WHAT DOES AN EARTHWORM DO?

Key information:
An earthworm can be replaced with any other animal that the children are able to observe at first hand, for example, a bee, woodlouse, beetle or caterpillar. You should adapt the activities accordingly, with a focus on how the particular animal looks and behaves – see Science Photos 9–12 to help with this.

ACTIVITY SUMMARY:

Children learn about how earthworms move, what they eat and about their habitat through close up, first hand observation, asking their own questions and collecting evidence to answer them. The focus should be firmly on observable features and behaviour. Children explore the natural habitat of earthworms in the school grounds and also build or use a wormery where they can observe the earthworms above and below ground. It can take up to two weeks to see any changes in the wormery, and up to a year to see the soil created by the worms forming at the bottom of the wormery.

Learning intention:

Children can talk to an adult about what earthworms are like and what they do.

EYFS cross curricular links:

- Physical development: Movement – Can you move like an earthworm?
- Expressive arts and design: Observational drawing – Can you use the magnifying glass to look carefully at an earthworm and draw what you see?

RESOURCES (FOR FOCUS ACTIVITY):

- Wormery: this can be made from a clip top bin or purchased specifically from a specialist provider, such as www.greenfingers.com or www.wiggos.com.
- Clear container in which to layer sand, soil and leaf litter.
- Kitchen waste: a list of dos and don'ts for wormeries can be found on many websites, such as www.wormcity.co.uk.
- Earthworms: best sourced from your local area but can be purchased from several places, such as www.wormsdirectuk.co.uk.

RESOURCES (FOR INDEPENDENT ACTIVITIES):

Magnifying glasses (plastic), containers to view earthworms, Science Photos 1–8, Resource sheet (Word bank), non-fiction books.

EXPLORE:

Display the Story slideshow and play the story to the children. Ask them to describe the earthworm Billy is holding. Do they notice the rings?

Ask: *Are there any clues to show where it might live?*

Ask them to talk to their friends about a time when they have seen an earthworm. Where did they find it? What did it look like? How did it move? Did it have eyes? Did it have a tail?

Ask: *Does anyone know what earthworms eat? Is it good to have earthworms in a vegetable patch? What or who would help us to find out?*

Take the children on an 'earthworm hunt' to look at earthworms in their natural habitat. Ask them where they think the best place will be to find earthworms. Were they right?

ENQUIRE (FOR FOCUS ACTIVITY):

As a class, spend time looking closely at an earthworm. Encourage children to touch it, hold it and observe it. Ask the children what they notice. Tell them that the 'rings' are the separate 'segments' of an earthworm and that the 'lump' in the middle is called a 'saddle'. Ask them if they can tell which end is which.

Set up a wormery that can be added to over time, somewhere in the outdoor area. This may be a part of the wider school garden. Visit the wormery regularly throughout the rest of the year to observe what is happening. Take photos that the children can use to retell the story of their wormery. Encourage them to notice how the earthworms are mixing the garden soil and kitchen waste together.

Health and safety:

Be Safe!, page 14 (composting), pages 20–21 (safe animal handling)

Key information:

Charles Darwin described earthworms as 'nature's ploughs' because of the way that their activity causes soil layers and organic matter to mix. The mixing improves the fertility of the soil by allowing the organic matter to be dispersed through the soil and the nutrients held in it to become available to bacteria, fungi and plants.

While building the wormery, and in the first few days afterwards, focus on observing what earthworms do.

Ask: *Where in the soil do earthworms live? What else lives there? How is the earthworm like other animals that live in the garden? How is it different? Can earthworms see in the dark? What animals might eat an earthworm?* (You can introduce the term predator if appropriate.)

Encourage children to think of their own questions about earthworms.

In the short term, layering sand, compost and leaf litter in a see-through tank and introducing some worms will enable the children to see the 'mixing' in action.

Encourage the children to return to the wormery regularly over the next months and to talk about what they observe happening. Can they answer their own questions now?

ENQUIRE (FOR INDEPENDENT ACTIVITIES):

Sand tray: What animals live in the soil? Use small toys of animals that might live in the soil and add compost and leaves. Encourage children to move the animals through the soil and to talk about what else might live there.

Interactive display of the wormery: What is happening in the wormery? Place the clear-sided, layered wormery in an area that the children can access all the time. Make available a camera or tablet, drawing equipment, non-fiction books and magnifying glasses.

Malleable materials: Can you make an earthworm? Can you make the longest / shortest / fattest / thinnest earthworm? Can you make it wriggle?

Writing area: Can you write about the wormery? Cut out the word bank cards from the Resource sheet. Science Photos 1–8 can also be displayed. Encourage children to use them to write about how to make a wormery. Ask them to make labels for the wormery.

REFLECT AND REVIEW:

Spend time looking at the wormery over subsequent weeks with small groups of children. Talk about how the earthworms are moving. Show them a photo of what the wormery looked like at the start of the activity.

Ask: *What is different? What is the same? What have the earthworms been doing?*

EVIDENCE OF LEARNING:

Listen to children's descriptions of how an earthworm moves and what it does. In the short term, children should be able to talk about how an earthworm wriggles through the soil, that it eats leaf litter, that an earthworm feels soft, slimy or silky, and that some birds and moles like to eat them. In the longer term, children may also be able to talk about how worms are helpful to gardeners as they mix up the soil.

SCIENCE AT HOME:

Can they find an earthworm on their way home from school? Can they find an earthworm in their garden or in a local park? If they have a compost heap can they see any earthworms in it? Can they tell their parents or carers what earthworms do? Can they hold an earthworm charming championship with their family? Information on how to run one can be found in the 'free packs' section, under the 'muddy good fun' link at www.naturedetectives.org.uk.