Nature Recycles

Here is a tree with its many parts.
It has leaves and branches, a trunk, roots and bark.

The leaves in the fall turn from bright green to brown.
As the weather turns cooler, they fall to the ground.

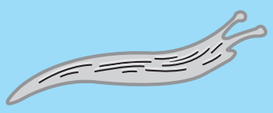
First one leaf will fall and then many more,
As leaves become leaf litter on the forest floor.

Who'll clean up this mess? What shall we do?
Here come nature's recyclers, nature's clean-up crew.

Why do they clean up this leaf litter mess?
'Cause dead leaves have nutrients that they like the best.

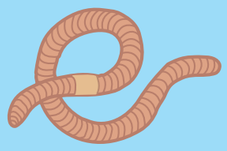
Nutrients are like food, found in things living and dead.
Without them nothing could grow and all life would end.

Let's meet nature's recyclers and see how they toil.
As they break down leaf litter and add nutrients to soil.



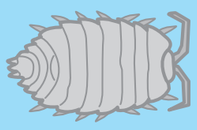
This is a slippery slug, a snail with no shell.
It cleans floors of gardens, lawns and forests as well.

This is a mushroom, a plant that's not green.
It breaks down leaf litter and keeps the woods clean.

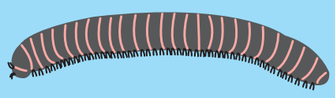


This is a worm. What does it do?
It digs under the leaves and chews them up too.

This is a beetle with a hard black shell.
It chomps all the leaves on the ground where they fell.



This is a sowbug that hides in the dark.
It munches on dead plants in your garden and park.



This is a millipede; try counting its feet.
It crunches up plants and keeps the ground neat.

So nature's recyclers, as they crunch, munch and chew,
Break leaves into pieces that become nutrients too.

Nutrients in the soil make trees big and strong.
They're sucked up by tree roots when spring comes along.

Nutrients are like food, and for trees they are good.
They help make new leaves, strong branches and wood.

And so, last year's brown leaf, that was part of the tree,
Was changed into food to make the new leaves you see.

GeoPrice

Nature Recycles

Background

Nature's recyclers come in many forms: snails, slugs beetles, sow bugs, earthworms, millipedes, mushrooms, lichens and microbes. Each "recycler has its own job in the decomposition (breaking down of organic matter like leaves and branches) process. Some recyclers help break down plant tissue such as leaves. Other recyclers, like ants and centipedes are meat-eaters or scavengers. They like to work where it's dark and moist. The process of decomposition provides nutrients back to the soil. The nutrients will be taken back up into the tree through its roots. These nutrients help the tree make new leaves. The leaves in turn manufacture food for the tree.

Level

Ages 5-6

Skills

Listening, Observing, Identifying, Creating, Fine Motor, Gross Motor

Teaching Objectives

The purpose of this activity is to:

- Provide children an opportunity to learn about nature's recyclers, the organisms that break down leaves and other organic material.
- Help children learn how trees get nutrients from the soil.

Overview

There's lots happening in the dirt – critters, fungi, and microbes are busy working to break down leaves, logs and other mate-rial, putting nutrients back into the soil. In this activity, your students will get to take a look at some of nature's recyclers.

Getting Ready

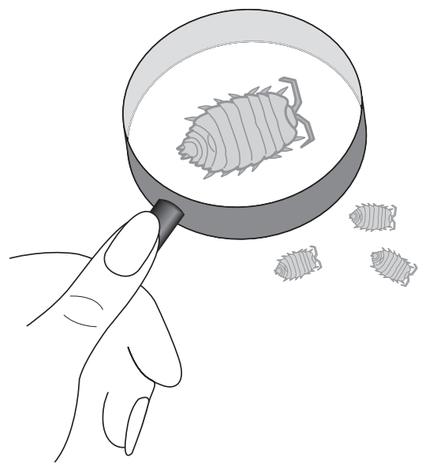
(Suggestion: Before conducting this activity, you might want to complete the *To Be A Tree* and *Adopt a Tree* activities in the Wisconsin Project Learning Tree Early Childhood Activity Guide.)

