

Caroline Haslett Primary School - DT

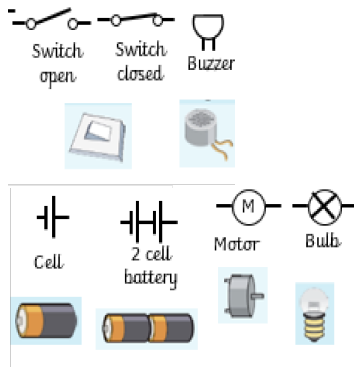
Topic: Electrical System

Year 4

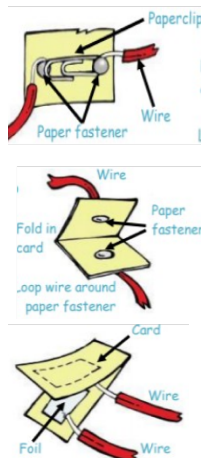
Simple electrical circuit

Knowledge

- Electricity is a type of energy.
- Thomas Edison invented the modern light bulb in 1879.
- Lots of tools use circuits with components including switches and bulbs to make light.
- Symbols are used to show electrical components.



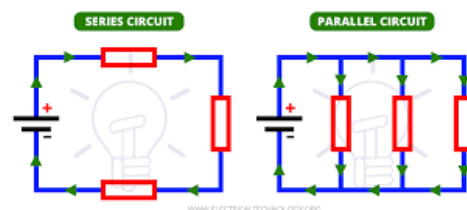
- There are different ways of making homemade switches.



Vocabulary

- **Insulator** - a material, which does not easily allow electricity to pass through it.
- **Conductor** - a material, which allows an electrical component to pass through it.
- **Circuit** - path through which electricity passes.
- **Component** -
- **Input device** - controls that are used to control an electrical circuit (switches).
- **Output device** - components that produce an outcome (bulbs, buzzers).
- **Parallel circuit** - A parallel circuit contains multiple pathways, or branches. Each device in a parallel circuit is on a separate branch. The current flowing through a parallel circuit divides as it reaches each branch.
- **Series circuit** - A series circuit is a simple pathway that lets electrons flow to one or more resistors.

DIFFERENCE BETWEEN SERIES & PARALLEL CIRCUIT

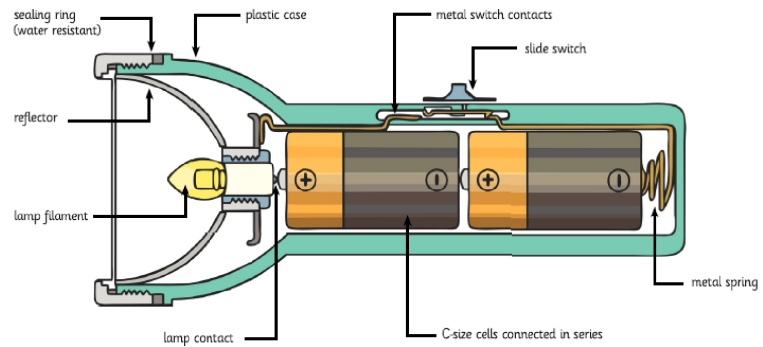


Design, make, evaluate

1. Research the discovery of electricity and invention of the light bulb.
2. Disassemble a torch and identify the circuit within. Experiment with making series and parallel circuits; identify which is best suited to light up a torch.
3. Design a battery operated light (torch) using an exploded diagram. Remember the torch must have a complete circuit for the product to give light.
4. Evaluate against design brief. Does the torch meet the requirements? If not, what improvements could be made next time?
 - Function - what does it do, how does it work?
 - Aesthetics - is it attractive, why and what makes it so?
 - Construction - what is it made from and how?

Skills

- Design using an exploded diagram to show the relationship or order of assembly parts.



- Disassemble products to see how they work.
- Apply appropriate cutting and shaping techniques (working safely) that include cuts or slot outs within the perimeter.
- Apply knowledge from science lessons. What makes a complete circuit? Which type of circuit is the most suitable for the purpose? Why?
- Make improvements and evaluate.