Lesson Plan - How can we grow plants from scraps?

Year Group: 5-6

National Curriculum links: Science - functions of different parts of a plant, reproduction of plants (pollination and asexual).

Summary: In this lesson, students will learn about the different ways plants can produce. They will explore the process of propagation and use this to grow basil plants.

Prior learning:
Students need to be confident with the process of sexual reproduction of plants (pollination) and be able to name the reproductive parts of a plant.

Lesson objective: To explain how to propagate a basil plant.
Success criteria:

- I can explain how different plants reproduce.
- I can explain how to propagate a basil plant.
- I can explain how growing our own food can help reduce food waste.

Before lesson:
Collect clear plastic bottles and cut tops off (1 per group or child)
Source basil plant (can be shop-bought)

Have ready:
Scissors
Water
Basil plants (1 per group of 6)

Lesson outline

Slide 3: In pairs, students take turns to convince each other of the why the statement is correct. Allow for 2 minutes. Answers may include: food can be stored correctly; creating a shopping list; and creating zero-waste recipes. Ask student to share ideas as a class.

Slide 4: Explain the key vocabulary with students to ensure understanding. Propagation is a method of reproducing plants.

Slide 5: Begin to discuss that agriculture relies on the reproduction of plants on a large scale. In the UK, 3.3 million tonnes of food are wasted before it even leaves the farm (WWF, 2022). This could be from changes in climate such as a very cold winter or problems with storing or moving the crops. Ask students to explain how plants reproduce.

Slide 6: Use the diagrams to explain the process of pollination (sexual reproduction of plants). Either as a class or in pairs, label the parts of the flower involved in the reproduction process.

Slide 7: Explain that not all plants reproduce through sexual reproduction. Some produce asexually which means fertilisation does not occur, instead they create clones. Ask students if they have ever noticed what happens to potatoes after a while? Potatoes will grow tubers if left in a dark place. Other examples on the slide, include strawberry runners and daffodil bulbs.

Slide 8: Explain propagation and reintroduce the term cutting. This allows us to grow food from our scraps or cuttings.

Slide 9: Ask students to create a hypothesis about what may happen if a basil cutting is placed and left in water. Extension question: What the cutting will look like in 2 days, 5 days, 10 days? Either note down in the investigation planner or create a mind map on the board. Optional: Use the resource 'Investigation Template' to structure your write-up.

Slide 10: Model propagating a basil plant and allow time for students to complete their own propagation. Ensure plants are labelled. Student need to record their observation on day 1 and then at regular intervals.

Slide 11: Exit ticket - ask students to explain how humans can encourage asexual reproduction of plants.