

Grinnell College Dorm Compost Guide

What is Composting?

Composting is the recycling of organic materials. In nature, all things are constantly being recycled within ecosystems. Similarly, composting facilitates the natural breakdown of organic matter, which can then be used as a soil amendment. When added to trees, indoor plants, gardens, and parks compost can:

- protect soil from erosion and compaction
- provide plants with essential nutrients
- help improve soil quality
- increase soil organic matter for water retention
- increase rain water infiltration into the soil

The ingredients needed for compost are readily available to us – they are in our everyday trash. By composting these materials, such as food scraps and newspapers, we can keep these valuable sources of plant nutrients out of landfills and incinerators and instead use them for our public green spaces and gardens.

Our Mission

By composting our organic matter in the Grinnell College dorms and other buildings and residencies on campus, we can reduce our total waste stream and at the same time create a valuable resource for our local land and plants on campus.

Compost Basics

What does your compost eat?

To be healthy your compost needs both Carbon (**BROWNS**) and Nitrogen (**GREENS**). These aid in microbial decomposition and are the very building blocks of compost. The ratio of **BROWNS** to **GREENS** should be around 1:1 – this means that for every piece of **GREEN** there should be an equal amount of **BROWN**.

GREENS include:

- Fruit and vegetable scraps
- Coffee grounds
- Tea bags
- Dry grains
- Fresh leaves and green plants
- Grass clippings
- Prunings
- Weeds
- Flower bouquets
- Seaweed
- Feathers

- Horse manure
- Guinea pig or hamster droppings
- Brewery wastes

BROWNS include:

- Dry Leaves
- Nut Shells
- Dead Plants/dried flowers
- Corn stalks
- Pine needles
- Bark
- Woodchips and sawdust
- Food-soiled paper towels and napkins
- Shredded paper
- Newspaper
- Corrugated cardboard
- Oil potting soil
- Wood ashes
- Egg shells

THINGS TO AVOID include:

- Meat and fish scraps
- Dairy products
- Fats, oils and grease
- Dog and cat waste
- Invasive weeds
- Weeds with seeds
- Diseased plants
- Non-organic matter (plastics, metal, glass, etc.)

What your compost wants:

- **Aeration** – Oxygen is essential to aerobic decomposition and without it will lead to a smelly compost bin
- **Moisture** – Not too little and not too much. Your compost should feel equivalent to a “wrung out sponge,” which it usually acquires from the added **GREENS**
- **Time** – Although we may be giving the compost bin everything its needs, composting still takes time – Be patient and there will soon be a reward!

Composting Systems

There are many ways to compost your organic matter that comply with the level of energy you wish to contribute. Compost systems can either be monitored weekly or bi-weekly, while some can be left alone, needing only maintenance a few times a year. Everything decomposes, but it is up to you on how speedy the process moves.

Compost Bins

What is a compost bin?

Compost bins come in many shapes and sizes and are used as a ventilated location for the decomposition of organic waste. They are made out of many things, such as wood, plastic, and or metal, and are commercially sold in a wide variety of styles.

Our bins

Every dorm on campus will be equipped with their own compost bin, designated in an easily located spot outside for all of the dorm's residents to use and deposit their organic matter. The bins for the dorms have been chosen by the amount of organic matter they will be fed, how often their will be monitored, and how much space we have available outside the dorms.

Common Myths

- **COMPOST BINS SMELL** – When taken care of properly, a compost bin outside will not cause any odors as it will be properly aerated
- **COMPOST WILL ATTRACT UNWANTED GUESTS** – There are many types of compost bins and ways to keep wildlife out of your compost bin, so that unwanted animals are not a problem. Also, attraction of animals is one of the main reasons by covering your food scraps with paper or leaves are so important. Not only does covering the food scraps facilitate decomposition, but also it helps hide the food from local critters.
- **ITS TAKES YEARS FOR COMPOST TO FORM** – The more work you put into the compost bin, the faster and better quality will be the compost that comes out. This is where the DECS will play a large role in monitoring and caring for the compost bin about once a week.

Who will care for the bins?

Everyone in the dorms should feel free to take care of the compost bin by aerating it and feeding it their waste. However, the DEC of the dorm will be the main person in charge of the bin, as they would have received specific training in compost bin maintenance. The DECS will make sure that the dorm waste is properly added to the bin as to maximize composting efficiency. If any of the students have questions or concerns about the compost bin, the DEC should be their main reference guide.

Worm Composting

Another way for students to turn their organic waste into compost is through indoor worm composting. Worm composting uses redworms, also called *red wigglers*, to change food waste into compost. Really worms make what is called **vermicompost**, which are essentially their castings. Worm composting is very efficient at removing waste, as a pound of worms will eat approximately half their weight of scraps in a day. The vermicompost is also stronger than regular compost as it has the added bacteria contributed by the worms as well as a high density of nutrients for plants.

How it works

Each dorm will have a box of worms (*Eisenia fetida* or *Lumbricus rubellus*) available in a central, but mostly unoccupied area of the dorm building. Each box will contain two pounds of worms. The DEC's will be in charge of the care of the worms, making sure that nothing gets inside the bins as to harm the worms. If there are any concerns about the worm bin, the DEC should be contacted.

Common Myths Debunked

- **WORMS BINS DO NOT SMELL** – Worms are efficient at aerating the contents that are composting, which therefore removes any smell of decomposition.
- **THE WORMS WILL NOT COME OUT** – The worms chosen for the composting box are suited to live 8-10 inches in the soil and will therefore not try to leave the box (unless they are being drowned).
- **WORMS ARE NOT A HEALTH HAZARD** – Nothing that is diseased or harmful will be in the bins and as long as you wash your hands after touching the worms there are no health threats.

