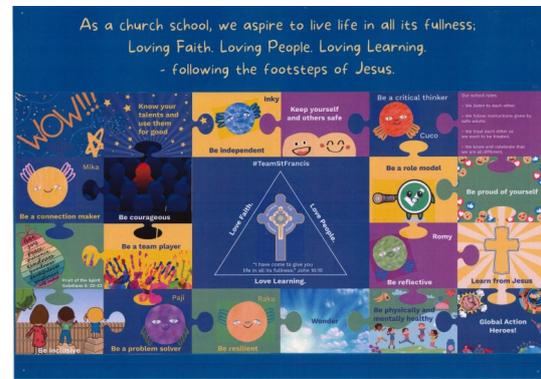




# Knowledge Organiser

## Year 6—Electricity

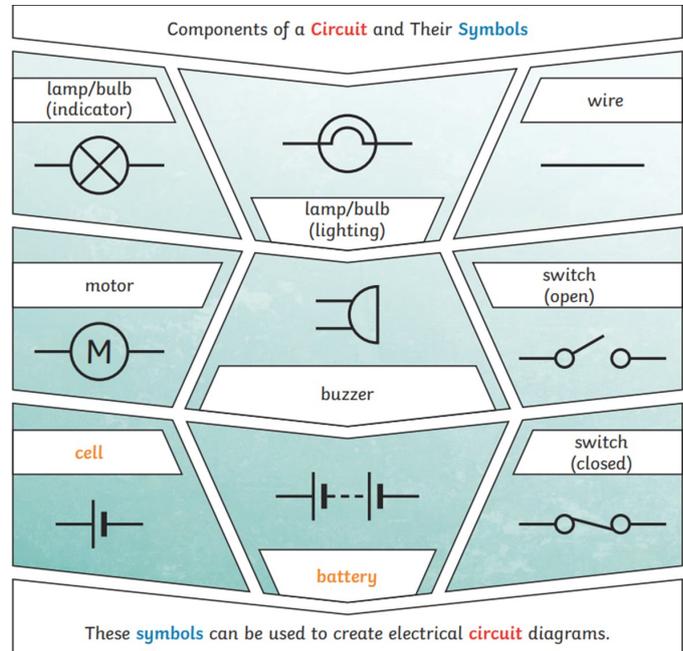
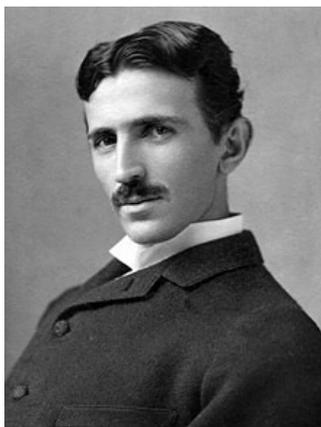
How can we use and interpret circuit diagrams?



Vocabulary	
Symbol	A symbol is a sign included in the idea

### Notable Scientist - Nikola Tesla

Nikola Tesla was a Serbian-American inventor, electrical engineer, mechanical engineer, and futurist best known for his contributions to the design of the modern alternating current (AC) electricity supply system. Born and raised in the Austrian Empire, Tesla studied engineering and physics in the 1870s without receiving a degree, gaining practical experience in the early 1880s working in telephony and at Continental Edison in the new electric power industry.



### What will I know by the end of the unit?

Use recognised symbols (at least: cells, wires, switches, bulbs, buzzers and motors) when representing a simple circuit in a diagram.  
Use/interpret circuit diagrams to construct a variety of more complex circuits predicting whether they will 'work'.

### Scientific skills and enquiry

Children might work scientifically by:  
Designing and making [Create / Invent / Design] a set of traffic lights, a burglar alarm or some other useful circuit.

## What should I already know?

Year 4 Autumn 2

Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.

Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.

Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.

Year 2 Summer 2

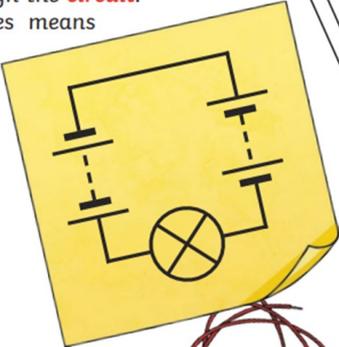
Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, water, rock, paper and cardboard for particular uses

Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (applying a force)

Some materials can be found naturally; others have to be made.

What will make a bulb brighter or a buzzer louder?

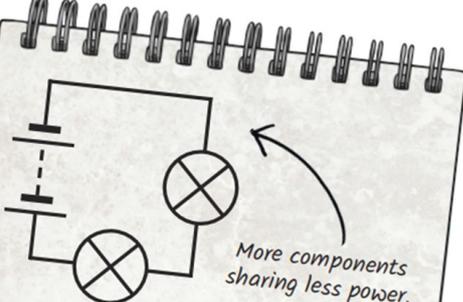
- More **batteries** or a higher **voltage** create more power to flow through the **circuit**.
- Shortening the wires means the **electrons** have less **resistance** to flow through.



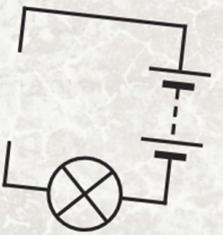
What will make a bulb dimmer or a buzzer quieter?

- Fewer **batteries** or a lower **voltage** give less power to the **circuit**.
- More buzzers or bulbs mean the power is shared by more components.
- Lengthening the wires means the **electrons** have to travel through more **resistance**.

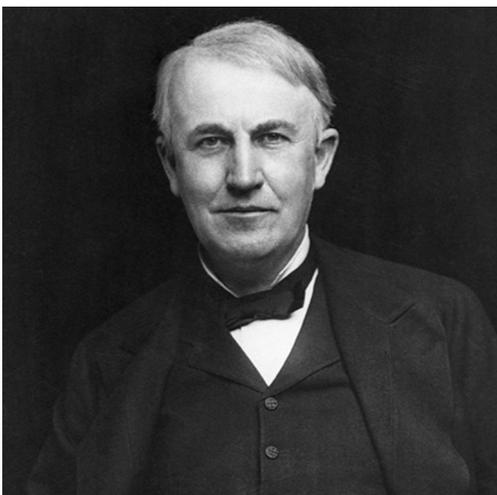
**Series Circuit**  
A **circuit** that has only one route for the **current** to take. If more bulbs or buzzers are added, the power has to be shared and so they will be dimmer or quieter. If just one part of this series **circuit** breaks, the **circuit** is broken and the flow of **current** stops.



More components sharing less power.



A broken **circuit** with no electrical **current**.



## Notable Scientist - Thomas Edison

Thomas Edison was an American inventor and businessman. He developed many devices in fields such as electric power generation, mass communication, sound recording and motion pictures. These inventions, which include the phonograph, the motion picture camera and early versions of the electric light bulb, have had a widespread impact on the modern industrialised world.