Activity 3

Super soils

Aim: How can soil help prevent climate change?

Curriculum links:

KS2 Science – recognise that soils are made from rocks and organic matter - recognise that environments can change and that this can sometimes pose dangers to living things. recognise that living things have changed over time identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

KS2 Citizenship - to talk about their opinions, and explain their views, on issues that affect themselves and society... to research, discuss and debate topical issues, problems, and events.

Completing suggested additional activities would also provide links to several other curriculum areas including **Geography, English and Maths.**

Key Questions

- How are soils, food waste and climate linked?
- Why are soils super?
- Is soil the key to sustainable food production?

Instructions:

- **Begin by**: Using the PowerPoint to display **slide 2.** This is the Key Language (vocabulary). You may wish to use this as an opportunity to check pupils' existing knowledge.
- **Then**: **Ask: What is soil and why is it important?** Record the students' responses.
- **Now:** Use **slides 4-6** and the linked video resources to explore what soil is and what it contains. Introduce two key soil types: clay and sandy.
- **Activity/Demonstration 1: Soil Separation (slide 7)** Take a sample of soil and put it into a clean, clear jar, clear measuring cylinder or beaker. Add water to cover the soil. Mix and then leave the sample to settle. The heaviest, biggest particles sink first (sand). The smallest, lightest sink last (clay). Floating on top might be organic matter. Settling can take a while so this might best be done as a demonstration using a sample left to settle the day before. Students could measure the different layers and make conclusions from these observations.

- **Activity 2: Soil types (slide 8)** With small handfuls of soil (dampened) students attempt to form a series of shapes. Students conclude which type of soil they are working with based on the shapes it has been possible to make. Activity sheet
- **Now:** Using **slides 9-14** Explore the role soil has in tackling climate change and how farmers can ensure their soil is taken care of.
- **Next:** Consider food waste. How is this linked to soil? **(Slides 15-16)**
- **Finish by asking: What action could we take?** (as a class, school, or individual) **(slide 17)** You may like to plan how these suggestions could be put into action!

You could also

- **Further, develop pupils' knowledge of soils**. Use the earthworm ID resource to assess the biological health of the soil in different areas of the school or at home.
- **Make compost.** Allowing pupils to see food waste transformed into usable compost will help reinforce the importance or organic matter in soil formation. Compost in a bottle
- **Find out what types of soils are found in your local areas.** Use a soil map to explore how soil varies between regions and within an area. This is a great opportunity to further develop map skills.
- **Explore what is living in your soil.** Look through leaf litter and soil samples and observe the animals. Students could use a key to identify different creatures or simply count how many different species they have.
- **Why not** collect some worms**?** Worms are hugely important to soil health. They transport organic matter down into the soil. A wormery is a great way to observe this in action.