

# Decomposition

## How Nature Recycles



*A presentation by*



# Decomposition



Where do all the leaves go that fall from the trees in autumn? They become part of the soil in a natural process called decomposition.

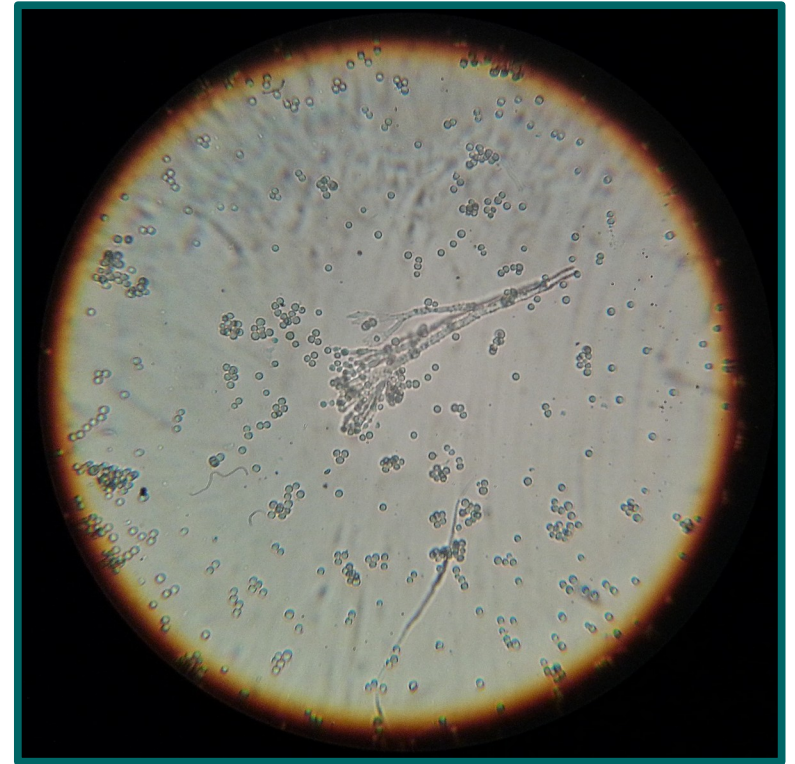


**Decomposition is nature's way of disposing of dead things. Dead plants and animals become food for animals called decomposers.**

**As these decomposers eat dead plants and animals, they recycle important nutrients back into the soil that plants need to grow.**

**Many of these decomposers are bacteria and other microorganisms that are so tiny you can't see them without a microscope.**

**The mold you see on a piece of bread or the mushrooms you see growing in the woods are also decomposers.**



**While decomposers feed on dead plants and animals, they release important nutrients back into the soil. Plants need these nutrients, such as nitrogen, phosphorus, and potassium, in order to live and grow. So nature recycles all dead living things back into nutrients that help plants continue to grow.**

**Left alone on the forest floor, it can take leaves six months to a year to completely decompose. But it can take 50 years or more for the wood of a tree trunk to fully decompose back into the soil.**



**There are other creatures that live in or on the soil that are also decomposers. These include worms, roly polies, springtails, and millipedes.**

**Worms tunnel through hard-packed soil by eating it. The soil is ground up by tiny stones and fine grains of sand in the worm's gizzard. The worm digests some leaves and other plant matter for its food. The rest of the ground-up soil is released from the back end of the worm.**



**An earthworm can eat as much as one-third of its weight in one day. Imagine if you ate that much! If you weigh 50 pounds, eating one-third of your weight would be equal to eating 66 quarter-pound hamburgers in one day.**

# **Worm Poop – Nature's Fertilizer**



**The pellets the worm releases are called castings. This is actually worm poop. Castings are filled with nutrients that make great plant food. Worms are great to have in your garden, because they feed the plants!**

*Photo courtesy Uncle Jim's Worm Farm*

# The Roly Poly



*Photos by Joseph Berger, Bugwood.org*

**Roly polies eat dead leaves and other dead plant matter and help break down their nutrients into the soil. A roly poly, also called a doodlebug or pillbug, will roll into a ball when it faces an enemy.**



# The Springtail

Springtails eat dead leaves and plant matter and help decompose them into the soil. The springtail gets its name because it can bend its tail back and jump when it is threatened.



*Photo by Susan Ellis, Bugwood.org*

# Millipedes

The millipede is another eater of dead plant matter.



'Milli' means thousand, but despite their name, millipedes do not have one thousand legs. They have two legs per segment, or between 36 to 400 legs for the more common types.

