Buzzing around

LINKED CHALLENGE

To make a hovering magnetic bee or butterfly

ACTIVITY OVERVIEW

Discuss the importance of insects such as butterflies and bees for plant pollination, using the supporting video (below, right), before creating a model:

1. Lay the shoe box on its side (without the lid).
2. Cut a piece of thread longer than the height of the box and attach a paper clip to one end. Cut out a bee or butterfly shape in tissue paper and colour, then attach it to the paper clip.
3. Hold the insect close to the top of the box and tape the other end of the thread to the box base.
4. Lay a magnet on the top of the box, directly above the point where the thread is attached at the bottom.
5. Hold the insect near the magnet so the thread is tight and let go. The insect should hover by itself. You may need to adjust the length of thread once the approximate 'hover-point' is found. ('Invisible' thread can provide the illusion of the insect hovering unsupported.)

Explore different lengths of thread. Can you make the thread shorter and still make the insect hover? You could try a variety of magnets. Which is best for making the insect hover?

Extension activity: Challenge children to design a 'maze game' on card. With a magnet held under the card, can they navigate the bee/butterfly around the maze so that it reaches pollen in a flower?

KEY FACTS/SCIENCE

In simple terms, magnetism is a force created around some objects (called magnets) that will attract (pull towards) or repel (push away) other objects that are made from the metals iron, steel, nickel and cobalt. Metals that are attracted to magnets are called magnetic. Paperclips are made of steel. The attraction between the magnet and the paperclip is strong enough to pull the paperclip upwards against gravity, towards the magnet, without them touching. The stronger the magnet is, the larger its magnetic field and the further away you can move the paperclip and still make it hover.

Insects are attracted to flowers by their bright flowers and sugary nectar as well as pollen. They transfer pollen as they move about the flower. Pollination is the transfer of pollen (male cells) to the female part of the plant so that these cells can travel to the egg cells and fertilise them, making seeds.

RESOURCES

Main Activity (per group)

- Shoe box (or similar)
- Bar magnet
- Paperclip
- Thread
- Sticky tape
- Lightweight paper (tissue paper)
- Scissors
- Pencil crayons to decorate

Extension Activity

- Card

QUESTIONS/FURTHER LEARNING

- Is the magnet stonger or weaker if the insect hovers further away from the magnet?
- Why are insects like butterflies and bees so important to flowers?
- Where is pollen found in a plant?
- What time of year do you see most pollinators around? Why is that? Are there plants in your garden or school grounds that encourage insects?

Online supporting video on pollination:

https://tinyurl.com/ycq6ov2u