

Y6 – Can we use the powers of electricity and light to tell a story?

Power of Reading link texts
Rooftoppers by Katherine Rundell

National Curriculum PoS - Science:

- associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
- 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
- use recognised symbols when representing a simple circuit in a diagram

Procedural knowledge:

Planning

Can they explore different ways to test an idea, choose the best way, and give reasons?

- Can they vary one factor whilst keeping the others the same in an experiment? Can they explain why they do this?
- Can they plan and carry out an investigation by controlling variables fairly and accurately?
- Can they make a prediction with reasons?
- Can they use information to help make a prediction?
- Can they use test results to make further predictions and set up further comparative tests?
- Can they explain, in simple terms, a scientific idea and what evidence supports it?

Doing

Can they explain why they have chosen specific equipment? (incl ICT based equipment)

- Can they decide which units of measurement they need to use?
- Can they explain why a measurement needs to be repeated?
- Can they record their measurements in different ways? (incl bar charts, tables and line graphs)
- Can they take measurements using a range of scientific equipment with increasing accuracy and precision

Evaluating

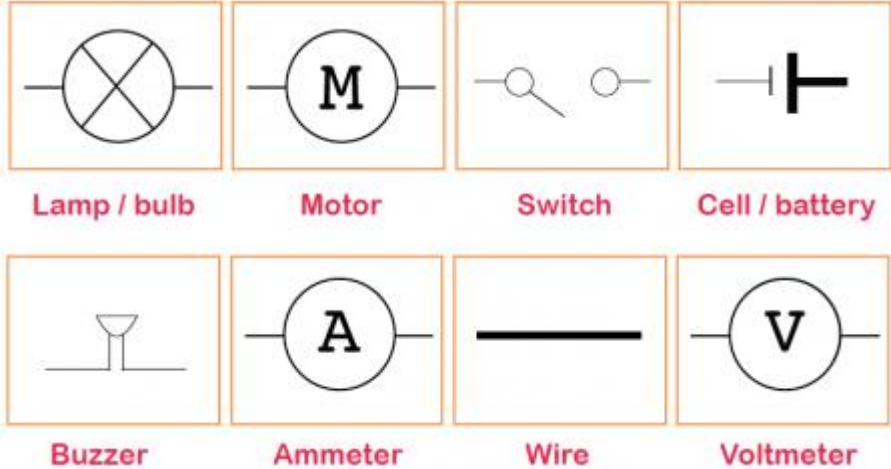
Can they find a pattern from their data and explain what it shows?

- Can they use a graph to answer scientific questions?
- Can they link what they have found out to other science?
- Can they suggest how to improve their work and say why they think this?
- Can they record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models?

