






## Designing

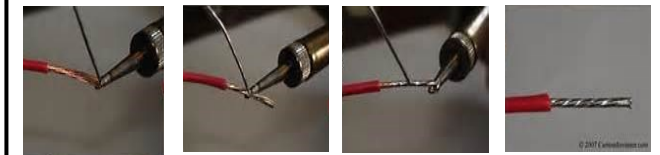
<b>Design</b>	a plan or drawing produced to show the look and function or workings of an object before it is made. To imagine and create a product to be made.
<b>Constraint</b>	a set size or <b>dimension</b> that can not be exceeded which acts as a limit.
<b>Tolerance</b>	the allowable difference between the intended size of a design and the final

## Materials

<b>Battery</b>	Supplies voltage to the circuit	
<b>Tilt Switch</b>	Can be used as a simple movement detector. It completes the circuit when you turn it over	
<b>Resistor</b>	Restricts current flow to protect other parts of the circuit	
<b>Solder</b>	Is an <b>alloy</b> of lead and tin, has a low melting point and is a good conductor	
<b>LED</b>	Light Emitting Diode. Lights up when current flows through it	

## Manufacture

<b>Soldering</b>	Attaching circuit components together using solder and a soldering iron. This is a really important skill to learn, practice and master
<b>4 step method</b>	<ol style="list-style-type: none"> <li>1. Heat the joint</li> <li>2. Feed the solder in</li> <li>3. Remove the solder</li> <li>4. Remove the heat</li> </ol>
<b>Tinning</b>	Preparing wires and components by melting solder onto the ends

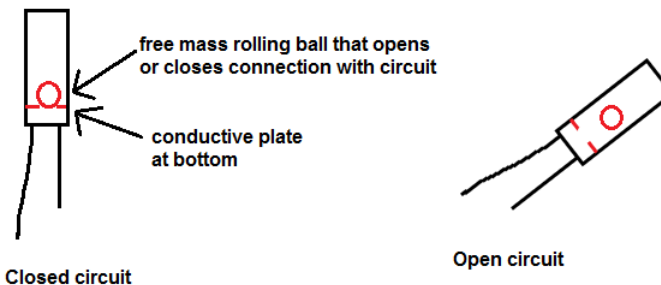


## Explore – STEM links

<b>Current</b>	Electrons moving through a conductor to create a flow of electricity. Current can be compared to water flowing through pipes
<b>Voltage</b>	Electrical energy that forces electrons to create a current. Voltage can be supplied by a cell or battery (DC voltage) or from a plug socket (mains, AC voltage).
<b>Resistance</b>	The force that pushes back against the flow of electricity. Resistance can be used to control the flow of current in circuits
<b>Series circuit</b>	A closed loop of electronic components, joined end to end.

## Functionality

<b>Tilt switch</b>	A tilt switch works by connecting two open ends of a circuit with a metal ball, inside a tube.
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## Critique

<b>Design Criteria</b>	A list that you create or use when making a product, which outlines what the product must do, look like or be made from
<b>Specification</b>	A detailed list that clearly outlines the criteria for specific products
<b>Evaluation</b>	You should use your specification when evaluating products. This is to make sure you have made your product successfully. You should get other peoples' opinions about your product

Specification point	justification
The jar must be recycled	To reduce waste
The jar must light up	To give it a use
I will use a tilt switch	So that it turns on when

Vocabulary used in electronics - wires circuit safety goggles apron conductor insulator side cutters wire strippers soldering iron

Health and Safety - Wear protective clothing. Tie long hair back. Listen to instructions. Use the correct technique. Use a heat proof mat and circuit clamp. Put the soldering iron back into the holder when not in use. Be calm and sensible at all times. Tidy up after you have finished