

# Knowledge Organiser Design & Technology Year 4 Spring

## Electrical Systems - Torches



St Elizabeth's Catholic Primary School  
"Love one another as I have loved you"

Battery	Two or more cells put together to provide electrical energy to power a circuit.
Bulb	A circuit part, made from glass or plastic, which gives out light when electricity passes through it.
Buzzer	A circuit part which will make a buzzing noise when electricity is passed through it.
Cell	A single unit that provides electrical energy to power a circuit.
Conductor	A material that allows electricity to flow through it. e.g. metal.
Copper	A reddish metal material that is good at letting heat and electricity flow through it. It is often used to make wires and pipes.
Design criteria	A set of rules to help designers focus their ideas and test the success of them.
Electrical item	Objects that need electricity to work such as hair dryers, toasters and kettles.
Electricity	A type of energy, that is usually invisible, that can be made or stored and used to make objects work (for example to move things or to heat them up).
Electronic item	Electrical items that have an element of computer processing in them such as mobile phones and laptops.
Insulator	A material that does not allow electricity to flow through it. e.g. plastic.
Series circuit	A closed circuit where the current follows one path.
Switch	A circuit part that you can open or close to allow electricity to flow through or to stop it flowing through. (For example, in a house, an electric light switch lets you turn the lights on or turn the lights off.)
Test	To find out whether something works as it should.
Torch	A battery-powered electric lamp.
Wire	A thin piece of copper thread which conducts electricity to connect circuit components together.

**Design** → **Make** → **Evaluate**

### Knowledge and skills covered in this topic

- ❑ Children will know what electrical conductors and insulators are.
- ❑ Children will know that there is electricity stored inside a battery that can power other products.
- ❑ Children will be able to identify all internal and external features of a torch.
- ❑ Children will be able to design a torch based on its use.
- ❑ Children will know how to create a working circuit with a switch.
- ❑ Children will know which appropriate materials should be used to make a torch.



### Prior knowledge

**Year 3:** Creating a game using static electricity. Understanding that electrostatic electricity can move isolated objects and objects in a circuit.