound, cover the mound with grass clippings and put in a few (3-4) broken twigs. (A hill that has been selectively cut.)

On the third hill, cover the mound with grass cuttings and then stick in twigs close together so it looks like an uncut forest.

Using the hose set on the least water pressure (or the sprinkling can) spray the three mounds evenly until there are streams of water running down the unprotected mound.

Turn off the water and examine the mounds. How did each mound fare?

Can you guess how a clear-cut forest would do in a big rainstorm? Think about the habitat loss and the loss of plant diversity on each mound. What happens to all that soil that washes away?

What can *you* do to protect our forests from over cutting? Recycle wood, use composite products, build using renewables, eat locally raised beef-to protect the rainforest.

At higher grades you could calculate how much oxygen will be depleted from the atmosphere for every deforested acre, how many people that would affect, and how much carbon dioxide would remain in the atmosphere.) 46-58 million square acres are deforested every year. 1 square mile=640 acres. 1 acre of trees produces enough oxygen (O₂) for 8 people and removes 188 pounds of carbon dioxide (CO₂) from the atmosphere.

6.THE MOSQUITO EXTERMINATION PROJECT

WILDLIFE HERE, WILDLIFE THERE: WILDLIFE EVERYWHERE

Activity from Kevin Strauss

Grade Level: 1 - 4

Environmental Themes: adaptation, habitat, bio-diversity

Student Skills: comprehension, inferring, comparison, observation

Materials: hand lenses (optional), clear plastic containers

Instructions:

1. Discuss how animals, especially insects, have adapted to live in a wide variety of places. Ask students if insects live indoors. Make a list of the ways you would know if an insect (or spider) were living indoors. The list could include seeing the insect, seeing a dead insect, seeing a spider web, hearing an insect (like a cricket), or seeing holes in an indoor plant where an insect was feeding.
2. Search the room for two minutes. Make a list of what you find. Then search again (using a hand lenses if you have them) for five minutes. Which search yielded more findings? Why? (Generally speaking, the more you look for something like animal signs, the more likely you are to find something. This activity is a good way to demonstrate that persistence pays off.)
3. Repeat the activity at an outdoor location near your school or library or at a nearby park. Where did you find more insect signs, indoors or outdoors? Why do you think this was so?
4. For older students: have the group describe and sketch the insect signs that they have found. Have them take on the role of a naturalist to describe and make up original insect names for their creatures. Have them complete a one page report about the creature and what they could learn just from its animal signs. After students have described and named their find, have them use guidebooks to learn more about their creatures.

Evaluation: What sensory information did students use to find signs of insects? Could students “make connections” between insect signs and the kind of insect that might leave it behind? Were older students able to describe their insects for their report just from their observations?

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BUILD A FOOD WEB Activity from Kevin Strauss

Grade Level: 1 - 4

Environmental Themes: interdependence, food chain, adaptation, habitat

Student Skills: comprehension, inferring, modeling

Materials: cardstock paper, markers, copies of animal pictures and habitat features

Instructions:

1. Describe examples of a food web or food chain. Ask students to draw an example of a simple (four step food chain) in a forest or mountain area and a food chain from a city area.
2. Once students have drawn pictures of their food chains, have them build a physical food chain mobile using cardstock paper, animal pictures, and yarn.
3. Gather student food chains and tape them on the wall. Then link parts together to make food webs.

Evaluation: Discuss how these food chains and more complicated food webs that we can build out of them demonstrate some of the interconnections in the natural world. Pull on one string in the food web and notice how it affects many parts of the web. The same thing is true in nature.

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MOSQUITO HUNTER ACTIVITY Activity from Kevin Strauss

Grade Level: 4 - 8

Environmental Themes: adaptation, habitat, food chain

Student Skills: comprehension, problem solving

Materials: shaker (made from a plastic jar and rice)

Instruction:

1. In this adaptation of the call and response game “Marco Polo,” a blindfolded bat will try to catch one or more mosquitoes in an enclosed play area. Have students join hands and make a circle. Choose one student to play the bat and one to play the mosquito. Blindfold the bat with a bandanna. Point out to children that bats aren’t really blind. They can see as well as we do, but at night, when there is very little light, they rely on their sonar-like “echolocation” ability to “see” insect prey in the dark.
2. Tell the bat that she needs to find the mosquito by saying “BAT” to “send out a sound wave.” The mosquito has to either shake her shaker or say “MOSQUITO” whenever the bat says “bat.” The rest of the people in the circle are the boundary. Their job is to keep the blindfolded bat safe. When the bat tags the mosquito, she wins the round. If the mosquito can avoid being caught for three minutes, she escapes and the round ends.
3. Try several rounds of the game. Also try adding a second mosquito. Does this make it easier or harder for the bat to find food? What do you see the mosquito doing to avoid capture? What do you see the bat doing to detect her food?

As bats are honing in on an insect, they often send out more sound waves so they can zero in on a prey animal. Some insects will land on trees or the ground so the sonar echoes from trees or the ground will help hide the insect from the hungry bat.

Evaluation: Discuss whether it was easy or hard to be the bat. One defense that many insects have against predators is a high reproduction rate. How did the game change when a second insect entered the game? Do you think this happens in the real world?

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6.THE TAILOR

LISTENING TO THE SONG Activities by Karen Golden

The story of The Tailor was first introduced to audiences as a Yiddish Folksong called “I Had A Little Overcoat”.

Here is the original song”

In Yiddish:

<https://www.youtube.com/watch?v=divQQ6TOaD8><<https://www.youtube.com/watch?v=24yM9S-23qY>>

In English:

https://www.youtube.com/watch?v=KZ37_s7X3jA

Here is a new version of the song:

<https://childrensmusic.org/songs/environment/103/i-had-an-old-coat>

RECYCLING FUN Activity by Karen Golden

Themes: Recycling, reusing

Age range: primary and elementary grades K -5

Learning objectives:

1. Students will understand the concepts of recycling and reusing.

After hearing the story or song, here are a some follow up activities:

1. Make a list of things you could do with the following items other than throwing them out:

An empty glass jar, old towels, toilet paper tubes, egg cartons, used oatmeal cartons (you can add your own items to the list)

Create a recycled craft:

1, bird feeder from toilet paper tube rolled in peanut butter and bird seed

2. Make a treasure box from a cereal box or oatmeal container
3. Make planters from used tea tins
4. Learn about the art of quilting and make a small quilt out of old clothes.

Here is a list of 100 recycled crafts:

<https://www.favecrafts.com/Green-Crafting/659-Recycled-Crafts-Crafting-with-Recyclable-Items>

Talk about how students can reuse or recycle their clothes and do this activity together.

Here is a list of 27 crafts from recycled clothes:

<https://www.lifehack.org/453113/27-creative-ways-to-reuse-old-clothing>

According to the 5 R's, four actions should be taken, if possible, prior to '**recycling**': **refuse**, **reduce**, **reuse**, **repurpose**, and then **recycle**. Incorporating this methodology into your home and business' waste reduction and **recycling** efforts will minimize landfill waste and help take your **recycling** program to the next level.

REFUSE REDUCE REUSE REPURPOSE RECYCLE