

# Composting with Willie the Worm

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**Hi Kids! My name is Willie the Worm and today I will be your compost host! Composting is a great way to help the environment and it something that everyone can do! Follow along as I tell you more about composting.**



## Introduction

Have you ever wondered how you can change garbage into treasure? If you said "COMPOSTING," you would be correct!

Because landfills are filling up so quickly, it is up to us to find new ways to get rid of our garbage. About 30% of all the garbage in the United States is made up of waste from food and yards. Composting is a great way to recycle household and lawn waste. This waste includes grass clippings, egg shells, and orange peels. Composting is a biological process that occurs when tiny, microscopic organisms break down old plant and animal tissues and recycle them to make new, healthy soil. These old plant and animal tissues are often called organic wastes.

The experience of composting shows us that nature is a cycle. Things grow, die, decay, and return to the earth to help other things grow. Worms, along with other tiny organisms help this process along by digging and eating some of the things in the dirt. "Yuck!" you say? Well, hopefully you will see that organic wastes can become beautiful and healthy soil in which you can grow flowers, crops, and other plants.

## Before you Begin

In order to create a compost pile, you will need to gather some tools, as well as educate yourself about composting.





Composting is not a difficult process. You don't even need very many tools. However, you should gather the following things before you get started:

In addition to these items, you may want to consider other composting materials such as organic fertilizer, specialty worms, or dried hay. You can visit your local garden products dealer or home and garden store.

Now that you have all the tools you need, let's see what Willie the Worm says we should do next!

### **Location**

Setting up a compost pile can be very easy if you are ready to do a little work! The first step is to select a location for your compost pile. You can put it anywhere in your backyard except near the house or a fence. If your pile is too close to your house, the worms and organisms that will live in the pile may get into your house! Yuck! So make sure you have plenty of room to work around. You may also want to be sure that your garden hose reaches the spot where you are working since you will need to water it occasionally. The pile should be at least 3 feet wide by 3 feet deep by 3 feet tall. If it is much smaller or larger, it won't compost correctly!

### **Compost Pile or Bin?**

You can either build your pile on the ground or buy a special bin to contain the pile. Check with your parents to decide which option is best for you.



Using a bin can help your pile to look neater and it will work faster. You can also buy special bins so that you can compost inside your house! There are many different kinds of bins that you can buy or even make yourself!

## Compost Recipe

Now that you have a location and perhaps a container in which to store your pile, what should you put in it? Your "recipe" for great compost is made up of two basic things: green stuff and brown stuff. Green stuff is materials like grass clippings, lettuce scraps, weeds, and other plant wastes. These green materials have high amounts of the element nitrogen. The compost pile needs nitrogen in order to help the micro-organisms work properly. In addition to nitrogen, you also need plenty of the element carbon in your compost pile. Carbon gives the micro-organisms energy to do their jobs. Carbon is found in brown stuff such as leaves and pine needles.



There are a few no-no's in composting. You should not put the following materials in your compost pile:

- Meat scraps
- Bones
- Dairy products such as milk, cheese, or ice cream
- Oily foods

These products attract rodents and may cause the compost pile to stink! Yuck!

You can put small scraps of newspaper in your pile because it is biodegradable. You can also throw in droppings from small animals such as hamsters and gerbils.

## Building the Compost Pile

To build the best possible compost pile, there is a certain order in which you should layer the organic materials.



- First, use the garden hose to wet the ground under the pile
- Place some small twigs or leaves at the bottom (brown stuff). This will help the pile get oxygen later.
- Add your organic wastes now (green stuff)! Be sure to keep the pile somewhat damp as you are adding materials.
- Add some soil to the pile. This layer contains the micro-organisms and worms that will help make the compost.
- Put more leaves, hay, or very small twigs (brown stuff) on the top of the pile.



## Taking Care of your Pile

In a few days, your pile should become very warm inside. It can reach temperatures of between 90 to 140 degrees within 4 to 5 days. You may even see steam rising from it! You should use your shovel or pitchfork to mix up and turn the pile every few days. This will help the tiny organisms and worms to work on the entire pile. Also make sure that the pile has plenty of moisture without getting too wet. If you pick up a pile of the dirt and squeeze it, a few drops of water should come out.



## Bugs and Worms

When you look at your outdoor compost pile, you might not notice anything happening. However, inside the pile a flurry of activity is going on! Bugs such as millipedes, snails and slugs are shredding the materials into smaller pieces. These smaller pieces are easier for micro-organisms like fungi and bacteria to eat. These tiny organisms are so small that you can only see them under a microscope!

Worms are very helpful in composting piles. They help to increase air and water in the soil as well as breaking down leaves and grass so that the micro-organisms can work. We also help to distribute the organic materials evenly throughout the pile. Worms are amazing. Here are some cool facts about worms:

- The largest earthworm ever was 6.7 meters long and was found in South Africa.
- Worms can grow new tails if they are cut off, but they cannot grow a new head.
- Worms do not have eyes but they can sense light. If they are in light for too long, they will become paralyzed.
- Worms can eat their weight each day.
- If a worm's skin dries out, it will die.

## What to Expect

You will notice that your compost pile will shrink as time goes by. This means that the composting process is working. It can take anywhere from 2 months to 2 years. You will know it is done when the dirt is crumbly and dark and smells woody and earthy. Your compost is now ready to use in the garden!





**If you are having trouble with your composting pile my friend Karel, the Compost Worm, can give you advice on what to do!**

### **My pile isn't getting all warm inside!**

This probably means that your pile is too small or too dry. You should add more stuff to your pile. As you are adding materials, you should water the pile and turn it with your shovel or pitchfork.

### **My pile is being infested by rats and other animals!**

Animals are attracted to meat and animal products. This means that some one probably put some old meat scraps or raw eggs in your pile. You should not put these materials in your pile. If you must put food scraps in the pile, be sure to cover them well so that the animals cannot get to them.

### **My pile is stinky!**

Smelly compost piles are usually just too wet or too tightly compacted. Turn your compost pile with a shovel or pitchfork to loosen the soil and expose it to the air.

### **My pile is moist and smells sweet, but it still doesn't seem to be heating up!**

This means that there is not enough nitrogen in the compost pile. Add some fresh grass clippings or a little fertilizer to the pile to fix the problem.

### **Resources:**

Mulching and Backyard Composting Guidebook, Michigan Department of Environmental Quality:

<http://www.deq.state.mi.us/documents/deq-whm-stsw-Mulching%20and%20Backyard%20Composting%20Guidebook.PDF>