

Key Stage **KS1** Topic **Building Circuits** Class **2** Range **1 - 2 (3)**

End of Unit Goals

Pupils will be able to:

- Identify appliances that run on electricity
- Recognise the need for a power source (mains, battery, rechargeable, renewable, etc) and a circuit to make an appliance work.
- Identify both the component and its symbol in a simple circuit.
- Build simple closed series circuits
- Know electrical safety

Classification

- Group by difference, similarity or change
- Link properties of materials to an application

Designing Experiments

- Suggest what might happen
- Notice risk & know common dangers
- Follow a spoken or written instructions

Key Terminology:

Circuit, appliance, main supply, battery, wire, bulb, buzzer, component, connector, closed, (series), electricity, flow/transfer

Lesson	Content Objective	Skill Objective	Possible Activities/Demonstrations
1	Where do we use electricity in our home?	Group by difference, similarity or change	<ul style="list-style-type: none"> • Brainstorm what pupils already know about electricity and applications in the home • Spotting where we use electricity in the classroom / school (bring in items to extend thinking including those that need mains supply, battery, solar source, etc). Note similarities and differences. • Sorting picture cards (use/don't use electricity; types of use e.g. lighting, heating, etc; power source; rechargeable/not; etc). Use hoops to sort in different ways. • Pose thinking questions, e.g. If there was a power cut, what would still work?
2	How do we use electricity safely?	List common dangers to safe working	<ul style="list-style-type: none"> • Develop 'what not to do' for safe use in the home/classroom; first aid; discuss scenarios as a class • Use websites (www.switchedonkids.org); visit from electrician; safety DVD • Design / draw safety poster
3	What is a circuit?	Suggest what might happen in an investigation	<ul style="list-style-type: none"> • Make human circuit by passing balls in a circle (demonstrates flow/transfer of electricity to support energy transfer model in LKS2/ use flashing circuit balls. Include battery and bulb. • Demo: take a torch apart to show circuit/Connect to make it work; show wiring in plug socket (care!); show simple closed circuit (no switch but connect wires to make a closed circuit). For extension could show batteries in series. • Fix problem circuits. Emphasise need for closed circuit (could put series batteries in wrong directions). Predict and test. Get the pupils to model each problem using themselves and passing a ball.
4	What are the parts of a circuit? Can you remember the symbols we use?	Group by difference, similarity or change	<ul style="list-style-type: none"> • Link symbol cards to components; • Make a human circuit. Use symbol 'bibs'. Pass balls around circuit. • Sort different examples of each component (e.g. different types of bulb) into hoops with symbols • Identify components in circuit diagrams; (emphasise correct language for component, e.g. bulb not light)
5&6	Can you build a circuit?	Follow a spoken & written instructions	<ul style="list-style-type: none"> • Build circuits from diagrams; fix problem circuit diagrams • Demo: 'squidgy circuits' (make conducting/non-conducting play dough). Pupils follow procedure; design and build a squidgy circuit (groups build each other's designs). Ensure closed circuit. Draw circuit diagrams