**You can make your own free fertilizer for your garden by gathering food scraps and dead leaves into a pile and letting them decompose. This fertilizer is called compost.**

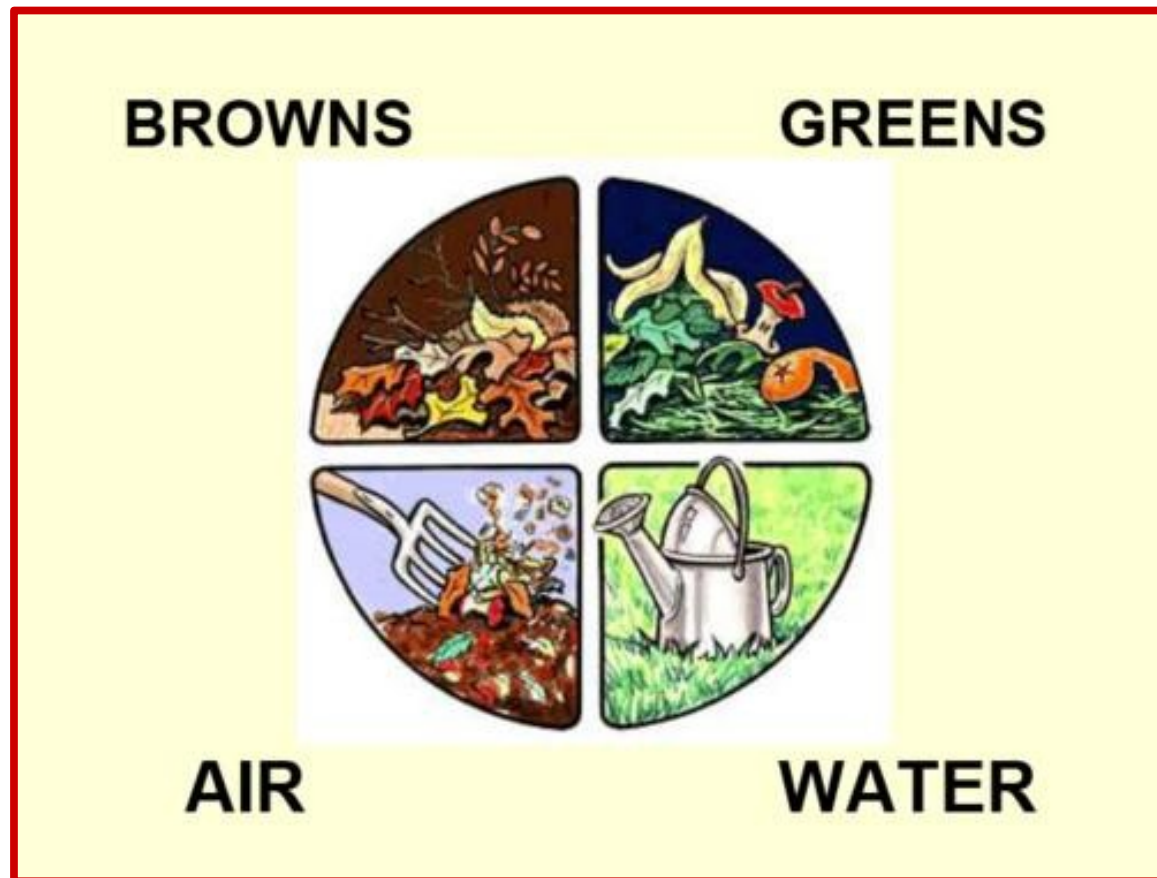


**When it is finished, compost looks like fresh, rich soil. When you mix compost into your garden soil, you are adding essential nutrients that your plants need to grow and be healthy.**

# The Recipe for Compost

You need four things to make compost: green plant matter, brown plant matter, water, and air.

Green plant matter is wet and fresh. Brown plant matter is dry and dead. You need twice as much brown plant matter as green plant matter. For example, if you have a gallon of green plant matter, you need two gallons of brown plant matter to make compost.



# What to Put in Compost

## BROWN MATTER *dry*

dead leaves

dead plants

straw

dry grass clippings

shredded paper

## GREEN MATTER *wet*

fruit and vegetable scraps

like peels, cores, and

seeds.

green grass clippings

green leaves or plant

parts

coffee grounds

tea & teabags

eggshells

## **NEVER put in compost:**

meat, bones, fat, dairy products, vegetable oils,

weed roots or weed seeds

# How to Make Compost

**Select a container. You can buy a composter or you can use any large plastic tub or container. Cut holes in the top and bottom to let air in and water out.**



**You can also just make an open square or rectangle from wire or wood to put your compost in, or you can just make compost in a pile on the ground.**



**Mix two parts brown plant matter with one part green plant matter.**

# How To Make Compost

**Add a few cups of soil from your garden. This soil will contain decomposers like bacteria and fungi that will start eating your plant matter.**



**Add water so that your compost is moist but not soaking wet. Check the compost each week to make sure it remains moist and add more water if needed. The decomposers working in your compost need water to survive.**



## **Stir and Stir Again**

**Stir your compost well to add air and try to mix it up every week.**

**It will take three to six months for your green and brown plant matter to become compost. The more you stir to add air, the quicker you will have finished compost.**

**Even though your compost contains fruit and vegetable scraps, your compost pile should not smell like rotting garbage. It should smell like rich earth.**

**If there is a bad smell, check that your compost recipe is correct. You need two parts brown plant matter to one part green, water to make the compost moist but not soggy, and air.**



**Your finished compost should look like dark, rich soil. Mix the compost into your garden soil before you plant seeds or spread it around plants that are growing. The compost will give your plants the nutrients they need to grow.**

