



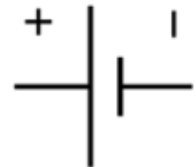
# Basic Circuit - Requirements



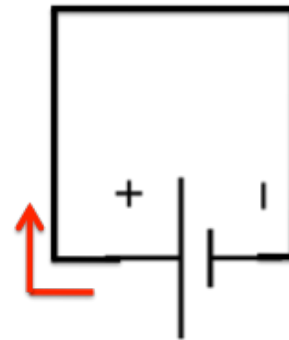
- Electromotive force (emf) - Source of 'voltage' or  $\Delta V$ 
  - ▶ Causes charges to flow
  - ▶ 'Voltage' – electric potential energy per unit charge



▶ Symbol within a Circuit:



- ▶ Circuits must be CLOSED to operate.
- ▶ **\*Conventional Current:**  
Traces the 'movement' of **positive** charges



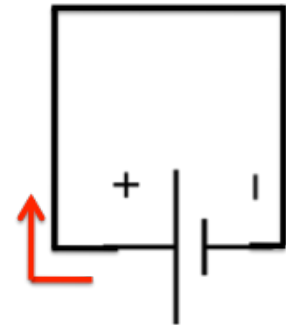
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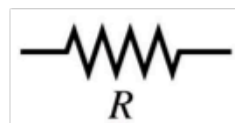
- **Electric Current (I)** - Flow of electric charge

$$I = \frac{|\Delta q|}{\Delta t}$$

▶ SI Units:  $\frac{\text{Coulomb}}{\text{Second}} = \text{Ampere (A)}$



- ▶ Direct Current (DC)
- ▶ Alternating Current (AC)
- Something to power....source of **Resistance (R)**
- Resists or takes away from the electrical current



SI Unit: Ohm ( $\Omega$ )

# Reading Resistors



- To find the resistance value of a resistor:

