

HAYES FARM
TRAVELLING GARDEN TOOL KIT

WORMS!
GRADES 3 - 5



Today we will learn about

How to handle worms safely

What their bodies look like (anatomy)

Where they live

Why earthworms are important

How we can help worms

How to Handle Worms Safely



When do we normally see a lot of worms outside?

What happens when it gets hot and sunny?

Handling Worms

We will try to keep worms out of direct sunlight because this can hurt or even kill them.

We mainly see worms after a rain. Worms breathe through their skin. They want to be moist but not under water, where they can drown.

You may have heard that if an earthworm is cut in half it will become two worms.

THAT IS NOT TRUE!

This can happen with some worms, but they tend to be worms that live in water. The end of the cut may regrow skin, but you will not get two new worms.

Only the end with the heart will survive. Please do not cut worms!

Earthworm Anatomy

Anatomy means – the parts of the body.

Ex. Humans have two arms, two legs, one heart, they breath air (usually through two lungs), etc.



Photo: Amy Floyd

- Their body is a tube
- They are a pinkish-gray color
- They are smooth with wet/ slimy bodies
- They don't have eyes
- Their heads are a bit more pointed
- The "Crop" stores food and passes it on to the gizzard where it gets ground up finely before digestion.
- The end that is thicker is where the organs are, including where the worm reproduces and stores eggs.

Interesting information

- Earthworms eat any dead/ decayed matter (both plants and soil animals). They are excellent recyclers and cleaners.
- The outside of their body can tell how much light there is, so they know when to go underground.
- Earthworms do not have lungs, they breath with their skin which must be moist. They produce a mucous to help keep skin from drying out.
- Although earthworms don't have eyes, but they can feel vibrations. They use their mouths to sense the world around them.
- They can't control their own temperature, so they move up or down in the soil to adjust.
- They have 5 valves to move blood – these are like our heart.
- Earthworms usually live for 3-4 years, but sometimes even longer!

Movement through the soil

Locomotion is the way creatures move.

Earthworms are very muscular, they can move the whole length of their bodies.

The outside of the body is covered in tiny hair-like structures called *Setae* that help them move through the soil.

Let's have a look at an earthworm in action go online and check this video out:

<https://www.britannica.com/video/Locomotion-earthworm/-16474>

Locomotion, this video won't work on our website, but check this picture out.....



(hover over bottom and press play)

Video: Amy Floyd

see if you can spot another living creature along side the worm



Where do earthworms live?

Home Sweet Home!



Photo: Dengarden.com

Earthworms live in underground burrows in the soil.

Remember how we see them a lot when it is raining? If there is too much rain, they might drown in their burrows.

- Many kinds of animals make burrows, this is when a house is built by digging into the ground.

Can you think of other kinds of animals that burrow?

- Sometimes we find earthworms under pieces of wood because it stays moist there.
- These burrows help by letting air, water and plant roots to move more freely through the soil.
- When plant roots can move freely, plants can grow better.
- If you see a little pile of castings (like in the photo), or “worm poop” on the surface of the ground, you will know there is a burrow underneath.

Why are earthworms important?

Earthworms dig tunnels by eating up the soil in front of them and excreting “pooping” it out as worm *castings*. These castings improve the soil and are good for plants.

Their burrows make spaces for air, water and plant roots to move easily through the soil.

Without members of the “cleaning crew” like earthworms, soil insects, fungi and bacteria everything that ever lived on the planet would never go away! It would be a disaster!

Activity – Vermiculture/ Vermicomposting

Vermi means things related to worms.
You can recycle food scraps and other dead plants into great plant food called *compost*.

Vermi + Compost = Vermicompost

The bin on the right is at a research project in Keswick, N.B there are over 1000L of vermicompost in this bin!



Photo: Amy Floyd

Inside the vermiculture bin – 2 weeks in 1 minute.
Check out this video online: https://youtu.be/6em_8iFfKIk



Collecting your 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 or find them in manure piles on farms.

2. Container: Use a big 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! You will need to close the top to keep worms inside, but make sure they have air holes.

3. Bedding: Things like shredded paper, cardboard, or leaves for the worms to live in.

4. Food Scraps: Worms eat fruit and veggie peels, coffee grounds, eggshells, and tea bags, but avoid giving them citrus fruits or meat (which smells very bad when it rots).

Setting the system up

- 1. Prepare the Bin:** Make holes in the bin lid for air and holes in the bottom for draining.
- 2. Make a Bed:** Put in some damp bedding to make the worms feel at home.
- 3. Add the Worms:** Gently place the worms on top of the bedding. Let them burrow in.

Feeding your worms

1.Start Slow: Give them a little bit of food at first to see how much they eat in a few days.

2.Cover Food: Bury the food scraps under the bedding. Worms like it cozy while they eat.

3.Keep It Moist: Spray water occasionally to keep things damp, but not too wet.



What happens when you get certain foods in or near your eyes?

Ex. Onions, hot peppers, lemon, ginger, grapefruit?

It really stings!

So, a good rule is that if you wouldn't want a food in close to your eyes, then you should not feed them to your worms.

Interesting information: Earthworms can eat up to 1/3 of their own body weight each day!

Maintenance of vermicompost

- 1. Avoid Overfeeding:** Don't give them too much food. They eat slowly, so be patient. Too much food will make mold, get smelly and attract other insects (fruit flies) and animals to the bin.
- 2. Check and Stir:** Peek inside the bin once in a while. If it starts smelling bad, add more bedding. Make sure it isn't too wet.
- 3. Harvesting Compost:** When the bedding turns into dark, rich soil, it's ready to use in your garden!
If you use several bins, the worms will drop into the new bin once they eat all of the food in the old bin. This makes it easier to collect the compost (you don't have to pick worms out).

Vocabulary

Anatomy – Parts of a body or any living organism.

Burrow – A hole or tunnel in the ground where an animal lives.

Castings – The “poop” from worms that is a very helpful for soil life and plant nutrition.

Crop – A part of worm anatomy that stores the soil taken in by the mouth.

Gizzard – A part of the worm anatomy the grinds up the soil before sending it to the digestive system.

Locomotion – The way that living creatures and objects move from one place to another.

Setae – Bristles or hair-like parts on the outside of the worms body that help it to move through the soil.

Vermicompost – Compost bins that use worms (usually red wigglers) to break down food and plant materials.

We can't wait to see you on the farm!

