Year 6 Sticky Knowledge Mat: Electricity

EXCITING BOOKS/ RESOURCES:
Designing their own fairground ride using scientific knowledge.

Subject Specific Vocabulary

Component	Symbol	Purpose
Cell (Battery)		Provides electrical energy
Power supply		Alternative to using cells
Wire		Allows current to travel
Bulb/light		Converts electrical energy into heat and light
Motor		Converts electrical energy into movement energy
Buzzer		Converts electrical energy into sound energy
Switch		Allows circuit to be opened or closed

cells	An electrical cell is a device that is used to generate electricity, or one that is used to make chemical reactions possible by applying electricity.
conductor	Allows electricity to pass through. (metals, especially copper, iron and steel)
current	The flow of electricity through a circuit.
fuses	These are safety devices. A fuse is a strip of wire that melts and breaks an electric circuit if it goes over a safe level.
generator	A machine that converts energy into electricity.
insulator	Stops electricity passing through, e.g. plastic, wood, glass and rubber.
series circuits	A circuit which has only one path for electricity to flow through.
socket	A socket is a safe device to plug your electrical items into at home. Almost every room at home will have at least one socket.
volts	Voltage is a measure of how powerful a cell is.

Sticky Knowledge

Greater voltage = more powerful output (e.g. a bulb will be brighter, a buzzer will be louder)

Electricity is created by generators which can be powered by **non-renewable** sources (gas, coal, oil) or **renewable** sources (wind, solar, hydropower).

Electrical energy can be converted into other types of energy, such as light, heat, movement or sound.

Electricity is a type of energy. It can build up in one place (static electricity), or flow from one place to another (current electricity).

Electricity is dangerous. If you come into contact with an electrical current, you could get an electric shock which could be fatal.

Lightning is a form of electricity.

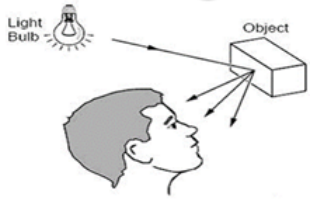
In 1879, Thomas Edison invented the kind of electric light bulb which we use today.

Previous learning-Year 4 Electricity

- identify common appliances that run on electricity
- 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 6 Sticky Knowledge Mat: Light

Exciting resources
'Fairground Rides' Torches



Sticky Knowledge about Light
Light travels in a straight line (in 'light waves') until it hits an object.
We see things because light travels from a light source to our eyes or from a light source to an object and then to our eyes Objects are seen because they either give out light or reflect other light into our eyes.
Light travels in straight lines and therefore shadows have the same shape as the objects that cast them.
Light is reflected off all surfaces. Smooth, shiny surfaces reflect light clearly and dull, rough surfaces scatter light in all directions.

Prior Learning (year 3)
- Recognise that they need light in order to see things and that dark is the absence of light - Notice that light is reflected from surfaces - Recognise that shadows are formed when the light from a light source is blocked by an opaque object.

Subject Specific Vocabulary	
light	A form of energy that travels in waves, like sound
light source	Something that produces light such as a torch, the sun, a candle
opaque	Not able to be seen through
reflection	When light bounces off an object.
shadow	A dark area where light is blocked by an opaque abject
translucent	Allows light but not detailed shapes to pass through (semi-transparent)
transparent	Can be clearly seen through
refraction*	When a light wave changes because it hits a different material (e.g. from air to water)