



# Waterbeach Community Primary School

## Curriculum Capture for Year 6 Science: Electricity

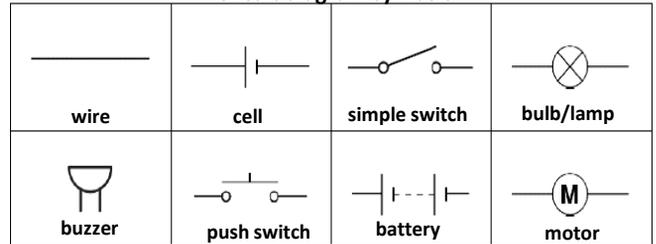
### Theme: Structures

Key Knowledge	
<p><b>What is electricity?</b></p> <p>Electricity is a type of energy. When electricity gathers in one place it is known as <b>static electricity</b> (static means something that does not move); electricity that moves from one place to another is called <b>current electricity</b>.</p> <p>Electricity is caused by electrons, which are tiny, negatively charged particles in an atom. When electrons move, they pass electrical energy. An <b>electric current</b> is a flow of this electrical energy, sometimes called <b>electrical charge</b>. What we know as electricity is this charge carried by electrons passing energy in a wire.</p>	<p><b>How do electrical circuits work?</b></p> <p>To make electricity flow, there must be a continuous path or <b>circuit</b> for the current to flow through. There must also be an energy source to drive the current e.g. a battery, or mains electricity.</p> <p>In a simple circuit, a bulb, buzzer or motor will light, sound or rotate when electricity flows through it. A switch can be used to open or close the circuit: when it is open (off), there is a gap and electricity cannot travel round; when it is closed (on), the circuit is complete and electricity can travel round.</p> <p>All electrical equipment, whether a simple light bulb or a sophisticated device, contains an electrical circuit and this often contains a switch.</p>
<p><b>How do components affect how well circuits work?</b></p> <p>All components in a circuit resist (slow down) the flow of electricity and this varies depending upon the material they are made of. The effects of changing the resistance in a circuit can be demonstrated by changing the circuit's components and observing what happens to a bulb or buzzer in the circuit. For example: If you increase the length of wire through which the electricity flows, this increases the resistance so the bulb becomes dimmer. If you add more bulbs, this increases the resistance and slows down the flow so the bulbs become dimmer.</p> <p>On the other hand, adding more batteries in a circuit will increase the voltage and make a bulb brighter, a buzzer louder, and a motor rotate faster.</p>	<p><b>Electrical components</b></p> <p>A battery, bulb, buzzer, motor, switch and connecting wires are called <b>components</b> of a circuit. All components added to a circuit must be connected into and made part of the circuit to allow the electricity to flow continuously round.</p>
	<p><b>What is a circuit diagram?</b></p> <p>Circuit diagrams are visual representations of a circuit that show the components more clearly than a picture or realistic drawing would. Internationally recognized symbols are used to represent components so that circuit diagrams can be understood anywhere in the world. Wires are shown as straight lines so that the flow of electrical current can be easily traced.</p>

**Electrical circuit components**



**Circuit diagram symbols**



#### Scientific Vocabulary

current	the flow of electrical charge; in a battery it is the number of electrons leaving the battery in each second
voltage	the force or 'push' of the battery to cause the flow of electrical charge
power	the amount of electrical energy per second converted into another form (eg light )
battery	a source of electrical energy; a battery is a number of cells used together
cell	a source of electrical energy made by chemicals reacting together
transducer	a device that converts energy from one source into another
bulb/lamp	a transducer which converts electrical energy into light energy
motor	a transducer which converts electrical energy into movement or kinetic energy
buzzer	a transducer which converts electrical energy into sound energy