CORPUS CHRISTI CATHOLIC PRIMARY SCHOOL

ONE BODY, MANY PARTS

DT Knowledge Organiser: Year 4: Spring 2 Electrical Systems: Torches

Project: Design and make a torch – who is it for and what features does it need?

This half term you will learn:

- how electrical systems work;
- to identify the features of a torch;
- how a torch works;
- to discuss the positives and negatives of different torches;
- what electrical conductors and insulators are;
- that a battery contains stored electricity and can be used to power products;
- to make a torch with a working electrical circuit and switch;
- to select and use appropriate equipment to cut, assemble and attach materials;
- how to create a labelled design, showing the individual design features;
- to explore, test and evaluate existing torches through questioning, exploration, disassembling, handling, looking and drawing upon existing knowledge of torches.

Let Me Introduce You To...

Thomas Edison

Thomas Edison was an American inventor who transformed the world with inventions including the lightbulb. In January 1869 Edison resigned from his job, intending to devote himself full time to inventing things. In 1879, after considerable experimentation and based on 70 years work of several other inventors, Edison invented a carbon filament that would burn for 40 hours—the first practical light**bulb**.

Key Knowledge

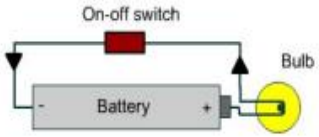
How many **electrical** items do you have in your home?

Which items need to be plugged into the electricity?

Which items use **battery** power?

In the early 1900's some homes began to use household **electrical** items, such as washing machines, kettles and sewing machines. How would life be different for you today without **electrical** items in your home and at school?

Technical Knowledge



This is a **series circuit** – the **battery** contains stored electricity and this is used to power the **bulb**. When the **switch** is turned on the **electrical** current flows through the **conducting** material.

Some materials let electricity pass through them easily, these are called **electrical conductors.** Metal is used in plugs to allow electricity to flow from the wall socket, through the plug, and into the **electrical** device, such as a toaster or television.

Electrical insulators do not allow electricity to flow though them. The plastic covering that surrounds the metal wires in a plug stops you from getting an **electrical** shock.

Key Vocabulary

Word	Definition
electrical	an item that uses electricity to work
conductor	a material that allows electricity to flow through it, e.g. metal
insulator	a material that does not allow electricity to flow through hit, e.g. plastic
battery	a cell that provides electrical energy to power a circuit
bulb	part of the circuit, made from plastic or glass, that gives out light when electricity passes through it
switch	part of the circuit that can be opened or closed to allow electricity flow
series circuit	a circuit where the electricity flows along one path