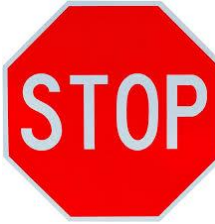




Knowledge Organiser	Subject: Design and Technology	Topic: Light up signs	Year: 4
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<u>Key Knowledge</u> <u>Technical knowledge I have already learnt about lights and signs.</u> Lights are a form of energy that helps us see things. It comes from sources like the sun, light bulbs, torches, or even fire. When something gives off light, it means it emits light to brighten up things around it. There are different types of light: Natural Light: Comes from the sun and helps us see during the day. Think of summer when it's bright outside. Artificial Light: Comes from things like lamps, candles, or light bulbs. We use them in our homes when it gets dark outside. Signs are a way of giving us important information or directions. Signs are like messages without words that use pictures, symbols, colours, or shapes to communicate something to us. Signs can tell us what we need to do, where we need to go, or warn us about something. 	<u>Key Learning</u> What are Illuminated Signs? Illuminated signs are signs that are designed to be lit up or illuminated, making them visible even in the dark. These signs use different lighting methods, such as LED lights, neon lights, or backlighting, to make them easy to see at night or in dimly lit areas. Examples of Illuminated Signs Neon Signs: Neon signs are made of brightly coloured tubes filled with gas that lights up when electricity passes through them. You often see neon signs outside shops and restaurants. LED Signs: LED signs use light-emitting diodes (LEDs) to create brightly lit signs. They are energy-efficient and can display different colours and animations. Backlit Signs: These signs have lights placed behind them, so the sign itself does not light up but is illuminated from behind, making the letters or images stand out. Why Are Illuminated Signs Used? Visibility: Illuminated signs are essential for businesses that want to be noticed, especially at night. They make it easier for people to find shops, restaurants, or other businesses in the dark. Attractiveness: The bright and eye-catching nature of illuminated signs can make them more attractive to customers, drawing attention to the business and what it offers. Branding: Illuminated signs help businesses establish their brand identity and make a memorable impression on customers. For example, the glowing golden arches of McDonald's are instantly recognisable.	<u>Disciplinary Skills</u> • Generate ideas through brainstorming and identify a purpose for their product. • Draw up a specification for their design. • Select appropriate materials, tools and techniques. • Use skills in using different tools and equipment safely and accurately. • Evaluate a product against the original design specification. <table border="1"> <thead> <tr> <th colspan="3">Key Concepts</th></tr> </thead> <tbody> <tr> <td> Design- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. </td><td> Make- Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. </td><td> Evaluate – Investigate and analyse a range of existing products Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. </td></tr> </tbody> </table>	Key Concepts			Design- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	Make- Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.	Evaluate – Investigate and analyse a range of existing products Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world.
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Key Vocabulary	
Sign	A sign that has information for people.
Illuminated	Lit with bright lights.
Electricity	A form of energy resulting from the existence of charged particles (such as electrons or protons), either statically as an accumulation of charge or dynamically as a current.
LED	A light-emitting diode (a semiconductor diode which glows when a voltage is applied).
Circuit	A roughly circular line, route, or movement that starts and finishes at the same place.
Program	A series of coded software instructions to control the operation of a computer or other machine.
Advertising	The activity or profession of producing advertisements for commercial products or services.
Incandescent	Emitting light as a result of being heated.
Resistors	A device having resistance to the passage of an electric current.



Linking Thinking Across Our Learning Journey						
Early Years	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Once upon a time- Building structures	Playgrounds – Structures	Carnival hats - Structures	ROH Stage design – Structures	Light up signs- Constructing and designing	Bridges- Structures	African instruments/ Fairgrounds- Constructing