More Electricity Units

Review

Energy – J (Joules)

Power – W (Watts) (rate)

1 W = 1 J/s

---

electricity = moving electrons

→ are very small
+ Many, Many, Many move in a wire!!

So we need a massive unit for a group of electrons.

a "coulomb" of electrons

1 coulomb = 6.24×10^{18} electrons

that's 6240000000000000000!

1 C = 6.24×10^{18} electrons

Current ⇒ Ampère (A)
(I) (Amps)

1 A = 1 coulomb/sec

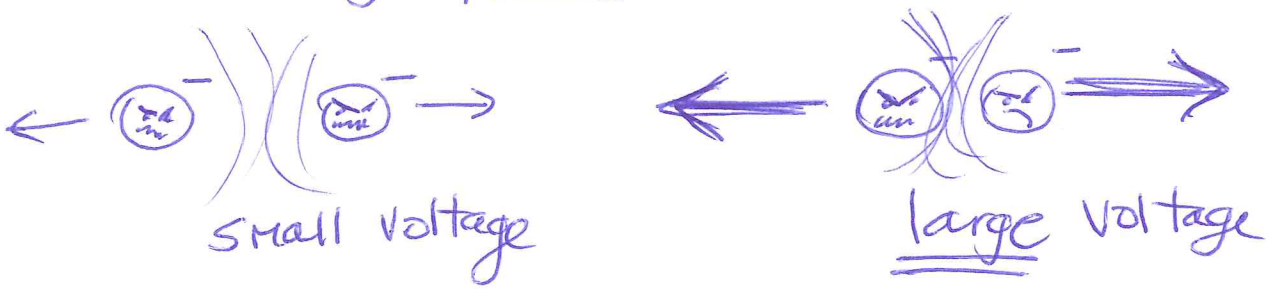
1 A = 1 C/s

Voltage ⇒ Volts
(V) (V)

1 V = 1 J/C

or 1 coulomb of electrons has 1 Joule of energy (to do work!)

Voltage pushes electrons



small voltage

large voltage

Resistance ⇒ ohms
(R) (Ω)

resistance slows electrons' flow.

All loads have resistance
electrons slow do + do work for us in loads