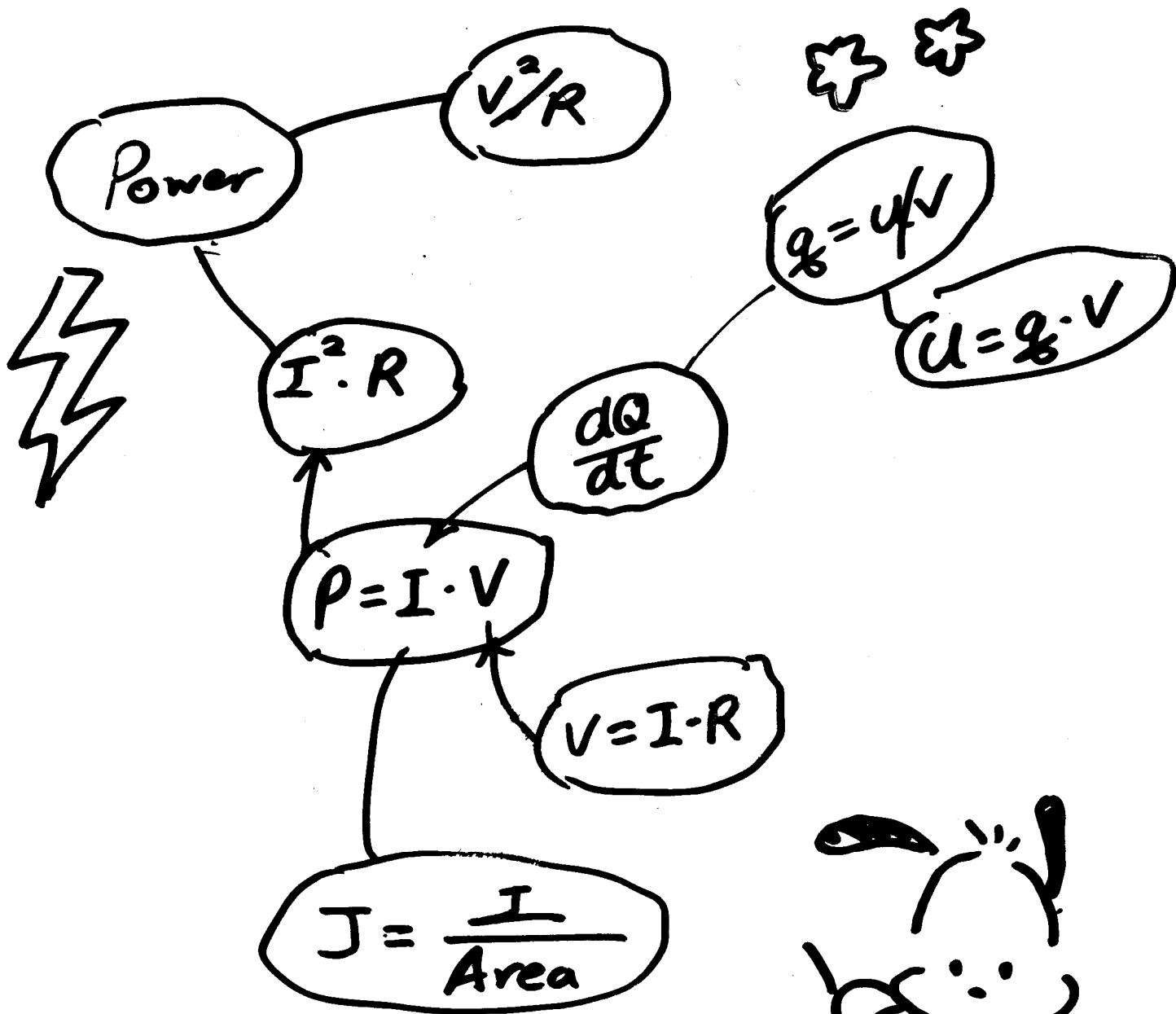


- Wardo, Joe, Mike, Howie, Kevin



$P = \text{Power (J)}$        $R = \text{Resistance (}\Omega\text{)}$   
 $I = \text{Current (amp)}$        $u = \text{Work}$   
 $v = \text{Voltage (V)}$        $J = \text{Current density}$

