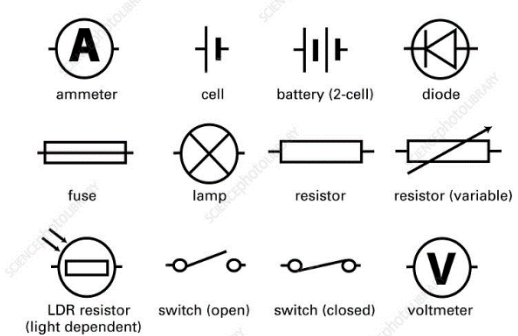
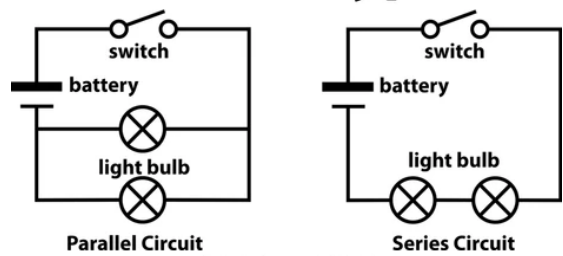


Knowledge Organiser - Science

Year 6 Spring Term 1 - Tomorrow's World

Recap from previous years	Important vocabulary	Key facts	Pictures/diagrams
<p>Science - working scientifically</p> <p>Light - (may have missed this unit previously for covid)</p> <p>Computing - coding</p> <p>Circuits - covered in year 4 but may have missed due to covid</p>	<p><u>Retrieval vocabulary</u></p> <p>Electrical circuits</p> <ul style="list-style-type: none"> electricity - a form of energy that we use to power appliances electric current - electricity moving through an electrical conductor or space Appliances - a device or piece of equipment designed to perform a specific task Wires - metal drawn out into a thin flexible thread (often surrounded by insulation) Bulbs - a device used to convert electricity into light Buzzers - an electrical device that makes a buzzing noise and is used for signalling. crocodile clips - a sprung metal clip with long, serrated jaws used in electrical circuits battery cell - a singular battery Battery - a container with one or more cells which turns chemical energy into electrical energy Motor - a machine that produces movement or action Switch - a device for making and breaking the connection in an electrical circuit electrical conductor - a material that allows electricity to flow through it electrical insulator - a material that does not allow electricity to flow through it 	<p>How does light travel?</p> <ul style="list-style-type: none"> Light travels in straight lines therefore shadows form when light is blocked. We can make light move around corners using reflection. Shadows have the same shape as the objects that cast them. The size of the shadow depends on how far away the light is. <p>How does light help us to see?</p> <ul style="list-style-type: none"> We see things when light enters our eyes. Our pupils change size and get bigger to let more light in when it is dark and less light in when it is bright. This is important because too much light can damage our eyes. Not all objects give off light and so we see some objects because light reflects off their surface and into our eyes. Light enters our eyes and hits the retina, which is found at the back of the eye. <p>How do we represent components of a circuit in a simple diagram? / How does the number of cells affect the components in a circuit?</p> <ul style="list-style-type: none"> To make a circuit work, it needs to have a power source and needs to be a complete circuit. The more cells used in a circuit, the brighter the bulb, volume of the buzzer and/or speed of the motor. Switches can be used to control circuits. They change the flow of an electrical circuit. They can break and complete circuits. 	 <p>Circuit Types</p>  <p>shutterstock.com · 1619901676</p>

- electrical circuit - a complete route that an electric current can flow around
- Travel - to move
- Circuit diagram - an image of a circuit
- Symbols - the images/symbols used on a circuit diagram to represent the different components of a circuit

Light

- Opaque - not able to be seen through/not transparent
- Transparent - something that can be seen through
- Mirror - a surface, typically of coated glass, which reflects a clear image
- Reflection - the throwing back of a surface of light without absorbing it
- Retina - a layer at the back of the eyeball that contains cells sensitive to light
- Pupil - the round opening in the centre of the iris
- Iris - the coloured part of the eye
- Cornea - the transparent layer forming the front of the eye
- Lens - a nearly transparent layer behind the iris which focuses light rays onto the retina
- Optic nerves - the nerve that carries messages from the retina to the brain

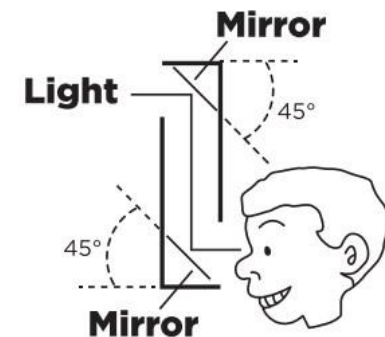
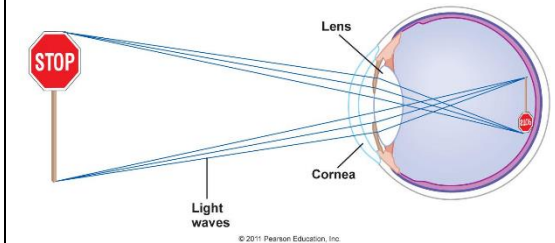
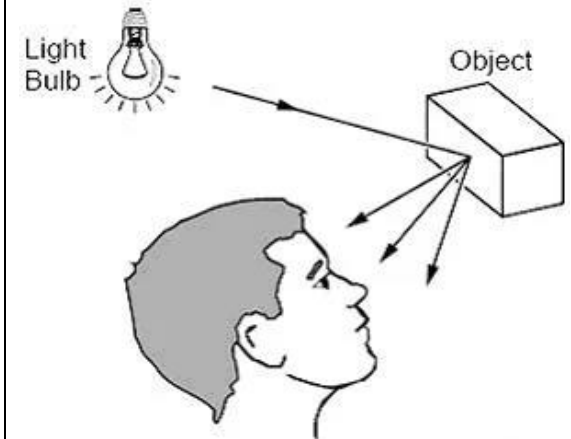
Computing

- Algorithms - a set of instructions to complete a task/for a purpose
- Browser - a computer program used to navigate between web pages
- Code - a set of instructions/a system of rules written in a programming language

Working scientifically

How does the position of switches affect the components in a circuit? / How does the length of cables affect the components in a circuit?

- Electricity will only travel around a circuit that is complete. That means it has no gaps. You can use a switch in a circuit to create a gap in a circuit. This can be used to switch it on and off.
- When a switch is open (off), there is a gap in the circuit. Electricity cannot travel around the circuit. When a switch is closed (on), it makes the circuit complete. Electricity can then travel around the circuit.
- The resistance in a wire increases as the length of the wire increases and thickness of the wire decreases. This makes it more difficult for the current to flow.



- Variables - an element, feature of factor likely to vary or change
- Prediction - an educated guess about the outcome of an experiment
- Conclusion - a summary of the experiment and its findings
- Fair test - an experiment where one variable is changed, and all of the other variables are kept the same
- Method - the way in which an experiment is done
- Results - the outcome(s) of an experiment

New vocabulary

Circuits

- Mains - the power supply that comes through our plug sockets and travels across power lines
- Voltage - the strength of a power supply, measured in volts
- Wattage - the strength of a power supply measured in watts
- Series circuits - a circuit where the current travels through each component

Light

- Periscope - a tube with a system of mirrors that can see things that are otherwise out of sight. They are often used on submarines

Computing

- Debugging - the process of identifying and removing errors from computer hardware or software
- Component - a part or element of a larger whole
- Database - a structured set of data held in a computer
- Encryption - the process of converting information or data into a code (specially to prevent unauthorised access)