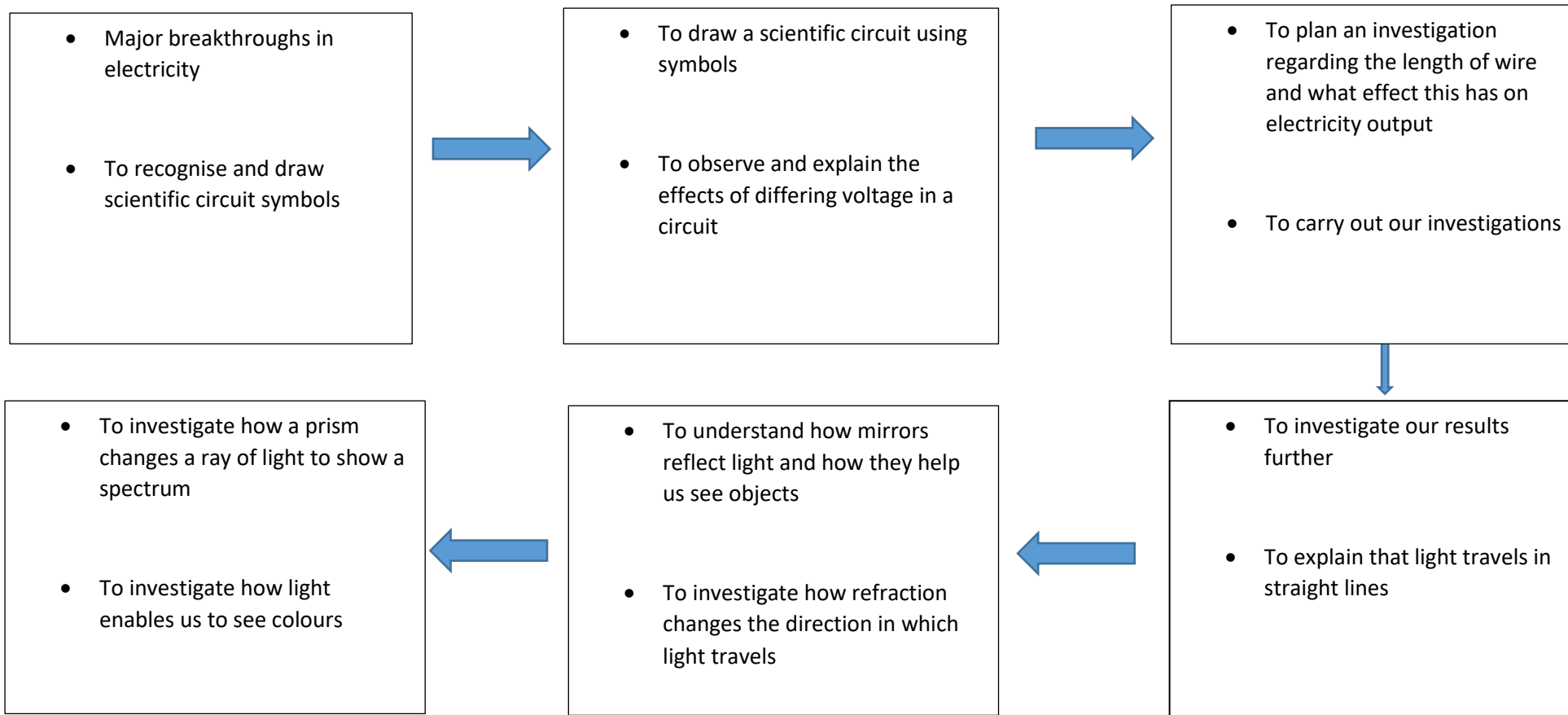
Science

- Can they report findings from investigations through written explanations and conclusions?
- Can they report and present 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?

Science

Key Facts	Key Images	Key Vocabulary
<p>We use electricity every day, but most people know very little about the physical phenomena. Electricity is the most versatile energy source on the planet, but we've only depended on it for about 100 years.</p> <p>Electricity is a type of energy that builds up in one place, or flows from one place to another. When electricity gathers in one place it is known as static electricity. Electricity that moves from one place to another is called electric current.</p> <p>Static electricity usually happens when you rub things together. It's why a balloon will stick to you after rubbing it against your clothes. Or why you get a shock when walking across carpet and touching something metallic. It's also the cause of lightning. As rain clouds move through the sky, they rub against the air around them.</p> <p>An electric current is a flow of electric charge. In electric circuits this charge is often carried by moving electrons in a wire. It is involved in powering the electrical appliances you use every day: computers, smartphones, washing machines, flashlights and any other common electric device.</p> <p>Electricity travels at 6,696,000 miles per hour.</p> <p>Electricity plays an important role in the way your heart functions. Muscle cells in the heart are contracted by electricity that runs through your body.</p> <p>Fossil fuels are the largest source of electricity but renewables such as wind, solar and water are more environmentally friendly.</p>	 <p>Lamp / bulb Motor Switch Cell / battery</p> <p>Buzzer Ammeter Wire Voltmeter</p>	<p>Current – A flow of electrical charge</p> <p>Circuit – a conducting path between the two ends of a cell or battery.</p> <p>Voltage – The name of the electrical force that causes electricity to flow.</p> <p>Cell – A single part of a battery that produces a voltage of current</p> <p>Battery - a battery is a collection of cells</p> <p>Bulb – A lamp in which a glow is produced by electrical current</p> <p>Switch – Switches are used to control circuits by breaking the circuit or completing it.</p> <hr/> <p>Reflection – the return of light from a surface</p> <p>Refraction - the change of direction of a ray of light as it passes through different substances.</p> <p>Transparent – allowing light to pass through so objects can clearly be seen behind.</p> <p>Translucent – allowing light, but not detailed shapes, to pass through.</p> <p>Opaque – Doesn't allow light through.</p> <p>Shadow – created by an opaque object.</p>

Journey towards the final outcome: to be decided by staff



- Major breakthroughs in electricity
- To recognise and draw scientific circuit symbols

- To draw a scientific circuit using symbols
- To observe and explain the effects of differing voltage in a circuit

- To plan an investigation regarding the length of wire and what effect this has on electricity output
- To carry out our investigations

- To investigate how a prism changes a ray of light to show a spectrum
- To investigate how light enables us to see colours

- To understand how mirrors reflect light and how they help us see objects
- To investigate how refraction changes the direction in which light travels

- To investigate our results further
- To explain that light travels in straight lines

The children create a Parisian skyline and will recreate the story of 'Rooftoppers' using shadow puppets. They will perform their 'light stories' for the Reception children.