Microplastics in soil

We can often easily see pollution caused by plastics, but have you heard of microplastic? This may come from the breakdown of larger pieces of plastic or may have been created especially for products such as toothpaste and cosmetics. Microplastics are much harder to remove from the environment as they are more difficult to see. They can affect the animals that live in the environment where they are found.

ACTIVITY

What conditions do earthworms prefer? Is there any plastic in their habitat?

ACTIVITY OVERVIEW

Before going outside, the activity leader might like to share the film about worms (use QR code). Children could work in pairs. Different pairs could look for worms in different areas, e.g. sunny, shady, wet or dry areas.

1. Choose a location where children can safely dig in the soil.
2. Encourage children to loosen the soil and look for earthworms.
3. Put some soil in a tray and using a magnifier or microscope, look carefully to see if there are any microplastics present.
4. Use the magnifiers to look at any earthworms that are found.

Remind children to wash their hands after handling soil or earthworms, even if gloves have been worn.

KEY FACTS/SCIENCE

Plastic is not a natural substance but it is made from natural materials such as cellulose (from plants), coal, natural gas and oil. These materials are transformed by chemical reactions to make plastics. It takes time and energy to make plastics.

Plastic is now found in many places in the natural world, including in our oceans and in soil. 5 grams of soil (about a teaspoon) can contain 4 to 20 tiny plastic pieces. Plastic pieces that are less than 5mm in diameter are called **microplastics**.

Some plastics are **biodegradable** - this means they can be broken down in nature by microbes (organisms such as bacteria). Many plastics, such as polythene, are not biodegradable and remain in the environment for a very long time, often for many hundreds or even thousands of years.

https://video.link/w/VzAyd

RESOURCES

access to bare soil

plastic tray/container

spoons/trowels

magnifiers (or microscopes)

bottle of water (optional)

soap and warm water for hand-washing

QUESTIONS FOR LEARNING

- Were there any microplastics in the soil?
- How do you think plastic might get into the soil in your location?
- Which type of soil do earthworms prefer?
- How might the earthworms be affected by plastics in their environment?

Use the QR code to watch a short film to find out more about earthworms and how to find them.