1. Check out the area you plan to visit to make sure you can find some of nature's recyclers. (You can "plant" a log, a board, or a small pile of leaves directly on the soil several days ahead of time to draw critters to the moist, dark place.)
2. Find a container to put the critters in so that everyone gets a chance to see them. (Be sure to put them back where you found them when you're finished.)

Main Activity

Decay Detectives – Looking for Nature's Recyclers

Materials: Spoons or something to dig with
Container for viewing
Hand lenses (optional)



1. Ask the children, "What happens to leaves on some trees in the fall? What do you think happens to all of the leaves after they fall? Where do they go? Show the poster and read the Nature Recycles poem. Discuss the critters and fungi mentioned in the poem and what they do. Ask the children if they've ever seen any of "nature's recyclers. "What does it mean to recycle? Ask the children what the poem says happens after nature's recyclers break down the leaves? What would happen if we didn't have these recyclers?
2. Talk about the things trees need to grow: water and nutrients, light, soil to hold roots in place, and space. Discuss how "nature's recyclers" help trees by breaking leaves down into nutrients that are taken up by tree roots. Nutrients are like vitamins for the tree. They help it grow big and strong.
3. Follow the indoor discussion with an outdoor exploration in search of nature's recyclers. Prepare the children for a walk outside by explaining that they are going to become explorers searching for nature's recyclers. Remind them that they will be looking into creatures' homes, so everyone must be very careful, touch gently (handle with care, some may bite) and put everything back in it's place.

Here are some places to look for nature's recyclers and what to look for.

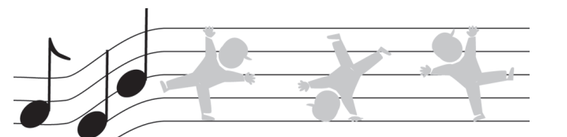
Leaf Litter: As you look through a pile of decaying leaves or grass with the children ask them to look closely at the leaves. Compare the texture of a green leaf and an older, decaying one. What color are they? Are they wet or dry? How do they smell? Can you see any signs of chomping and chewing by nature's recyclers? Look for mushrooms, worms, beetles and millipedes.

Old Log. Roll over an old log. Look for decaying or rotting wood. Nature's recyclers change the old, hard wood into very soft, loose pieces that mix with the soil. Look for worms, slugs, beetles, sow bugs, millipedes and mushrooms. Be sure to return the log back to where it belongs.

Large Rock. Roll over a large rock. Look at the ground underneath. Is it wet or dry? Look for slugs, snails, worms and sow bugs. Roll the rock back into place when everyone is done observing.

Underground. Dig in soil or wood chips with old spoons. Look for worms, millipedes and sow bugs. (You might want to bring a clear container to put the recyclers in so everyone can see them.) Ask the children if they remember what nature's recyclers do. Be sure to put the critters back where you found them and fill in any holes you made.

Alternative indoor format: Bring in a big open container of rich compost from an out-of-doors location. Students can go on an indoor treasure hunt to locate and identify leaf compost critters.



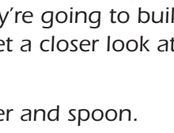
Music and Movement

Rottin' Around

Materials: Descriptions of critters from poster
Drum, two sticks, or something to create a beat

1. Use the poem on the poster for a movement simulation. Begin by exploring, verbally and physically the movement of each animal (millipedes scurrying, slugs moving slowly, sow bugs, curling up, worms wiggling.)
2. Use a drum, two sticks, or other instruments to create a beat to initiate/simulate the movement of each animal. After the preliminary movement exploration time, have the children act out the verses of the poem.

Branching Out with Books



Worm Farms

Earthworms help make good soil. They dig tunnels that let in air and keep the soil loose. Earthworms are important recyclers because they munch on bits of decayed plants and animals. They add nutrients to the soil.

