



Bumblebees – Science KCV – Electricity



Key facts to learn:

- Know how to draw simple circuit diagrams
- Know the recognized symbols for a battery, bulb, motor, buzzer and wire
- Know how to predict whether components will function in a given circuit, depending on whether or not the circuit is complete; whether or not a switch is in an on or off position; and whether or not there is a cell to provide electrical current to the circuit
- Know that voltage is a measure of the power of a cell to produce electricity; it is a measure of the 'push' of electric current, not the size of the electric current
- Know that as the number and voltage of cells in a circuit increases, the brightness of a bulb or the volume of a buzzer will increase (though too high a voltage may 'blow' the bulb or buzzer)
- Know that two bulbs in a circuit can be wired up to create a series circuit or a parallel circuit; if one bulb blows in a series circuit the other will not shine as the circuit has been broken; in contrast, if one bulb blows in a parallel circuit, there will still be a complete circuit for the other bulb so it will continue to shine; use this knowledge to explain the advantages of using parallel circuits (e.g. in the lighting in homes)

Key skills to do:

- I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms.
- I can record data and results of increasing complexity using scientific diagrams and labels, tables, bar and line graphs.

Words to know and spell (Tier 2 Vocabulary)

Cell	Wire	Conductor
Open	Closed	Brightness
Volume	Switch	On/off
Danger	Electricity	Circuit diagram
Bulb	Buzzer	Motor
Symbols		

Words to understand and spell (Tier 3 Vocabulary)

Voltage	The force from an electrical circuit's power source.
Series Circuit	An electrical circuit where the same current flows through all of the components.
Parallel Circuit	An electrical circuit where the current flows in more than one path at the same time.
Current	A flow of electricity.
Resistance	A measure of the force acting in opposition to the flow of current.

Concept check questions. Test yourself:

What might you notice if you added an extra bulb or buzzer to a circuit?
Explain why you think the bulb in a room goes on when a switch is pressed.

Use your existing knowledge of circuit diagrams to draw a circuit to show a bulb, a battery and a switch.

Opportunities for Investigation:

Comparative Test: Which type of fruit makes the best fruity battery?