



MAKE YOUR OWN WORMERY

Become a worm expert by observing worms over a week in your own worm home!

Overview



Making a wormery is a safe and simple way to observe and find out more about worms and what they are up to underneath the ground. All you need is an empty bottle, some soil and vegetable scraps and you are ready to go.

[Printable version](#)

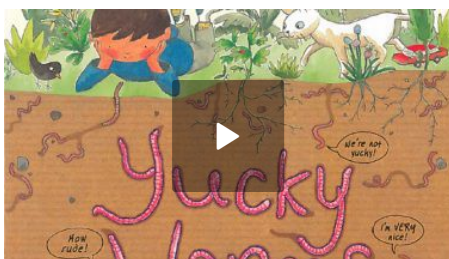
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What you'll need

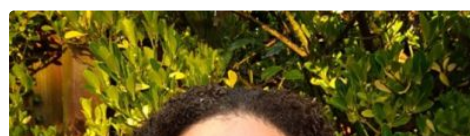
- An empty, rinsed 2 litre bottle
- Scissors
- Black or dark coloured paper or card (you could colour some in)
- Tape
- A trowel or empty container such as a yoghurt pot
- Water – in a water spray bottle if you have one or in a watering can, jug or bottle if not
- Soil from your garden
- Something to make layers, such as child-safe play sand, compost or worm

Before you start



Younger children might like to listen to this “Yucky Worms” story by Vivian French. It tells us all about worms and why they are so important in our garden habitats.

Older children might be interested in watching this [NUSTEM Encounter](#) with environmental scientist Miranda



Prendergast-Miller. She tells us about the reasons why she became an environmental scientist and why worms are her favourite soil organism.



What to do

Step 1



Remove the top from your bottle to make a lid. Do this by squashing the bottle flat at about $\frac{1}{4}$ of the way from the top. Cut across your bottle here.

Step 2



Cut 2 small (4cm) slits upwards at opposite sides of your bottle. This will make sure your lid fits on your wormery.

Step 3



Scoop up some of your soil with your trowel or a plastic container and put it in the base of your bottle. Add a very small amount of water so that the soil is damp. A water spray is perfect for this.

Worms breathe through their skin so everything in your wormery must be damp. If the soil is too dry, the worms

- food (see below)
- Worm food such as grated carrot, vegetable peelings or dead leaves
- Worms!

Duration

20 minutes or so to make the wormery, a week to observe the worms.

Suitable for...

Age 3 and up.

Safety notes

You know your children better than anyone, and you should judge whether they're ready for this activity. You might want to think in particular about:

- Supervision: the bottle is difficult to cut and may result in sharp edges.
- Spade, forks and other garden tools may have sharp edges and points.
- Always wash your hands after touching soil and worms.
- Check your sand to make sure it is safe for children to touch- play sand is great but builders sand and sharp sand is unwashed and may contain

can't breathe!

unwanted additives.

Worm safety notes

Worms are living creatures and need to be treated with care and respect!

- Worms have delicate skin- please handle them with care!
- Worms breathe through their skin and this needs to be moist- don't let your worms dry out!
- Worms can drown in too much water- take care to dampen not soak the layers in your wormery!
- Make sure you wash your hands thoroughly with hot water and soap after making your wormery.
- Don't feed your worms onions or citrus fruit peel or waste. Worms don't like these.
- **Always release your worms back to the place they came from after a week- they are not your lifelong pets!**

Step 4



Scoop up the same amount of sand, compost or worm food and add this to your bottle. Add a small amount of water so that the layer is damp.

Step 5



Continue adding alternating scoops of soil, sand, compost or worm food until your bottle is about $\frac{3}{4}$ full. Remember to add water to each layer to keep the wormery moist for your worms.

Step 6



Now find your worms! You could look in a compost heap, under stones or logs or you could dig in the earth.

Make sure you handle the worms with great care. Their skin is very delicate, so put them in your wormery as soon as possible so they don't dry out.

Step 7



Add some worm food to the top of your wormery, on top of your worms. Slide the top part of your bottle over your base.

Did you know?

The reason you see worms on the pavement when it rains is because the rain



rain to cause the rain floods their burrows. If they didn't come to the surface then they would drown.