Materials: Magnifying glass
Large clear jar or clear plastic soda bottles (cut the top off the bottle so you have a wider mouth)
Rocks
Soil
Peat moss
Worm food (grass cuttings, tiny table scraps, egg shells, coffee grounds, etc.)
Black paper
Small shovel or spoons

1. Read *Diary of a Worm* or *Wonderful Worms* to the children. Ask them to tell you what they know about worms. Where do they live? How do they move? What do they eat? Can we easily see them? Tell the children that they're going to build worm farms so that they can get a closer look at these critters.
2. Give each child a clear container and spoon. Then head outside on a worm dig.
3. Before digging for worms, place a few rocks in the bottom of each container. Add a mixture of soil and peat moss until it's about 4 inches deep. Have the students dig carefully looking for worms. Invite the worms into their new homes by carefully placing them in the containers.
4. Once back in the classroom, have the children put some food on top of the soil. Foods that work well are apple and banana peels, cantaloupe, watermelon, celery, coffee grounds, eggshell, onion peels, pizza crusts and tea bags. (To avoid fruit flies, completely cover the food with a layer of dirt.) Use table scraps from snack or lunch if appropriate. This way nature's recyclers are helping recycle some of the children's waste. Keep the soil moist, but not wet.
5. Explain that worms are sensitive to light, so the children need to cover their worm farms with black paper.
6. Observe the worm farms for several days. Keep the soil moist and the jar covered unless you're observing the worms. Add new "worm food" every few days. When you're finished with your observations, return the worms to the place where you found them.

A Log's Life by Wendy Pfeffer, Simon & Schuster Books for Young Readers, 1997 ..... ISBN: 0689806361.

In this fascinating book, author Wendy Pfeffer and illustrator Robin Brickman collaborate to introduce readers to the life cycle of a tree. The text is complemented by three-dimensional paper sculptures that showcase the forest ecosystem, inspiring readers to take a closer look at the trees – and logs – in their own backyards.

Deep Down Underground by Oliver Dunrea, Macmillan, 1989 ..... ISBN: 0027328619.

In this lighthearted counting book, ten little creatures "deep down underground" hear a digging mole and wrangle, burrow and scrape, scooch and scrunch to get out of his way.

Diary of a Worm by Doreen Cronin, Joanna Cotler Books, 2003..... ISBN: 006000150.

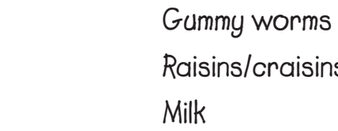
In this hilarious picture book, a young worm discovers there are some very good and some not so very good things about being a worm.

What's Under the Log by Anne Hunter, Houghton Mifflin, 1999 ..... ISBN: 0395754968.

With beautifully detailed illustrations, Anne Hunter shows the creatures that scurry away when you turn over a log. Each illustrations accompanied by simple yet detailed text explaining the nature and habits of the animals.

Wonderful Worms by Linda Glaser, Millbrook Press, 1992..... ISBN; 1562940627.

This book describes the physical characteristics, behavior, and life cycle of the common earthworm. Children will delight in reenacting worm behavior.



Recyclers in the Classroom

Create a classroom-sized version of the poster.

Materials: Paper for tree and leaves
Felt
Other craft material for making critters and mushrooms

1. Create a paper tree like on the Natures Recycles poster.
2. Cut out leaves or buy leaves at a craft store to decorate your tree and the ground.
3. After the *Decay Detectives* exploration have the children make their favorite "recycler" and add it to the area below the tree.

Critters in Dirt

Ingredients: Plain yogurt
Chocolate graham crackers
Gummy worms
Raisins/craisins
Milk

Create a healthier version of the worms in dirt sundae using yogurt mixed with chocolate graham crackers for dirt, raisins or craisins for sow bugs and beetles, and gummy worms for worms. Ask your students if they remember how a tree gets it nutrients, then drink milk with straws, sucking the nutrients up like the roots of a tree.

Assessment Opportunity

Create a leaf compost pile in a protected area of the school yard (shady and protected from the wind). Create several successive layers of leaves, some soil or compost, and water. Observe over time.

Related Activities in the PLT PreK-8 Guide

Nature's Recyclers, Tree Lifecycle, Looking at Leaves, Signs of Fall, Tree Factory, Every Tree for Itself

This poster is both a supplement to the Wee Recyclers Program and the Wisconsin Project Learning Tree Early Childhood Activity Guide. For more information on the Wee Recyclers Program, visit www.dnr.wi.gov/eek/teacher/weerecyclers.htm. For more information on Wisconsin Project Learning Tree, visit http://dnr.wi.gov/education/pltwildwet or email dnrpltwildwet@wisconsin.gov.

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