"He's our power hitter — but only on sunny days."

EECS 16A
Power and Voltage/Current Measurement
Previously on 16A......

NVA - ① Identify nodes
② Choose a ground
③ Label all elements (currents + voltages) & node potentials
④ KCL
⑤ Ohm’s Law
⑥ Current / Voltage sources
⑦ Set up $A\overrightarrow{x} = \overrightarrow{b}$ and solve
Previously on 16A......

Voltage Divider

\[ u_2 = \frac{R_2}{R_1 + R_2} V_s \]
\[ u_2 = \frac{1}{\frac{R_1}{R_2} + 1} V_s \]
\[ u_2 = \frac{1}{\alpha + 1} V_s \]
Energy and Power

Current - Rate of flow of charge
How to think about Energy and Power in circuits?
Power in Circuits Example
Power in Circuits Example
How to measure voltage? with a Voltmeter
Ideal
How to measure current? with an Ammeter
ideal
Resistivity
Analogy
Resistivity (Example)

\[ \rho_{\text{Cu}} = 1.72 \times 10^{-8} \, \Omega \cdot m \]

\[ l = 5 \, \text{cm} \quad A = 5 \, \text{cm}^2 \]

\[ \rho_{\text{wood}} = 10^{14} \, \Omega \cdot m \]
Resistive Touchscreen Design
1D Resistive Touchscreen (Approach)
1D Resistive Touchscreen (Basic Model)