



# Shadsworth Junior School



## Curriculum

### Year 3 Scheme of Work Design Technology

**Term: Autumn 1**

**Topic: Electrical Posters**

#### Key Skills and Knowledge:

##### Key Skills

- Developing, planning and communicating ideas
- Generating a final design for the electric poster with consideration for the client's needs and design criteria.
- Planning the positioning of the bulb (circuit component) and its purpose.
- Learning ways to give the final product a higher quality finish (e.g. framing to conceal a roughly cut edge).
- Revisiting the requirements of the client to review developing design ideas and check they fulfil their needs.

##### Working with tools, equipment, materials and components

- Mounting the poster onto corrugated card to improve its strength and withstand the weight of the circuit on the rear.
- Measuring and marking materials out using a template or ruler.
- Fitting an electrical component (bulb).

##### Evaluating processes and products

- Evaluating electrical products.
- Testing the success of initial ideas against the design criteria and justifying opinions.
- Learning to give and accept constructive criticism on their work and the work of others.

##### Key Knowledge

- To understand that electrical conductors are materials which electricity can pass through.
- To understand that electrical insulators are materials which electricity cannot pass through.
- To know that a battery contains stored electricity that can be used to power products.
- To know that an electrical circuit must be complete for electricity to flow.
- To know that a switch can be used to complete and break an electrical circuit.

#### Reading and Writing Opportunities (Long and Short Activities) Creative Ideas and Hooks

##### Research Opportunities

- Who first discovered electricity?
- Who created the very first light bulb?
- Pupils given the opportunity to explore different light sources.
- Pupils given the opportunity to create a simple circuit.

##### Writing Opportunities

- Identify common appliances that run on electricity
- Fact cards/ research on famous inventors.
- Progress report based on final product.

##### Hooks

- Can you get the bulb to turn on? Explore and construct a simple series circuit. What if we include a switch? What happens when we open and close the switch?

##### Inventors

- Sir Joseph Swan - Invented the first electric light bulb in 1860.
- Thomas Edison - Developed the incandescent lamp, improving on Joseph Swan's design almost 20 years later in 1880, which could then be used as part of a circuit to form a practical lighting system.

#### Links to PSHCE, Equality and British Values Work

##### British Values

##### Democracy

The children must take the views and opinions into account but still have the right to make their own choices.

##### The Rule of Law

- To understand the importance of safety rules when using tools.

##### Individual Liberty

- To understand that they are able to listen to others but can use their own ideas and design choices.
- To understand that many great design ideas originate from other cultures.

##### Mutual Respect

- To listen to and consider the ideas and opinions of others even if they differ from your own.
- To offer supportive comments in evaluations that will improve learning outcomes in a way that is objective but sensitive to the listener.

#### Resources Available / Visits/Visitors

- Batteries
- Bulbs
- Bulb holders
- Wires
- Corrugated cardboard
- A4 Paper
- Felt tips/ crayons
- Coloured card strips (frame)

##### Key Vocabulary:

Battery, bulb, cell, component, conductor, electricity, function, insulator, series circuit, switch

##### Previous Knowledge:

Can I make an electrical circuit?

##### Useful Websites:

<https://www.kapowprimary.com/subjects/design-technology/lower-key-stage-2/year-3/electrical-systems-electric-poster/>

