Take it Outside: Autumn

STEM: Firefly Circuit

Introduction

In 'The Origin of Fire', the fireflies lit up the night sky. In the natural world, fireflies use bioluminescence at twilight to attract prey or mates. Create your own firefly using electricity. Can you complete a circuit to make a glowing firefly?

You will need:

- card
- pens
- scissors
- equipment to create a circuit: bulb, foil, wire, paper clips, pins, batteries.

Key Questions

- What is the difference between a conductor and an insulator?
- What needs to happen for the bulb to light up?
- Can you make your firefly 'flash'? What will you need to add to your circuit?
- How can you make the bulb brighter?

What to do:

1. Before heading outside, you could watch this clip of fireflies and how they behave naturally: **https://www.youtube.com/watch?v=O_iwM7wb-ws**. *(Please check the content in this link, including any comments, is suitable for your educational environment before showing. Please do not let the next video automatically play at the end of the clip. Twinkl accepts no responsibility for the content of third party websites.)*
2. Practise making different circuits. How can you make the bulb flash on and off? Investigate adding a switch. You could use these handy sheets as a prompt: **Electric Circuits Pupil Prompt Sheets**. Ensure that children are making and testing their circuits safely. Follow your school's risk assessment policy.
3. Once you have a circuit that you're happy with, begin designing your 'firefly'. Use the card and draw an outline of a firefly. How will you make sure the bulb is visible? Where will you add the switch?
4. When your firefly is ready, place them in your outside area, preferably in a shaded

spot so the light is clearly visible. You could create a darkened den using sheets and tarpaulins.

5. Now, you're ready to perform your very own firefly flashes!

Ways to Support

Some children may find fixing the circuit together tricky. Use crocodile clips, for example, to help secure connections.

Ways to Extend

Experiment with making the bulb brighter – how will you adapt the circuit?

Curriculum Links

Science: Construct a simple electrical circuit and identify its basic parts; recognise a switch opens and closes a circuit.

DT: Understand and use electrical systems in a product.