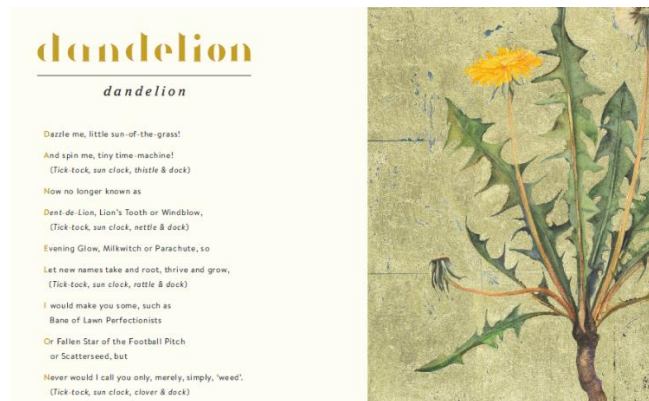


## PRIMARY SCHOOL SOILS ACTIVITIES

### Indoor activities

- Soil life 'spells' or poems



*"We've got more than 50% of species in decline. And names, good names, well used can help us see and they help us care. We find it hard to love what we cannot give a name to. And what we do not love we will not save."*

Robert MacFarlane, [the Lost Words](#)

Using words creatively to encourage an understanding and celebration of life in the soil. Children pick a soil creature or aspect, then create an acrostic or other type of poem to describe their chosen subject. They should be inspired to 'bring the creature to life' with their words.

Find more examples and inspiration [here](#).

- Life underground: a mural



Each child creates their own soil creature to add to a largescale wall mural or collage of life underground, taking inspiration from the creatures found in the SSA soils presentation or their own research.

Some could create plants or mushrooms for a top layer, with mycorrhizae and roots penetrating the earth and reaching down into the soil.

Children could be supported to create their creatures 'to scale' e.g. at 1000x magnitude; they should be encouraged to represent the interactions between the plants, roots, mycorrhizae, creatures and other things in the soil.

- **The Art of Soil**



*By Thomas Quine - Cave paintings, CC BY-SA 2.0*



*By Mariano - Own work, CC BY-SA 3.0*

Provide children with samples of different soil types (clay, silt, sand etc.) which will create different colours and textures when mixed with water and invite them to touch the soil, squidge it into balls, mix with water, and think about what that particular soil type might be good for. Could you build with it? Paint with it? Grow things in it?

Invite the children to get messy by experimenting with 'soil paints' to create artworks – of soil subjects, landscapes, gardens or pictures from their own imagination. Use clay to make sculptures of soil creatures.

Link in with cave paintings. Invite children to make their own – perhaps representing soil life they have seen in their gardens or the school outside classroom - in a traditional cave painting style, using local soil.

Explore geology and landscapes in relation to soil. Help children to research and understand how and why different soil types form different landscapes.

- **Soil drama**

Children are given different roles and invited to act out healthy and unhealthy soil environments:

- 'Soil molecules' hold hands to simulate a healthy soil with space for air, water and creatures
- 'Air' and 'water' characters move happily through and between the soil molecules. 'Soil creature' characters move around the molecules and simulate creating burrows, channels etc for air and water
- Some of the 'soil creatures' might even chase and pretend to eat each other!
- In an unhealthy soil environment, 'soil molecules' are squashed closely together and the other characters can't move through the soil
- Children could spend time creating costumes or turning the microdrama into a new game or sport.

They could also learn and perform [this song](#) about soils and flooding from Durham University's Robust project, after watching the animation which shows the impact of concrete on soil, flooding and people.

## **Outdoor activities**

- **Soil detectives**

Start a soily notebook. Encourage children to look carefully at the ground, under plants and rocks and in their holes, then sketch what they can see. Children could spend time looking up the creatures, plants, rocks and other things that are found and making notes of any interesting facts they find out about them.

**Exploring worms:** Introduce children to the three main different types of worms. See if they can spot and identify them out in the field. Draw pictures of them and explore the differences between them, in the way they live and the different benefits they bring to the soil.

The information below comes from the Earthworm Society of Britain – further information available [here](#).

1. **Epigeic worms:** surface dwellers



Epigeic earthworms live on the surface of the soil in leaf litter. These species tend not to make burrows but live in and feed on the leaf litter. Epigeic earthworms are also often bright red or reddy-brown, but they are not stripy.

