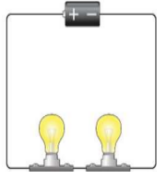


Technical Knowledge



This is a diagram of a **series circuit** – the electrical current flows through every **component** in the circuit – the switch, battery and bulbs.



This is a diagram of a **parallel circuit** – this has two or more paths for the electrical current to flow through. If one loop is disconnected then the other still has power.

Which type of circuit will you use in your electronic greetings card?

Which types of materials will you use to conduct or insulate your product?

Key Vocabulary

Word	Definition
<i>series circuit</i>	a circuit where the current follows one path
<i>parallel circuit</i>	a circuit where the current flows through two or more paths
<i>target audience</i>	a specific group of people that a product is aimed at
<i>component</i>	one of several parts of which something is made e.g. bulb, buzzer, wire
<i>LED</i>	is a Light Emitting Diode, which lights up as electricity passes through it
<i>filament</i>	a conducting wire, forming part of an electric bulb, made incandescent by an electric current
<i>modify</i>	changing something to improve or fix it



Disciplinary Knowledge we will cover:

Investigate Technical Knowledge – Develop their own design criteria and use these to inform their ideas – Evaluate products and identify criteria that can be used for their own designs. – How simple electrical circuits and components can be used to create functional products.



Design – Generate realistic ideas, focusing on the needs of the user – Make labelled drawings from different views showing specific features – Make design decisions that take account of the availability of resources – Suggesting alternative methods of making, if the first attempts fail.



Make – Measure, mark out, cut and shape materials and components with some accuracy – Assemble, join and combine materials and components with some accuracy.



Evaluate – Refer to their design criteria as they design and make – Use their design criteria to evaluate their completed products.



Key Knowledge



Electricity travels at the speed of light, that's 300 million metres per second! However, the electricity that flows through your home and appliances you use is much slower, about 1/100th the speed of light.



A traditional light bulb has a **filament** that heats up and glows when an electrical current runs through it. Up to 90% of the energy used goes towards producing the heat.



An LED is more energy efficient and produces light when an electric current passes through it. They use very little electricity and don't require or emit great amounts of heat.

