

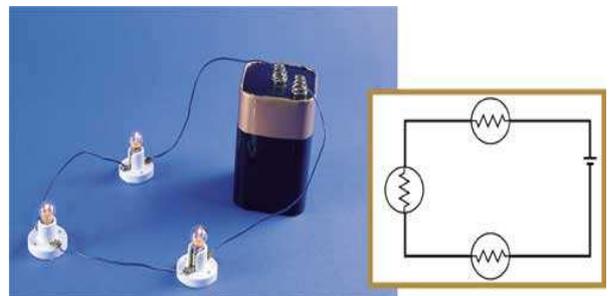
SERIES AND PARALLEL CIRCUITS

ELECTRIC CIRCUITS

- An electric circuit provides a complete, closed path for an electric current.
- Electricity can only flow through a closed circuit; it **cannot** flow through an open circuit.
- Every circuit MUST have the following parts:
 1. energy source: battery, electric generator, etc.
 2. load or resistance: device that uses the electric energy
 3. wires
 4. switch: opens and closes the circuit

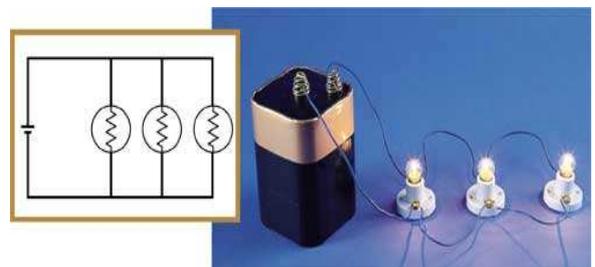
SERIES CIRCUIT

- All parts are connected one after another.
- **If one part fails to operate properly, the current can not flow to the other parts.**



PARALLEL CIRCUIT

- Different parts of circuit are on different branches.
- **If one part does not operate properly, current can still flow through the others.**

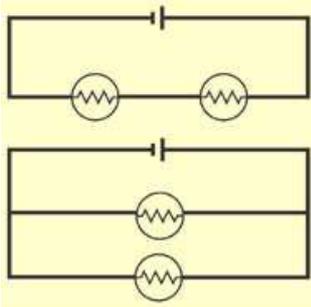


FILL IN THE CHART WITH THE PHRASES:

	SERIES CIRCUIT	PARALLEL CIRCUIT
Definition		
Paths		
Resistance		
Examples		

USE THESE TO FILL IN TABLE:

- home circuits one path device and switch
- all parts connected in a row several paths decreased with added branches
- different paths on separate branches increases with added branches



1. What happened to the remaining light bulbs when you unscrewed the first bulb?

FOR A _____

FOR B _____

2. Explain WHY this happened. _____

3. Which circuit is a series circuit? (1 or 2) _____

4. Which circuit is a parallel circuit? (1 or 2) _____

How many paths can electricity take in Circuit 1? _____

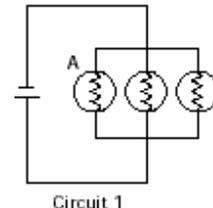
How many paths can electricity take in Circuit 2? _____

If bulb A burns out, what happens to the light in the other two bulbs in that circuit?

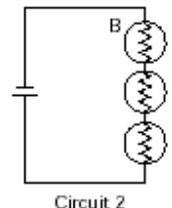
If bulb B burns out, what happens to the light in the other two bulbs in that circuit?

If a fourth bulb were added in a similar way to the three existing bulbs in Circuit 1, what would happen to the resistance in the circuit?

If a fourth bulb were added in a similar way to the three existing bulbs in Circuit 2, what would happen to the resistance in the circuit?



Circuit 1



Circuit 2

REVIEW OF VOLTAGE, CURRENT, AND RESISTANCE: Write **I** for current, **V** for voltage, and **R** for resistance.

11. _____ Measured in amperes

12. _____ Measured in ohms

13. _____ A flow of charge

14. _____ Depends on length and width of a wire

15. _____ The rate at which charge passes a given point

16. _____ Measured in volts

17. _____ Describes potential difference

18. _____ Opposition to the flow of electric charge.