



Design and Technology

Year 4

Term 2

Topic: Light Up Signs

Focus Form: **Construction**/Food and Nutrition/Textiles

Health and Safety Awareness: Pin Pricks, needles, scissors.

**National Curriculum Objectives:**

**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,

**Make:** select from and use a wider range of tools and equipment to perform practical tasks

select from and use a wider range of materials and components, including construction materials

**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

**Technical Knowledge:** apply their understanding of how to strengthen, stiffen and reinforce more complex structures

understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]

**Techniques:**

Electrical systems

Sawing

Gluing

Cutting

**Context:**

- Home
- School
- Leisure
- Wider environment

**Prior Learning:**

Electrical knowledge from year 4 science unit.

Knowledge of structures from Year 3 DT unit.

**Vocabulary:**

Light, circuit, gluing, sawing, measuring, centimetres, opaque, structure, translucent.

**Knowledge:**

Knowledge of electrical circuits and how to use that in a DT structure.

**Skills:**

Work confidently, within a range of contexts, such as the home, school, leisure, culture.

Indicate the design features of their products that will appeal to intended users

Explain how particular parts of their products work

Generate realistic ideas, focusing on the needs of the user

Select materials and components suitable for the task

Explain their choice of tools and equipment in relation to the skills and techniques they will be using

Follow procedures for safety

why materials have been chosen • what methods of construction have been used

How simple electrical circuits and components can be used to create functional products

<b>Existing products/designers:</b> Light boxes in the wider world, including on the roads, shops and for decoration.	<b>End Point:</b> Create their own light box.	
<b>Cross Curricular Links:</b> Science- electricity Maths- measurements.	<b>Oracy:</b> Discussion of light in the wider world and the importance/use of them	
<b>Wider Reading</b>		<b>Enrichment</b>
Until I Met Dudley Oscar and the Bird		Create different electrical circuits. Explore different uses of light.

Lesson	Focus	Key Question
1	Evaluate	What are illuminated signs?
2	Skills based lesson	What are LED lights?
3	Design	To design a decorative illuminated sign.
4	Make	How can I select the right tools and equipment to make my sign?
5	Make	How can I construct a working circuit to fit my illuminated sign?
6	Evaluate	How can I evaluate my product.