Careers link- environmental scientist

Attributes: passionate, creative, committed

Environmental scientists study the effects of human activities on the environment. They are **passionate** about preventing and solving environmental problems such as pollution. They collect and test soil or air samples to find the type, concentration and source of the pollution caused by industry or agriculture. Environmental scientists are **committed** to finding out whether contaminant sources will affect or harm habitats, individuals and communities. They are **creative** in the ways they find to manage, minimise or eliminate any negative impacts of the pollution.

Visit our [environmental scientist page](#) to try some more environmental science activities and find out more.

Step 8



Wrap your black card or paper around your wormery and secure it with tape. Worms don't like light. Put your wormery in a warm place. You can remove the card to observe the worms.

- Make sure you wash your hands after building your wormery and handling worms.
- Regularly check that the worms have food and that the soil is moist.
- Return your worms to the place you got them from after a week.

Things to do

Observe your worms

Check your worms regularly and record where they are in the bottle.

You could investigate:

- Where do worms prefer to be in the wormery? Do they like sand, soil or worm food layers best?
- Do the worms mix up the layers or soil, sand, compost and worm food?
- Do the worms drag the food down from the top into the soil?

You could record your observations by drawing or taking photographs of the worms in your wormery each time you check it.

Things to do



Make a worm fact file

Research worms on the internet or in books. Choose the facts that you find the most interesting and informative. You could include:

- scientific name
- physical description (size, colour, shape)
- distribution (where they are found in the world)
- habitat (environment they live in)
- diet (what and how they eat)
- social behaviour (how they live)
- lifespan (how long they live)
- number of young (how many babies they have)
- drawings or photographs of worms

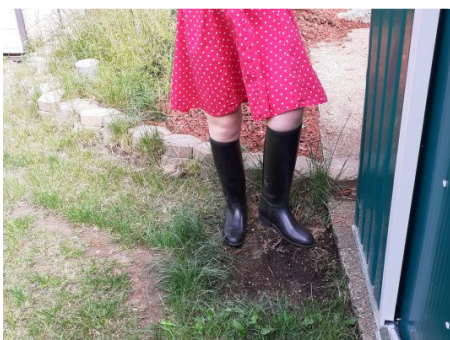
Other things to try

Investigate the best ways to collect worms

Try each of these methods and count how many worms you find with each. Which do you predict will produce the most worms?



Worm hunt: look under rocks and stones, under dead wood or leaves or try digging in the soil.



Stamping: stamp your feet in one place on the grass or soil for 5 to 10 minutes. Worms are supposed to be attracted to the surface by vibrations.



Twanging: put a garden fork into the grass and rock it backwards and forwards until the worms appear. How long did it



What does an environmental scientist do with worms?

Dr Miranda Prendergast-Miller says:

“I am an environmental scientist and I like to find out more about the world around us and how we are changing it. In particular, I study organisms that live in the soil below your feet. Earthworms are my favourite soil organism because there are different kinds and they are very important in making soil. The work I do helps farmers to grow our food in ways that encourages more earthworms and microbes to live in the soil and provide important nutrients to plants and animals. This means that farmers can look after the soil and use less fertiliser and chemicals. I also do experiments in the laboratory to check if plastic rubbish is changing the soil and organisms like earthworms that live



take them to come to the surface?

earthworms that live underground.”

Do you want to know even more about worms?

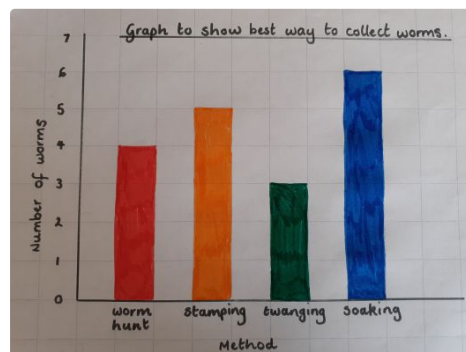
Watch this [questions and answers session](#) with Dr Miranda Prendergast-Miller.



Soaking: soak an area of ground with water and cover it with a black plastic bag. Water fills the worm's burrows and they come to the surface.



You could make a graph to show which was the most successful method.



Which worms do I have?

Here is a useful worm identification guide to help you find out which worms you have:

<https://www.imperial.ac.uk/media/imperial-college/research-centres-and-groups/opal/SOIL-4pp-chart.pdf>



