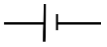
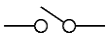
7J Current Electricity

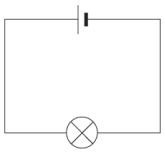
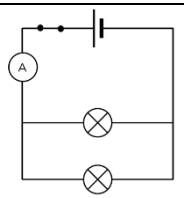
1. Switches and Current

Component	Something in a circuit.
Switch	Closing a switch completes the circuit allowing the current to flow.
Bulbs	Electricity flowing through makes the filament glow.
Current	The amount of electricity flowing around a circuit. Measured in amperes (A).
Current in a Series Circuit	Current is not used up as it goes around the circuit, it is the same everywhere.
Ammeter	Used to measure current.
	Cell circuit symbol
	Bulb circuit symbol
	Switch circuit symbol
	Ammeter circuit symbol

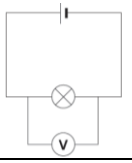
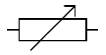
2. Models for Circuits

Models	A way of showing or representing something.
Advantages of Using Models	Allow us to help think about complicated ideas in science.
Charges	An electric current is a flow of charges carrying energy from the cells to the components.
Conductors	Charges can move through them easily (e.g. metals).
Insulators	Charges cannot move through them easily.

3. Series and Parallel Circuits

Series Circuit	A circuit with all the components in one loop.
Series Circuit Diagram	
Parallel Circuit	A circuit with branches that split apart and join again.
Parallel Circuit Diagram	
Parallel Circuit Advantages	Each bulb/component can be turned on individually. If one bulb/component breaks the components in other branches stay on (unlike a series circuit).
Current in a Parallel Circuit	The current splits when it reaches a branch. The current in all the branches add up to the current in the main part of the circuit.
Adding Bulbs	If you add bulbs into a series circuit the current gets smaller and the bulbs dimmer. In a parallel circuit if you add bulbs on different branches they stay bright.

4. Changing the Current

Voltage	A way of saying how much energy is transferred by electricity. The voltage of the cell helps push the charges around the circuit. Measured in volts (V).
Voltmeter	Used to measure voltage.
Connecting a Voltmeter	Voltmeters are connected across a component. 
Voltage in a Series Circuit	The voltage across all the components adds up the voltage across the cell.
Resistance	How difficult it is for electricity to flow through something.
Resistor	A component that makes it difficult for electricity to flow- reduces size of current.
	Voltmeter circuit symbol
	Resistor circuit symbol
	Variable resistor circuit symbol