

Science– Zephaniah and Bowie Changing Circuits

Objective	What it looks like
<p><u>Knowledge:</u> Use recognised symbols when representing a simple circuit in a diagram</p> <p><u>Working Scientifically:</u> record data and results Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Children are given a tray of electrical components and draw a circuit to make a bulb light. Their drawings are compared and standard symbols used by scientists and engineers are introduced. Children re-draw their circuits using the symbols, then swap their drawings with other groups.</p>
<p><u>Knowledge:</u> To understand and explain reasons for variations between the brightness of bulbs and loudness of buzzers within a circuit and recognise symbols when representing a simple circuit.</p> <p><u>Working Scientifically:</u> Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Using test results to make predictions to set up further comparative and fair tests. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Children match circuit symbols with electrical components provided for them. They are given a selection of batteries with different voltages and investigate the relationship between batteries and bulb brightness. In pairs, children suggest how electricity lights a bulb and explain the effects of changing the number of bulbs in a circuit</p>
<p><u>Working Scientifically:</u> Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p>	<p>Children rank different circuits according to predictions made about the brightness of the bulb. Children test these predictions by building the circuits and then replace the bulb with a buzzer to</p>

Science– Zephaniah and Bowie

Changing Circuits

	<p>see how volume is affected. Groups are challenged to build a circuit where the buzzer is as quiet as possible</p>
<p><u>Knowledge:</u> 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</p>	<p>Children re-visit what they know about altering brightness and volume and are introduced to wires. They observe the differences between selections of wires, then come up with questions to prompt investigations about different wires and bulb brightness. Children make a giant circuit with one cell, one bulb and two wires. They observe the effects of adding more wires to the circuit until the light goes out.</p>
<p><u>Knowledge:</u> Use recognised symbols when representing a simple circuit in a diagram. <u>Working Scientifically:</u> Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Children make a circuit to turn a buzzer on and off. They then make a break in the circuit, attaching an extra wire with a crocodile clip and test different suggestions for what can be used to turn the buzzer on.</p>
<p><u>Knowledge:</u> Use recognised symbols when representing a simple circuit in a diagram. <u>Working Scientifically:</u> Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Children review circuit diagram symbols and build a circuit to make a motor turn. They discuss mending a faulty scoreboard, adding faults and remedies to their fault finder posters</p>