

Science | Year 6 | 2020-21 | Electricity

1. Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
2. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
3. Use recognised symbols when representing a simple circuit in a diagram

	Assessment guidance	Key learning	Key vocabulary
Electricity	Shows understanding of a concept using scientific vocabulary correctly	<p>Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound.</p> <p>If you use a battery with a higher voltage, the same thing happens.</p> <p>Adding more bulbs to a circuit will make each bulb less bright.</p> <p>Using more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter.</p> <p>Turning a switch off (open) breaks a circuit so the circuit is not complete and electricity cannot flow. Any bulbs, motors or buzzers will then turn off as well.</p> <p>You can use recognised circuit symbols to draw simple circuit diagrams.</p>	<p>Circuit</p> <p>Complete circuit</p> <p>Circuit diagram</p> <p>Circuit symbol</p> <p>Cell</p> <p>Battery</p> <p>Bulb</p> <p>Buzzer</p> <p>Motor</p> <p>Switch</p> <p>Voltage</p>
	Applying knowledge in familiar related contexts, including a range of enquiries	<p>Explain how a circuit operates to achieve particular operations, such as control the light for a torch with different brightnesses or make a motor go faster or slower</p> <p>Make circuits to solve particular problems such as a quiet and a loud burglar alarm</p> <p>Carry out fair tests exploring changes in circuits</p>	<p>Note: Children do not need to understand what voltage is but will use volts and voltage to describe different batteries.</p> <p>Note: The words cells and batteries are now used interchangeably</p>

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Lesson Progression	
1	Complete a 'physical' model to understand and explain the concepts of voltage and current.
2	Construct, identify and name parts of a series circuit. Draw scientifically accurate diagrams to represent these.
3	Plan and conduct an experiment to investigate how the brightness of a bulb changes when extra lamps are added to a series circuit. Conclude on results using scientific understanding and language to explain observations. Use findings to predict how adding more or less buzzers to a circuit might affect their sound.
4	Ask scientific questions, plan and conduct an experiment to investigate factors that make a motor spin. Conclude on results using scientific understanding and language to explain observations.
5	
6	Analyse circuits to determine whether they will work or not. Explain your decisions using scientific knowledge about electricity. Propose solutions for those circuits deeming faulty.