National Education Nature Park

How to make a mini wormery

Learn where a worm likes to live and understand their importance for healthy soil and plants. This activity encourages learners to interact with and observe worms up close, taking notice of how they change natural materials into soil, as well as teaching children to look after living things and take care when handling them or exploring their environments.

Teaching time

up to 30 minutes, with short observations over several sessions

Learning outcomes

- identify the key components needed for a wormery
- begin to understand the role of worms in building healthy soil
- be compassionate to the needs of nature, demonstrating empathy for living things

Step by step

This activity works well with a small group of learners, building their mini wormery together.

Fill the bottle with alternating layers of sand, soil and compost. Spray each layer with water so that it is damp.

Cut the top quarter off your plastic bottle to make a lid. Make a slit in the side of the lid so that the top can close over the bottom part.

Collect some worms from outdoors – encourage learners to look in a compost heap, under stones in damp places, or dig a hole to find them. If learners have learned about habitats and microhabitats, encourage them to apply their prior learning by asking, “Where might we find worms in our grounds?”

Add a few worms to the top of the bottle and watch them burrow down. Then add the ‘food’ (vegetable peelings, dead leaves or shredded newspaper) to the top. Remind learners to wash their hands well after handling worms and compost.

Wrap the black cardboard around the bottle to make it dark. Worms do not like light and it will encourage them to burrow around the outside of the bottle so they can be observed.

Place the wormery in a warm place. Remove the cardboard for observation periods and record findings. The layers will disappear as the sand and soil mix together and channels appear where the worms have burrowed.

Check that the contents are damp and that there is food available for the worms – do not feed the worms citrus fruits or onions.

After one week, release the worms back outdoors in a suitable spot, to enable them to continue breaking down natural materials and improving your soil.

Green Skills

Suitable for

Early Years
Key Stage 1

Location

Indoors
Outdoors

Season

Spring
Autumn
Winter

What you’ll need

2 litre clear, plastic bottles
safety scissors
compost, soil or a mixture of both
sharp sand
a few worms per bottle
water to dampen layers
worm food – grated carrot, vegetable peelings, dead leaves or shredded newspaper

Key vocabulary

Wormery
Worms
Composting
Soil

Support and extension opportunities

Cut the top off the bottles if learners are too young to do this. You can use a sharp pencil to pierce a hole near top of bottle to make cutting easier.

The downloadable Widgit resources can support learners to create their mini wormery – why not cut up the instructions and ask learners to arrange them in the correct order?

Adapted from RHS Campaign for School Gardening

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Inspire fascination and empathy for worms by sharing some worm facts with learners – what else do they know about worms?

Worm facts

- there are 26 different species (types) of worms in the UK
- earthworms breathe through their skin, so they have to come to the surface when it rains or risk drowning
- worms can move an amazing amount of soil for their small size – a worm can eat its own weight in soil in one day
- earth worms burrow through the soil creating channels that add oxygen to the soil and allow carbon dioxide to escape. The channels also allow rain to drain away compost which can be added to potting mixes
- worm casts which are seen on the surface of lawns are made by 5 types of worms, called casting worms. Mostly found from autumn to spring, these casts are by-products of eating (i.e. worm poo!)
- if you accidentally cut a worm in two, only the head end will regenerate and survive assuming the damage isn't too extreme
- earthworms range in length from a tiny one millimetre to a massive three metres
- worms do not have eyes and prefer the dark. They can sense light and dark and prefer dark conditions because they are easily damaged by UV rays and will dry out quicky
- famously hermaphroditic, earthworms are both male and female in one body, though it still takes two worms to reproduce

Reflection

Discuss with learners what they have learned about worms and what they do. Why do they think worms are helpful for nature? How do they help plants grow?

(They help keep our soil healthy by breaking down decaying plant material, and creating tunnels that improve soil structure)

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