

Classroom Vermicomposting Guide



Vermicomposting is a fun and educational way to recycle your classroom organic waste into valuable compost. **Vermicomposting means composting with worms.** It is done indoors, in a closed bin populated with many red wiggler worms. Inside the bin, worms busily eat your organic waste and expel it as worm castings, or droppings. The worm castings, together with other decomposed organic material, make up what is known as vermicompost – **a nutrient-rich material that's great for your plants and garden.**

What You Will Need

- A plastic bin and cover (about 24 x 16 x 12.5 inches)
- A small collection container and cover (like a large yoghurt container)
- A hand drill
- A bag of natural peat moss
- Shredded newspaper and egg cartons
- 1-2 dozen finely crushed eggshells
- 1lb of red wiggler worms

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FIVE STEPS TO VERMICOMPOSTING IN THE CLASSROOM

STEP 1 Educate Yourself and Your Students

Use this guide, the MMSB website, and MMSB's Waste Reduction Experts to help you learn all you need to know about classroom vermicomposting.

STEP 2 Set Up Your Classroom Bin

Gather the required materials and set up your vermicompost bin as outlined in the instructions.

TIP: To get your whole class involved from the start, try setting up your vermicompost bin as a class demonstration. MMSB's Waste Reduction Experts can help.

STEP 3 Start Vermicomposting

Establish and post a schedule giving each student in your class a turn to help feed the worms. Continue feeding your worms and maintaining your bin until it is ready to be harvested.

TIP: Designate a teacher or a student to take the bin home when leaving school for extended periods of time like Christmas and summer vacation.

STEP 4 Use Your Harvested Compost

You've successfully turned your classroom's organic waste into compost! Now it's time to complete the cycle by using the finished vermicompost to help your plants grow. Here are some ideas you can try at your school:

- Use vermicompost to top-dress classroom plants.
- Start a school garden and use vermicompost in seed rows or to top-dress plants.
- Experiment by using vermicompost on some potted plants and regular potting mix on the others. Try different mixes and see which plants thrive.
- Package vermicompost in used milk cartons and sell as a fundraiser.

STEP 5 Share Your Success

Your success with vermicomposting may be all the motivation other classes need to start vermicomposting in their own classrooms. Invite other students and teachers to see your vermicomposting system at work.

Building a Successful Vermicomposting Bin

1. SET UP YOUR BIN

The Bin

A plastic bin that works well for vermicomposting measures about 24 x 16 x 12.5 inches. Drill small holes along the top four sides of the cover to allow air flow.

The Bedding

There are many different materials that can be used to make the bedding. We recommend a mixture of peat moss, shredded newspapers and egg cartons, and crushed eggshells.

Make the Bedding:

1. Mix the shredded newspaper and egg cartons with the peat moss about one-to-one.
2. Add the crushed eggshells.
3. Add water to the bedding until the mixture is about as moist as a wrung-out sponge.
4. Make sure the bedding is well mixed.
5. Now you're ready to add your worms!

TIP: Before adding water to the bedding, let the water sit for a few hours to allow the chlorine to evaporate and the water to reach room temperature.

The Worms

You will need one pound of red wigglers – that's about 1,000 worms! Gently add your worms to the top of the bedding and watch as they make their way out of the light and into the dark, moist soil.

TIP: To prevent worms from migrating out of the bin, leave the cover off and a bright light on for the first 2-3 days.

You can buy red wiggler worms from a worm farm or get them from a friend who has their own vermicompost bin. Troutier's Special Worm Farm (709-334-3531) in Bay Bulls sells red wiggler worms and will ship throughout Newfoundland and Labrador.

Location

Choose a visible, accessible location within your classroom that is at room temperature.

TIP: Place a rug or piece of cardboard under your vermicompost bin to provide insulation on cold floors.



2. MAINTAIN YOUR BIN

Your vermicompost system requires little maintenance because the worms do the work for you. Simply give your worms what all living organisms need to survive – food, water, oxygen and space.

NOTE

Your vermicompost system will eventually become its own mini-ecosystem with micro- and macro-organisms, helping the worms turn your organic waste into nutrient-rich compost.

Food

Your worms will eat all the organic material you add to the bin, including their bedding. Add the same type of material you would add to an outdoor compost bin and avoid material like meat, fish and dairy products, as well as oils and fats. Add materials like:

- Fruit and vegetable peels, scraps and cores
- Coffee grounds, filters and tea bags
- Plant trimmings
- Paper products (limited)

A good rule of thumb is to add food waste when the last feeding is almost gone. This may vary from once a week to three times per week.

TIP: If you find worms crawling up the sides and cover of the bin, gently brush them off and replace them in their bedding. This will be less likely to occur as the vermicompost system matures.

TIP: Citrus peels and paper products can be added, but should be limited as they take longer to decompose and can overload the bin.

Add the Food Waste:

1. Designate a container (like a large yoghurt container) for collecting organic waste in the classroom.

TIP: Chop up food waste and leave it in the collection container for a few days to make it easier for the worms to break down.

2. Pull back the bedding, creating a hole big enough to contain the waste.

TIP: Use your hand or a gardening fork to pull back the bedding. Avoid using a trowel or shovel that may injure the worms.





TIP: If you picture the top of your bin as a grid, you will want to vary the feeding from square to square until you make your way around the bin.

3. Fill in the hole, covering the waste with at least two inches of bedding.
4. Mark the location of your feeding with a popsicle stick so you will know where to add the next feeding.
5. The next feeding should be placed next to the last feeding, so the worms can find it easily.

Water

Keep the bedding about as moist as a wrung-out sponge. If the bedding is dry, add water (a spray bottle works well). If the bedding is too wet, add some more paper and/or peat moss.

Oxygen

Fluff up the bedding from time to time to increase the flow of oxygen in your bin.

Space

Red wigglers reproduce quickly. Before long, you will begin to notice brownish-yellow or brownish-red, football-shaped cocoons, each about the size of the tip of a match. These are worm cocoons!

TIP: If you notice your vermicompost bin becoming overcrowded, remove some worms and use them to start another vermicompost bin.

3. HARVESTING YOUR VERMICOMPOST

Your vermicompost bin will be ready to harvest in as little as 3-6 months. You will know when your vermicompost is ready to be harvested when it is dark and crumbly and none of the original bedding or food scraps are visible.

TIP: Harvest your vermicompost bin on a regular basis. If left too long, finished compost can become toxic to your worms.

Harvest the Compost

1. Under bright light, empty the contents of your bin onto a large piece of plastic (a flattened garbage bag works well).
2. Divide the vermicompost into about eight piles and form each pile into a pyramid shape. Let the pyramids sit for a while as the worms naturally make their way away from the light to the bottom of the pyramids.

TIP: Take this opportunity to mix up a new batch of bedding and add it to your bin.

3. With your hands, start with the first pyramid, scraping the compost up along the sides and off the top. Place the harvested compost in a separate container. Continue scooping compost off the first pyramid (picking out stray worms as you go) until you begin to see a large number of worms. Reshape the pile into a pyramid and move on to the next.
4. Continue this process until each pyramid is complete. By that time, the worms in the first pyramid will have moved closer to the bottom and you can begin scraping off the compost again. Continue this process until all you are left with are eight small piles of mostly worms in a small amount of the original vermicompost.

INFORMATION

For more information on starting your own classroom vermicomposting bin, contact MMSB:

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