Making a wormery and observing worms

Why do this?

Children are often fascinated by worms. Making our wormery allows them to appreciate the role that worms play in supporting plant growth, food chains and habitats as well as why it is important to respect all living things.

Curriculum links: *living things and their habitats, animals, survival, food chains, adaptation*

Suitability

Years 1-6

Practical details

This activity has been prepared using CLEAPSS guidance. If in doubt, or for further information, contact CLEAPSS.

Safety

- Children must wash their hands with soap and water after this activity.
- Children must not open bags of compost/potting mix (search **gardening**).
- For further guidance on taking children outside search **Working safely outdoors**.

Equipment per wormery/pair of children

- 1 empty, 2 litre, clear plastic bottle
- 1 A4 sheet of thick black paper
- Scissors
- Sticky tape
- 3-4 worms
- Soil or compost
- Sand
- Worm food (dead leaves, carrot peelings, potato peelings)

Equipment per class

- Water spray bottles
- Containers (for soil and sand)
- Scoops/plastic cups/large spoons (to dispense soil/sand)

Equipment notes

- Before the lesson, prepare separate containers of compost/soil and sand for children to share.
- Any type of soil/compost will work.
- 1 bag of children's play sand and 1 bag of soil/compost will make approximately 20 wormeries.

Collecting worms

Earthworms can be found all year round by dig a hole in a compost heap or in damp soil or by looking under stones in damp places. Place them in a clean food container with air holes in the lid and a layer of damp earth inside. Children can collect worms from school grounds or bring them in from home. If children are bringing them in they should collect them no sooner than the evening before making the wormery and keep them overnight in a cool place.

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Procedure

1. Remove and discard the bottle top. Cut the top ¼ off the plastic bottle. Squashing the bottle allows the first cut to be made. The top section will be used as the lid.
2. Cut a vertical slit approximately 4cm long into the side of the lid so that it can slide down over the bottom section.
3. Fill the bottom section of the bottle with alternate layers of sand and soil. Thick layers of soil and thin layers of sand work well. Make each layer as distinct as possible and spray each layer with water so that it is damp. Make the top layer soil. Leave a 5 cm gap at the top of the wormery.
4. Place 3-4 worms on the top layer and watch them burrow down.
5. Place food for the worms on the top layer.
6. Put the lid back on the wormery.
7. Wrap black paper around the wormery so that it is dark inside.
8. Place the wormery in a cool, dark place where it unlikely to be disturbed; inside a cupboard works well.
9. Remove the black paper periodically to observe the worms and record your findings. Check that the contents are damp and that the worms have enough food each time you observe them.
10. Release the worms back into the environment after 1 week.

Be aware when doing this practical:

Filling the bottles with the soil and sand can be messy. Doing this outdoors may be an advantage.

Do not feed the worms citrus fruits.

It is important to ensure the contents of the wormery are always moist. The worms will not survive if the conditions are too wet, or too dry.

Handle the worms gently and for minimal time, their skin is very delicate.

Expected observations and results

Children will see channels appearing where the worms burrow and that the layers of sand and soil have become mixed up. The worm food added to the top will move downwards.

Possible further activities

Research interesting facts about earthworms.

Background notes

Charles Darwin studied worms for 39 years and concluded that life on earth would not be possible without them. Worms play a crucial role in the environment because they turn rotting plant material into fertile soil that plants need to grow.

A wormery provides children with a microhabitat that allows them to see and explain how worms do this. As they move through the soil seeking out rotting plant material (such as the vegetable peelings and leaves placed on top) it becomes aerated. This helps air, water and nutrients (vital for growth) to reach plant roots. The children will be able to see this as the layers of sand and soil becoming mixed up as the worms burrow, eat and then poop out 'castings', a very important plant fertiliser.

Worms can eat up to 75% of their own body weight every day and they aerate the soil as they move about. Worms breathe through their skin; air dissolves in the mucus of their skin, which must be damp for this to happen.