$$P = \frac{dU}{dt}$$
$$\Delta U = qV$$

$$I = \frac{dQ}{dt}$$
$$I = nq v_d \cdot A$$

$$J = I / \text{area}$$
$$J = \sigma \vec{E}$$
$$J = nq v_d$$

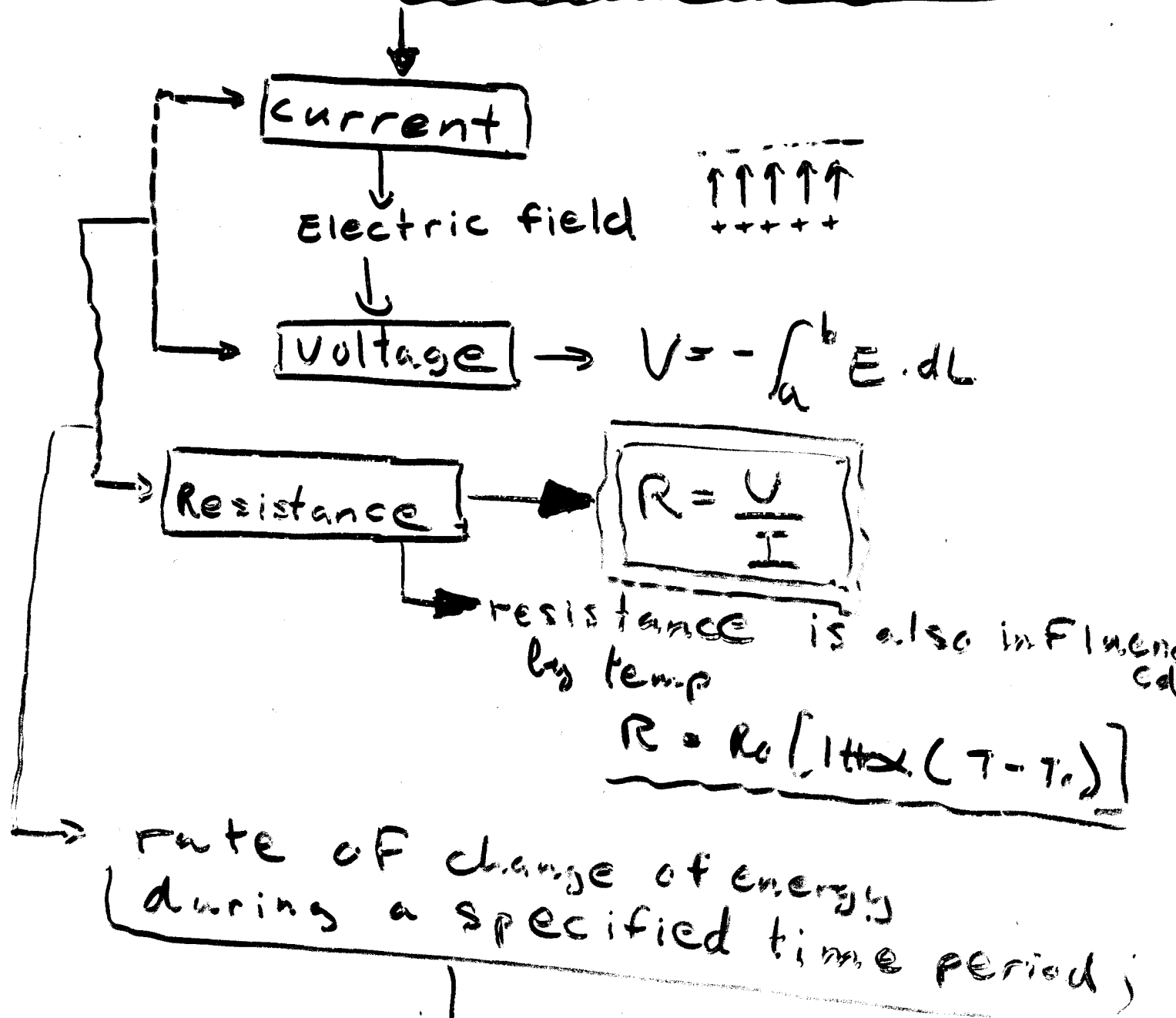
$$P = IV$$

$$V = IR$$

$$V = - \int_a^b E \cdot dl$$
$$V = V_b - V_a$$
$$V = El$$

$$R = R_0 [1 + \alpha(T - T_0)]$$
$$R = \frac{l}{A\sigma} = \rho \frac{l}{A}$$
$$\rho = \frac{1}{\sigma}$$

# Flow of charge w.r.t Time



## POWER

$$P = IV \quad \text{or} \quad \frac{V^2}{R} \quad \text{or} \quad I^2 R$$



