

A decorative graphic on the left side of the slide, consisting of a network of white lines and circles on a teal background, resembling a circuit board or a tree structure.

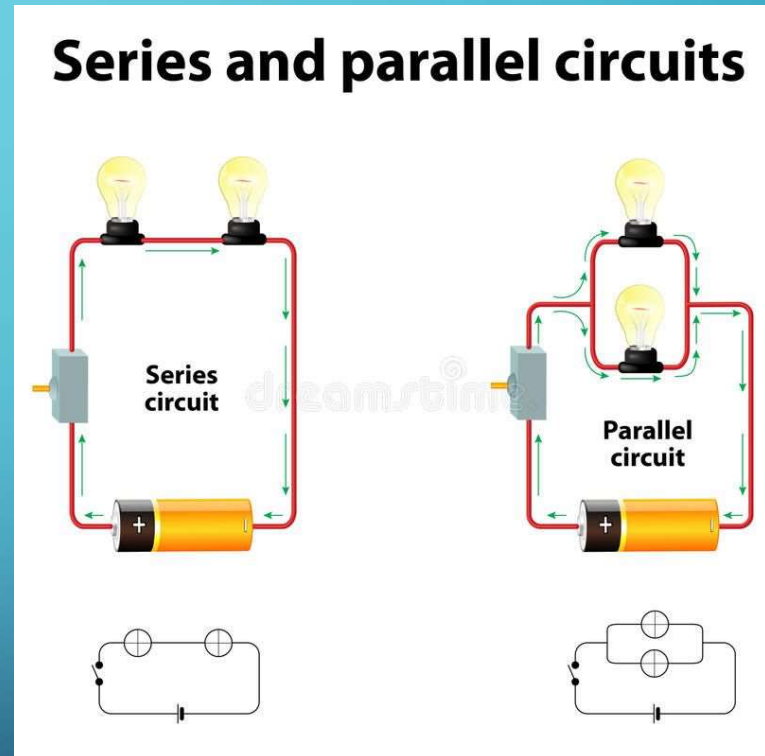
PHYSICS V

SERIES CIRCUITS

PARALLEL CIRCUITS

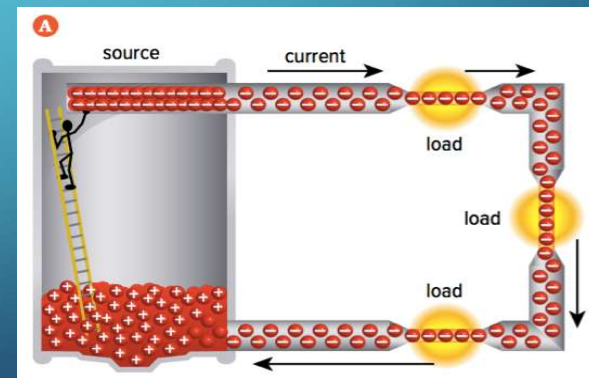
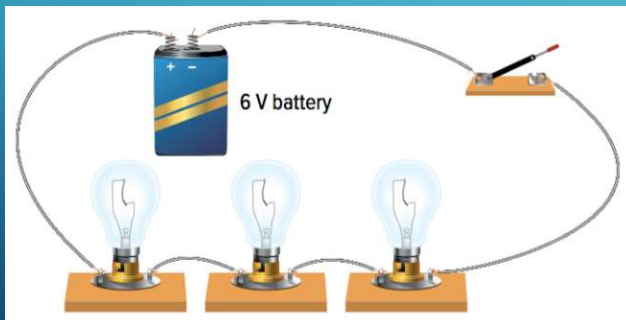
CIRCUITS

- There are many different ways in which components in a circuit can be connected together. The two main types of circuits we can build are a series and a parallel circuit.



SERIES CIRCUITS

- A series circuit is a circuit that allows the current to flow on only one pathway.
- As there is only one path that current can flow, the current remains the same no matter where you measure on the circuit.

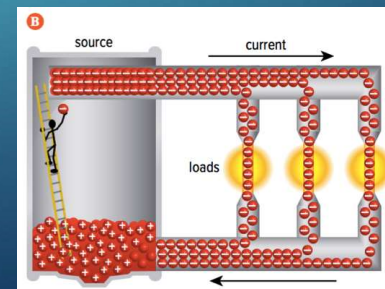


SERIES CIRCUITS

- The voltage provided by the battery is shared between all of the loads that are connected in the circuit. This will result in less voltage going across each of the individual loads.
 - Example: Adding more lights into the circuit will result in less brightness across each of the bulbs because there is less voltage provided for each light.
- If one part of the circuit is broken or incomplete, this will result in the entire circuit not working.

PARALLEL CIRCUIT

- A parallel circuit is a circuit that contains multiple pathways for the current to flow.
- The current splits into many parts which means that the current is reduced in each of the paths.
- The total amount of current leaving and entering the battery will remain the same.

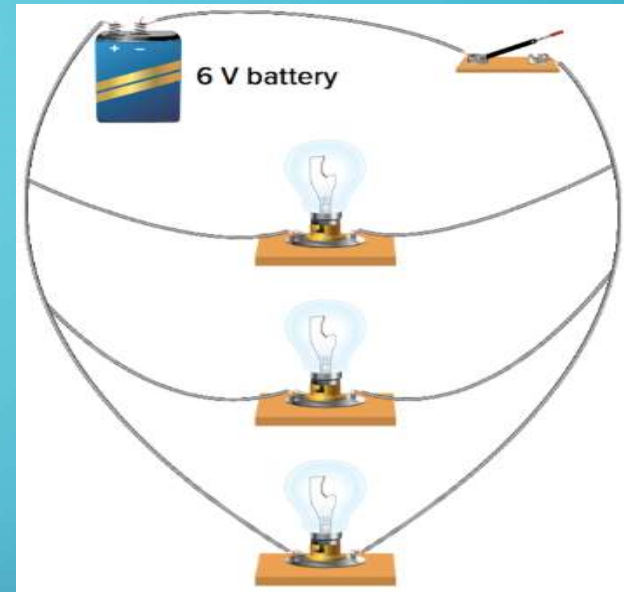


PARALLEL CIRCUITS

- The voltage provided by the battery is not shared across all of the loads. This will mean, the amount of voltage going across each load will be the same.
 - Example: adding more lights into the circuit in parallel will not change the brightness of the bulbs because the amount of voltage does not change
- If one part of the circuit is broken or incomplete, the circuit can still continue to work as there will be other closed pathways for the current to travel.

PARALLEL CIRCUITS

- Parallel loads can be commonly found in homes and buildings as individual switches can be added to each load in order to control what load is on and/or off



In the above figure:

- The battery and switch are connected in series
- The light bulbs (loads) are connected in parallel

IN SUMMARY...

	Series	Parallel
Definition	A circuit with ONE pathway for electrons to flow	A circuit with MULTIPLE PATHWAYS for electrons to flow
Voltage (volts)	\uparrow source = \uparrow voltage \uparrow loads = \downarrow voltage	Stays the same
Current (amps)	Stays the same	Reduced at each junction
Memory Aid	SASS “Series Amps Stay the Same”	PVSS “Parallel Voltage Stays the Same”

NOTE...

- Voltmeters are always connected in parallel with respect to the object that it is measuring
- Ammeters are always connected in series to the circuit