

Curriculum links

Subject	England	Scotland	Wales
Science	Explore the parts that flowers play in the life cycle of flowering plants, including pollination.	Learners explore the rich and changing diversity of living things and develop their understanding of how organisms are interrelated at local and global levels.	Understanding how animals and plants are independent yet rely on each other for survival.

Objectives

To understand that pollination is the movement of pollen from one flower to another, to create seeds.

To recognise how animals play an essential role in the life cycles of plants, using bumblebees as an example.

Resources:

Paper and pencil

Optional (for extra activity): paintbrush and flowers



Activity

Starter

Ask the class to discuss all the ways that we use and enjoy plants and flowers in everyday life. Challenge the students to think about things such as for food, for enjoyment, for materials, for dye.

Main – PowerPoint® presentation guidance

The first part of the main is to run through the presentation slides and use the **key discussion points** below to stimulate conversation.

Slide 3 Discuss why bumblebees visit flowers. What are they doing? Has anyone watched a bumblebee on a flower before? e.g. for food, to feed their young, for survival.

Slide 4 Watch the video, ask the pupils to pay attention to what the bumblebees are doing in the video. Can they see their **long tongues** used for drinking nectar? Look to see the **pollen baskets** on the bumblebees' hind legs, where pollen is collected.

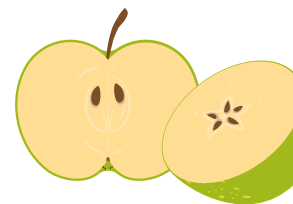
Slide 5 Bumblebees drink nectar from flowers for energy. Bumblebees have varying length tongues, so that different species can access nectar from different flowers. Some bumblebees have tongues as long as their whole body, up to 2 cm long. Can the class imagine having tongues that touch the floor?

Slide 6 Did you see the bumblebees' **pollen baskets** in the video? This is how they collect the pollen from flowers, to take to their nests and feed to their young.

Slide 7 Ask the class to guess how many flowers a bumblebee can visit in a day, before revealing the answer.

Slide 8 What happens to the pollen that is attached to the bumblebee's hair? What might happen to this when they move on to another flower? **Bumblebees are covered in thick, fuzzy hair** which is perfect for pollen to attach to.

Slide 10 Ask if anyone has eaten an apple before. Inform the class that every apple that has ever been eaten was once a single flower on an apple tree that was visited by a pollinator, that brought pollen from another apple flower. The petals fell from the flower and the base of the flower swelled up to become a delicious apple.



‘Pollinator!’ – pollen/bumblebee role-playing game

This is an opportunity for students to apply their learning about pollination and experience the relationship between bumblebees and flowers firsthand.

1. Ask the pupils to draw themselves a few pieces of pollen on some paper. Ask them to write their name on the back of the pollen.
2. Select a few pupils to be bumblebees.
3. The rest of the class are flowers. Ask them to stand with their arms out, holding their pollen.
4. The bumblebees must visit each flower and collect their pollen and take it to another flower.
5. When each flower receives someone else's pollen, they can become a seed. Ask them to curl up in a ball when they are a seed.
6. The aim is for the bumblebees to **turn all the flowers into seeds**.



Use two different colours for the pollen. Pollen must be transferred from and to someone holding the same colour pollen. This is to show that pollen moves from one flower to another of the **same type** for pollination.

You can also introduce a time limit, give the class **three minutes** to turn everyone into a seed!

Plenary

Pollination is a very important part of a plant's lifecycle. They are unable to produce fruit or seeds unless they are pollinated. Ask the pupils to discuss what would happen if we didn't have bumblebees to pollinate plants. Think back to what was discussed in the starter – food, materials, dye and so on.

