Knowledge organiser

Big idea:

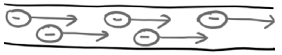
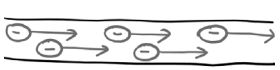
Y8 topic: **Electrical Energy**

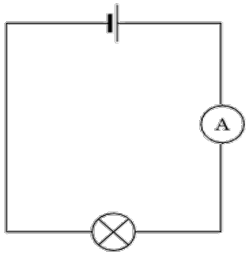
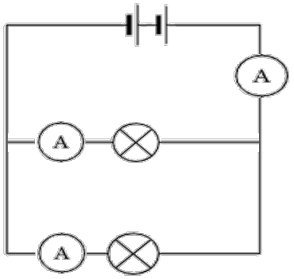
switch (open)	breaks circuit; stopping the current
switch (closed)	completes circuit; allows current to flow
cell	store of chemical energy
battery	two or more cells
resistor	fixed resistance reduces current
lamp	emits light
V voltmeter	measures potential difference
A ammeter	measures current

STATIC ELECTRICITY
Static charge – charge can build up on an insulated object.
When 2 insulators are rubbed together, electrons move from one object to another.
Object **loses electrons** – becomes **positively** charged Object **gains electrons** – becomes **negatively** charged

Electrostatic force – is a non contact force	**Same charge**	repel
	Opposite charge	attract

EQUATION
Potential difference = current x resistance

Key word	Definition	Low	High
current	Flow of charge (the speed of electrons). Measured in amps (A)		
potential difference	(often abbreviated to p.d.) Energy per electron . Measured in volts (V)		
resistance	The amount an object reduces the current. Measured in ohms (Ω)		
charge	The number of electrons. Measured in coulombs (C)		

	Series circuit	Parallel circuit
Diagram		
Description	• A single closed loop. • Electrons pass through every component in turn.	• Two or more closed loops.
Current rule	Current is same everywhere in the circuit	Add current in each loop and it will **EQUAL** the total current going into or out of the battery

Knowledge organiser

Big idea:

Y8 topic: electrical energy

I have already learned:

In KS2: about electrical circuits

This topic links to:
Y7 Energy intro

KS4 P2 electricity;

It is important to study about electrical energy because…
Electricity is our most useful form of energy. Energy is the amount of change that can happen. Most of the devices we use depend on electricity to work. To understand electricity we need to understand electrons and how quickly they are transferring electrical energy and how they travel around different circuits and components.

Possible careers involving electrical energy are…
Electrical engineer, electrical technician, Clinical scientist, medical physics, Lecturer, Research scientist, Teacher, Sound engineer….

ELECTRICAL ENERGY