2. **Endogeic worms:** soil eaters

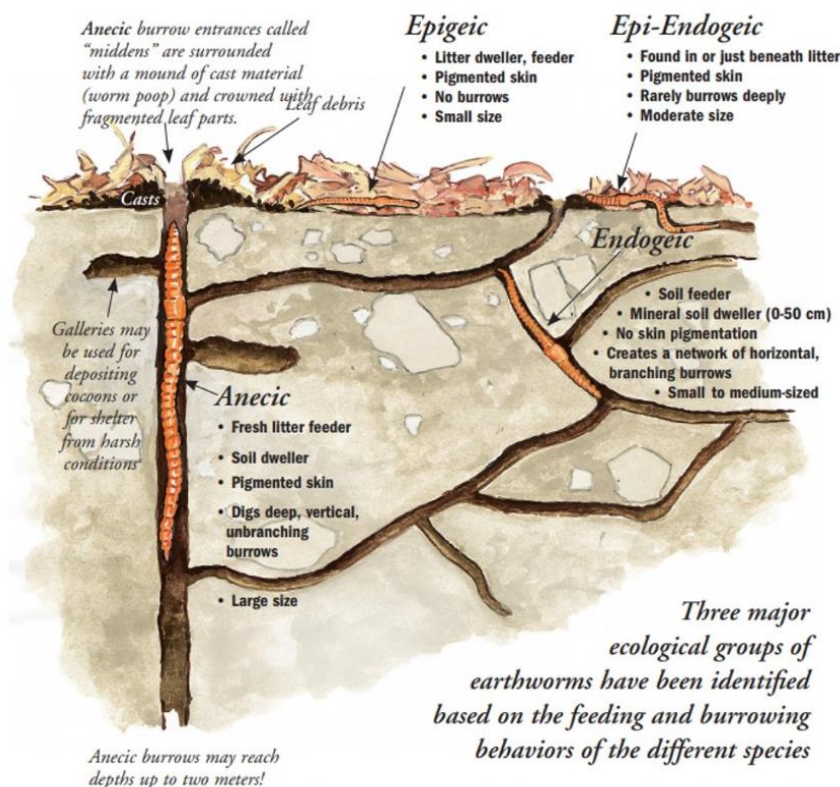


Endogeic earthworms live in and feed on the soil. They make horizontal burrows through the soil to move around and to feed and they will reuse these burrows to a certain extent. Endogeic earthworms are often pale colours, grey, pale pink, green or blue. Some can burrow very deeply in the soil.

3. **Anecic worms:** vertical burrowers



Anecic earthworms make permanent vertical burrows in soil. They feed on leaves on the soil surface that they drag into their burrows. They also cast on the surface, and these casts can quite often be seen in grasslands. They also make middens (piles of casts) around the entrance to their burrows. Anecic species are the largest species of earthworms in the UK. They are darkly coloured at the head end (red or brown) and have paler tails.





- **Dig a hole!**



Learning the proper way to dig a hole and what to look for underground. Explain to children that when soil scientists and farmers want to properly investigate their soil and assess its health, they will need to dig at least 3 holes in different parts of their field to obtain a proper representation of the health of the land – and more holes will be needed if there are lots of different soil types or the field is very big.

1. Mark out the edges of a 50 cm square section with a spade
2. Dig out one half of the square, going down to about 20cm deep
3. The other half is the soil that will be examined so be careful not to trample on it or smear it with the spade
4. Lever out a spadeful of soil from the undisturbed half of the square. This is the topsoil
5. First look for spaces in the soil – does it look healthy, with holes for creatures, roots, air and water to move through; or is it squashed and compacted? If so, why might it be like this?
6. Carefully tease the soil apart along its lines of natural weakness. What is the structure of the soil like – is it all congealed in to one big mass or does it break easily into smaller parts? Is the soil wet or dry? Does it feel sandy or more like clay? Can you squash it in to balls and does it stick together? Do you think the structure is due to compaction (e.g. in a school field with people running around on it), or soil type?
7. Look at the colour of the soil in your hand and in your hole. Can you see layers, or do the colours change? Why do you think this is? Does how wet the soil is make any difference to its colour?
8. You can continue to dig out the soil to a 40cm depth, then lever out the undisturbed lower half – and examine the subsoil in the same way. It is interesting to see how the soil changes as you move down the hole in terms of colour, texture, wetness, compaction and whether any creatures are present

- **Compost and vermiculture**



Help children to collect food waste, cardboard, leaves and other organic material to build a compost heap. Gardener's World provide a [useful guide](#) on how to build a DIY compost bin, and there are some great tips and a helpful video from our friends at the Eden Project [here](#).

Children can have fun building a wormery in the classroom or outside, somewhere sheltered or in a shed (their temperature shouldn't drop to below 10°C). There's lots more about worms as well as simple instructions on how to make compost in this Avon Wildlife Trust *Go Wild for Worms* booklet.

There's a useful guide to making a wormery provided by the RHS [here](#) – in brief:

1. Acquire the right type of worms (these are different to common earthworms) – found in garden centres or other specialist shops. More information on this [here](#)
2. A layer of old compost or other organic bedding material is needed to start the worms off
3. The worms feed on kitchen waste – ask children to bring in scraps to feed to the worms every day
4. Worms enjoy a varied diet, including raw and cooked vegetables, tea bags, eggshells, coffee grounds, bread, newspaper and garden waste. They do not like meat or dairy products, tough leaves and woodier material and raw citrus peel
5. Keep the wormery moist
6. A clear tank allows the children to see the worms at work and how they change the waste into soil
7. It takes c.8-12 months for the wormery to fill up with compost, at which point it should be emptied. Keep the worms and use them to start a new wormery!

#### One type of compost worm:



As their name would suggest, these are most likely to be found in compost, or areas very rich in rotting vegetation. They prefer warm and moist environments with a ready supply of fresh compost material. They can very rapidly consume this material and also reproduce very quickly. Compost earthworms tend to be bright red in colour and stripy- some people call the stripy species 'tiger worms'. Compost worms are often used to help dispose of waste as they can also remove contaminants from soil. Compost earthworm species include *Eisenia fetida* and *Dendrobaena veneta*.

[Earthworm Society of Britain](#)