

Climate change: Super Soils & Food Waste

An introduction to soils. Explore what soil is made from, soil types and answer the question 'How can soil help prevent climate change?' Then consider how food waste is linked to soils and climate change.

Content

- Teacher's notes
- PowerPoint (17 Slides) – including two activity suggestions

Teacher's Notes

These resources could be used to deliver a single lesson focusing on soil, soil types, and climate change. Alternatively, by incorporating some of the suggested additional activities, a sequence of lessons could be developed. Additional teaching suggestions are included as notes within the PowerPoint. Some preparation is required for both of the activities suggested. It is suggested that children have an understanding of the basic causes and consequences of climate change before undertaking this session.

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.

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**.

Suggested Teaching Activities

- **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 4-7** 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 8)** 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 9)** 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.
- **Now:** Using **slides 10-14** 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 may also like to:

- **Further, develop pupils' knowledge of soils.** You may wish to explore soil layers (soil horizons). Practical suggestions on how to do this can be found in the resource ['Rocks and Soils'](#)
- **Make compost.** Allowing pupils to see [food waste](#) transformed into usable compost will help reinforce the importance of organic matter in soil formation.
- **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.

Have you considered a farm visit?

Farms around the world are working hard to combat climate change. A farm visit is a unique way to discover how climate change may impact our food production and what farmers are doing to make changes.

Organisations such as [LEAF Education](#) work with schools and landowners to encourage visits to the countryside. The LEAF Educational specialist for your area would be more than happy to offer help and support if you felt this is something you would like to consider.



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