SPH3U 11.3 Electric Potential Difference

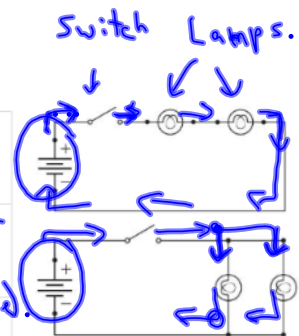### 1. Electric potential difference

Electric potential:	potential energy from electrons packed together.
Electric potential difference:	change in electric potential between 2 points.
equation	$V = \dfrac{\Delta E}{Q}$, Units: V (Volts).
Quantity of electrons:	Q, # of electrons, (amount of charge). Units: C (Coulomb)

Calculate the electric potential difference between the negative and positive terminals of a battery if 1500 J of electric potential energy is transformed to move 125 C of charge between the terminals.
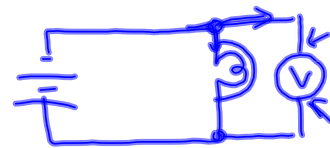
$$V = \frac{\Delta E}{Q} = \frac{1500 \text{ J}}{125 \text{ C}} = \underline{\underline{12.0 \text{ V}}}.$$

2. Series and parallel circuits

Series circuit:	a circuit with only 1 complete path.
Parallel circuit:	a circuit with more than 1 complete path.
Voltmeter:	used to measure V (potential difference). must be connected in parallel.

Switch   Lamps.

Part of circuit	Circuit symbol				
battery	+ ‖ −	resistor	—⋀⋀⋀—	motor	—(M)—
variable DC power supply	+(S)−	lamp	—(◯)—	open switch	—⚬ ⚬—
		connecting wire	————	closed switch	—⚬—⚬—

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