



Student directions [Capacitor Lab](#): Inquiry into Capacitor Design

Learning Goals:

Students will be able to:

- Identify the variables that affect the capacitance and how each affects the capacitance.
- Determine the relationships between charge, voltage, and stored energy for a capacitor.
- Relate the design of the capacitor system to its ability to store energy.

Directions:

1. Using the first 2 tabs , **voltmeter**, and **battery**, find variables that are used to design a capacitor.
2. Identify what you would maximize or minimize to make a capacitor with the greatest capacitance. Are there items in the sim that do not appear to affect the capacitance?
3. Using the first 2 tabs , **voltmeter**, and **battery**, explore the relationships between charge, voltage, and stored energy for a capacitor. Summarize your findings.
4. If you wanted to design a capacitor system to store the greatest energy, what would you use?