

Changing Circuits : Science : Year 6

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To recap what electricity is and investigate static electricity.	In this initial lesson your class will recap their knowledge and understanding of electricity before discussing what static electricity is and how it can affect other things. They will either answer questions about electricity or investigate static electricity in different ways.	<ul style="list-style-type: none"> • Can children distinguish the differences between static and current electricity? • Can children describe what electrical charge is? • Can children give an example of where static electricity might be generated? 	<ul style="list-style-type: none"> • Slides • Worksheet 1A • Question Cards 1A/1B • Balloons • Static Electricity Investigation Cards 1A (FSD? activity only) • Observation Sheet 1A (FSD? activity only) • Equipment listed on investigation cards (FSD? activity only)
Lesson 2	To recap our knowledge and understanding of circuits.	In this lesson the children will focus more on their understanding of circuits, including parallel circuits. They will build and explore circuits and their components, discussing why some circuits will work and others won't.	<ul style="list-style-type: none"> • Do children know what the main components of a circuit are? • Do children recognise what the difference between a series and a parallel circuit is? • Can children draw and/or construct working circuits? 	<ul style="list-style-type: none"> • Slides • Worksheet 2A/2B/2C • Wires, batteries, bulbs/motors, switches (FSD? activity only) • Circuit Cards 2A (FSD? activity only) • Sticky notes
Lesson 3	To be able to recognise and use conventional symbols for circuits.	The children are challenged to match known circuit components to their corresponding circuit symbol. They will build circuits from diagrams and draw their own.	<ul style="list-style-type: none"> • Do children know why symbols are used to draw circuit diagrams? • Can children recognise the symbols for various common circuit components? • Can children use conventional circuit symbols to draw and/or construct circuits? 	<ul style="list-style-type: none"> • Slides • Worksheet 3A/3B/3C • Circuit Cards 3A (FSD? activity only) • Wires, batteries, bulbs, buzzers, switches, motors (FSD? activity only) • Camera - optional (FSD? activity only)
Lesson 4	To investigate ways in which the brightness of a bulb or speed of a motor is changed.	Children investigate how the number of components and batteries affects the voltage in a circuit and so affects how brightly a bulb will shine. They will use their knowledge of circuit symbols to draw and discuss different circuits and suggest which may potentially overload the components, breaking them.	<ul style="list-style-type: none"> • Do children know that the brightness of a bulb or the speed of a motor can be changed in a circuit? • Do children know that the brightness of a bulb or speed of a motor depends on how much power is supplied to each component? • Do children know that bulbs and motors will blow out if too high a voltage is used? 	<ul style="list-style-type: none"> • Slides • Worksheet 4A/4B/4C/4D • Question Cards 4A (FSD? activity only) • Batteries, bulbs/motors, wires, switches (FSD? activity only)
Lesson 5	To be able to plan, carry out and evaluate an experiment to see how changing the wire in a circuit affects the brightness of a bulb.	After investigating how the number of batteries and bulbs in a circuit affect bulb brightness, your class will plan and conduct an investigation to see how different wires can affect the brightness of a bulb. The children will look at improving an existing investigation as well as discussing anomalous results in experiments and how we can spot them.	<ul style="list-style-type: none"> • Do children know that the brightness of the bulb in a circuit can be altered by changing the wires? • Can children suggest questions to investigate, decide what to do and what equipment to use to test the question? • Can children make fair comparisons and draw conclusions from their results? 	<ul style="list-style-type: none"> • Slides • Worksheet 5A/5B/5C • Batteries and bulbs • Different thicknesses of fuse wire • Worksheet 5D (FSD? activity only) • Results Sheet 5A (FSD? activity only)
Lesson 6	To create a simple device using a circuit.	In this final lesson the children will put their knowledge and understanding of electricity and circuits to the test as they make their own burglar alarms or other devices.	<ul style="list-style-type: none"> • Can children design a simple circuit for a purpose? • Are children able to build a working circuit for a purpose? • Can children use their knowledge of circuits and components such as switches to create more complex circuits? 	<ul style="list-style-type: none"> • Slides • Challenge Card 6A/6B • Worksheet 6A • Device Cards 6A • Circuit equipment • Pegs, aluminium foil, craft wire, paper tubes, cardboard • Challenge Card 6C (FSD? activity only) • End of Unit Quiz