



## Hayes Farm Travelling Garden Tool Kit for Teachers

### Earthworm module

We also have modules that are adapted for K-2 and Grades 3-5 on:

1. Monarchs and Milkweed
2. Bugs (K-2)/ Insects (3-5)
3. The Three Sisters and Indigenous Gardening
4. Seeds!
5. Maple Syrup

Thanks so much for taking an interest in food, farm and nature education!

Teachers like you help to shape a child's lifelong interest in the natural world.

We look forward to seeing you and your students on the farm!

### Goals:

1. To help students understand how earthworms improve soil which helps plants in the garden to grow.
2. To reduce fear of worms/ insects.
3. To encourage respectful handling of all living creatures.
4. To encourage children to ask questions and explore outdoors.

### Materials:

1. You will find a set of earthworm models in your kit that you can use in tandem with this presentation.
2. The K-2 presentation is a simplified version of the presentation for grades 3-5. It leaves out more advanced anatomy and details.
3. You can find additional information in the Resources section.

## Activities:

### 1. Use the models provided

Students can put the models in order of lifecycle events. They can make observations and ask questions.



### 2. Earthworm observation jar activity

**This resource** from Frugal Fun for Boys and Girls will explain how students can set up a simple, temporary worm home that will let students see worm movement under the soil.

<https://frugalfun4boys.com/make-worm-observation-jar/>

### 3. Make a vermicompost system

Vermicompost is a fun classroom activity, but please be aware that worms can't be untended for a long time. If you make a bin, you will either need to dump it at the end of the school year or take it home to feed, water and change the bedding.

If this project isn't for you, no problem! Students will be able to see the vermicompost bin on the farm.

You could try the "earthworm observation jar" above section if you prefer to do something more simple/ temporary in the classroom.

## Collecting Materials

### 1. Worms

- Get some special worms called *red wigglers*. We don't use earthworms in vermicompost bins because they like to go deep into the ground, especially to survive the winter.
- Red wigglers come from warmer places like the Southern United States and they live close to the surface of the soil. Because of this, we will make sure not to leave our vermicompost outside for the winter.
- You can buy red wigglers at places like the Co-op Country Store or find them in manure piles on farms. They are often sold as bait.

\*If you buy worms that “jump,” do not mix these into bins or put them outside. These [jumping worms](#) are invasive. Tightly seal off the air holes and put the bin in the trash. Do not re-use the soil/ containers as it may be contaminated with eggs.

## **2. Container**

- Use any big tote bin or a special worm composting container.
- The bottom should have holes in it so that it does not get too wet inside.
- Worms need air and a cover to keep them inside! An old window screen works well on the top of the bin. If worms run out of food, they will naturally leave the bin. This is not a good surprise on the day after a long weekend!
- The holes can be drilled in with a drill bit.

The US Environmental Protection Agency provides some tips on building a bin.

<https://www.epa.gov/recycle/how-create-and-maintain-indoor-worm-composting-bin>

## **3. Bedding**

- Things like shredded paper, cardboard, or leaves for the worms to live in. You can use computer paper from the office shredded or have students rip up newspapers.
- In Canada newsprint is made from vegetable-based inks and should not be harmful.

## **4. Food Scraps**

- Worms eat fruit and veggie peels, coffee grounds, eggshells, and tea bags, pruned sections of plants, etc.
- Avoid giving them citrus fruits, onions, hot peppers or anything with an acid or spice that could harm their skin. If you wouldn't want it near your eyes, they don't want it near their bodies ; )
- Avoid putting dairy or meat in (which smells very bad when it rots).

## **Maintenance Tips**

- Keep the bedding moist, but not sopping wet. After an initial wetting a weekly spray is good.
- Keep a cover on the top to keep it dark and moist, a section of newspaper or a piece of soft plastic will work.
- You will probably find other creatures living in the bin eventually. These would have been eggs that hitched a ride in on the worm bodies, plant materials, in soil, etc. Generally, this is not a problem. Little jumping bugs called springtails are common. If you feel they are getting out of hand, this can require some research and investigation.
- Using a stacking two-bin system is great. When the top bin seems ready for a harvest of compost/ castings just start putting food in the lower bin. The worms will drop through the holes in the bottom of the first bin into the second bin in search of food. It is

possible to pick worms out of the compost in a single layer bin, but it is very time consuming and you will never be able to collect all of the eggs and babies.

### Feeding Tips

- Don't overfeed and put the food in one spot (like on the left side or in a specific corner). This helps you to clearly see how fast they are consuming food. As food rots it can sometimes get quite warm. Putting food in one section of the bin allows the worms to move away from it if the temperature increases.
- Over time as worms have babies, they will be able to consume food faster. You will just have to experiment until you find the right amount. The population will double roughly every two months.
- Too much food in the bin will just draw fruit flies, mold and rodents.

### Resources

#### Worm burrows

This text from the **Earthworm Society of Britain** explains about how different types of worms burrow. This resource will be too advanced for students, but it will be a primer for teachers who want more specific information.

<https://www.earthwormsoc.org.uk/earthworm-ecology>

#### Worm Bin Basics Videos

(3:17) Intended to help teachers understand vermicompost set-up.

Video of an adult demonstrating how to add more food to the system and springtails in the bin. There are other videos in this series as well.

Worm Bin 101 - ***Plant Obsessed*** You Tube Channel

<https://www.youtube.com/watch?v=njZixl2TwdU>