Common Problems

- **WORMS TRY TO ESCAPE** – When worms try to escape the bin, this is most likely due to the fact that they are being drowned by all the water that has leached from the food scraps, in which case you should add more paper to absorb the moisture and reduce food scrap additions for a week. Worms may also try to escape because they do not have enough food or moisture, in which case they are fleeing in order to survive. Keep in mind that worms are like pets and need the same things any pet would: food, water, and shelter. Take good care of them and this problem will most likely never occur.
- **FRUIT FLY INFESTATION** – The best way to stop this problem is by never having it in the first place. When possible wash food scraps with water to remove eggs that might have been laid beforehand. Also, try to avoid adding thick-skinned fruits (such as oranges and bananas) because fruit flies usually lay their eggs in the skin. Please compost these fruits in the outdoor bins, where fly infestations are not a problem. Keeping food scraps properly covered also reduces the chances of fruit flies. However, if the problem already exists there are several ways to go about it. If you have outdoor space, keep the worm bin outside to air it out occasionally. Also use a few large sheets of wet newspaper and place it all along the top of the bin – this will minimize the ability for the flies to leave the bin

and mate in the air (it traps flies with the food and some above the food, disrupting reproduction). There are also various flytraps that can be used to capture the flies. The last resort would be removing the compost and worms and starting a new bin, but this is usually unnecessary.

- **CONTAMINATION OF BIN WITH OTHER BUGS** – Occasionally when you look into your bin to add scraps, you will see various types of insects that are not your worms. Do not be alarmed. All of these insects are contributing to the decomposition of the organic waste and are essential ingredients of a healthy compost system. These bugs should, like the worms, stay inside the box if the box is maintained.

Instructions: Starting a Worm Bin

Step 1 – Constructing the Worm Bin

The size of the bin depends on how many food scraps you produce and the amount of space you have. In a dorm room a regular plastic storage bin, which is easy to find, is perfect for a pound of worms. The only necessity of the worm bin is that it cannot be shallow. The bin should be **8 -12 inches deep** to mimic the natural habitat of the worms. Drill 10 quarter-inch holes on the top or around the top of the box for air circulation.

Step 2 – Bedding Material

The worms want 8 inches of bedding material. Inside the dorm it is beneficial to use old paper (newspaper is the best) and rip it length-wise into 1-inch strips. Soak the strips in a bucket of water to make them damp.

Step 3 – (Optional) – Wash Food Scraps

Washing your fruit and vegetables waste will minimize the chances of an infestation from fruit flies. But do not worry; there are ways to combat fruit flies if they come.

Step 4 – Add Food Scraps

This is the part when you add your **GREENS** to the worm bin. Every time you add your scraps you will want to cover them with more bedding (**BROWNS**) and place them in a new section of the bin. This will help your worms compost everything efficiently and will also detract from any unwanted smells.

Step 5 – Add Worms

Each student with a bin should add about a pound of red worms (*Eisenia fetida* or *Lumbricus rubellas*) to the top of the bin and let the worms naturally move down to darker areas. Do not try to use worms from outside, such as nightcrawlers or other garden worms, they will not stay in your bin.

Step 6 – Covering Food Scraps

Bury food scraps underneath the newspaper bedding material. Make sure food is not exposed.

Step 7 – Moisten Bedding

Worms need a dark, moist environment to thrive. Usually the food scraps provide enough water, but if your bin seems dry to the touch, moisten it with a few drops of water.

Step 8 – Harvesting the Compost

When the bedding in the bin resembles dark, crumbly soil it is time to harvest your bin. The bin can usually be harvested in one to four months. Move all of the bedding to one side of the bin and then add more bedding and food scraps to the empty part of the box. Within one month most of the worms would have moved to the other part of the bin, which means you can use the ready compost. Do not leave compost in bin for too long because the worm castings will become poisonous to the worms.

Important Reminders

- Remember to cover all food scraps with paper. This will help avoid any fly infestations and will facilitate decomposition more effectively.
- Keep worms moist. The paper in the bin should feel like a wrung out sponge, which will keep the worms happy. The worms will not dry up or drown and also bacteria will be able to cover more surface area, aiding in decomposition.
- Remember to feed your worms. If you cannot supply food everyday, that is okay. Just remember to feed them at least once or twice within a two week period.

Ways to Use your Compost (a.k.a Black Gold)

Compost is usually used

- as a soil amendment
- a mulch
- liquid fertilizer or tea
- an additive to potting mixes

At Grinnell we could use the compost we produce over the course of the year to help maintain the planted areas around buildings, such as the flowers in front of Burling Library or Bucksbaum Center for the Arts.

Facilities Management could apply a thin layer of compost for the lawns on campus to help boost soil quality and health of the lawn by providing nutrients and helping to retain water. The compost could also be used around the trees and shrubs on campus serving as mulch, which would stop soil erosion, maintain soil moisture, and help keep the plant's roots warmer in the icy cold winter. If applied to college landscape, locations should be chosen with the help of Facilities Management.

There is also always the Community Garden that can use compost for their plants and Eco-house with its own garden. Students in all the dorms with their own indoor plants can also benefit from the available compost, as their plants would be healthier and more vibrant with additional nutrients. There are endless ways to use this "black gold" and in the process we will be doing our part to help the environment.