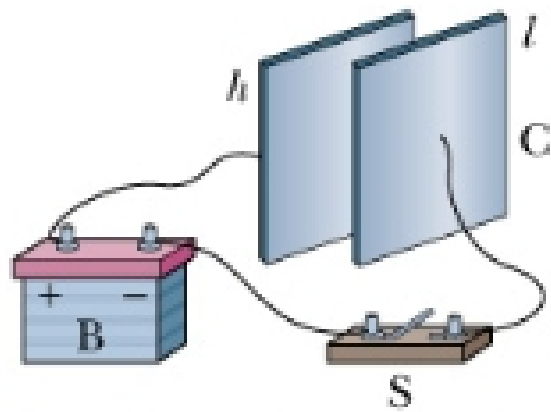
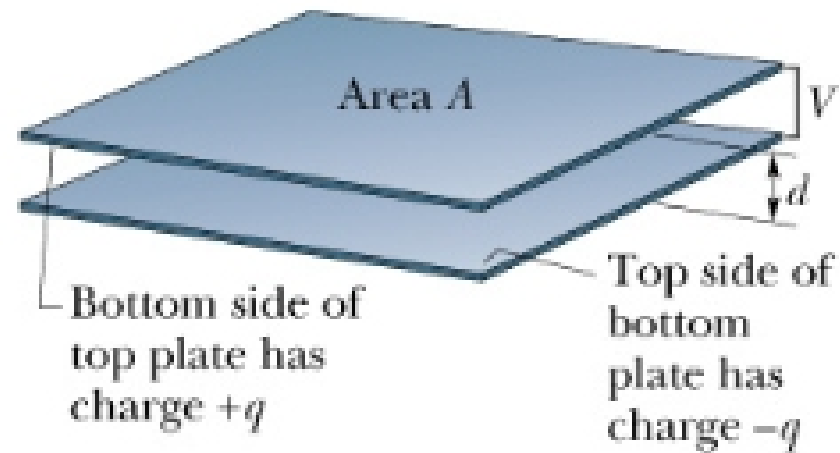


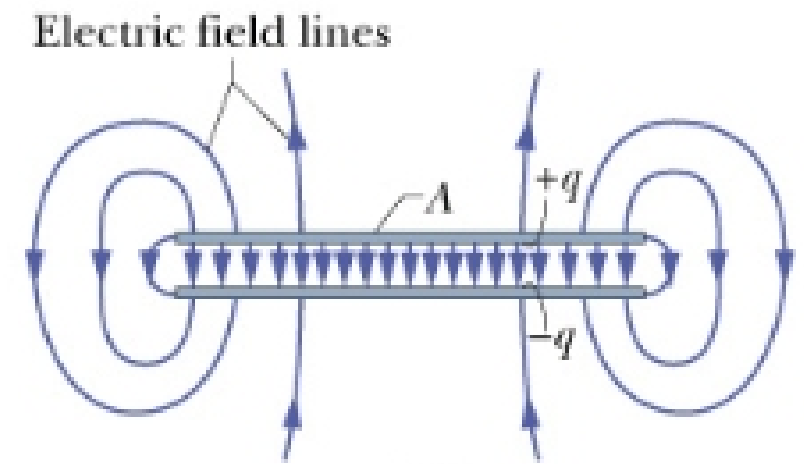
Capacitance



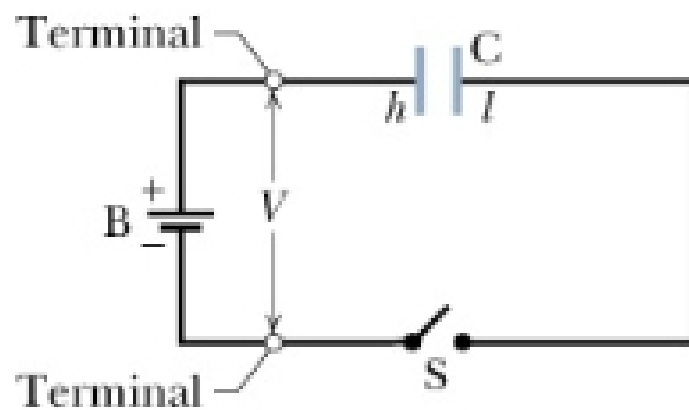
(a)



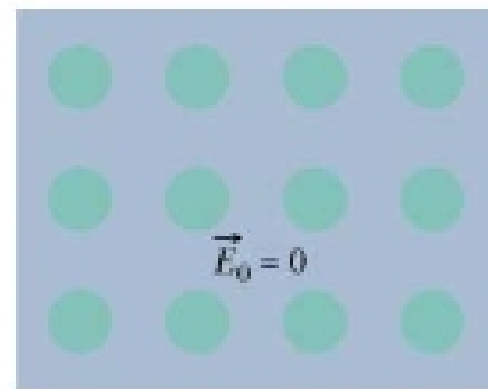
(a)



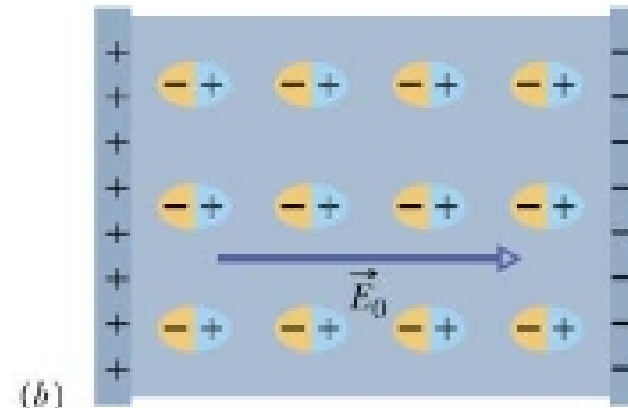
(b)



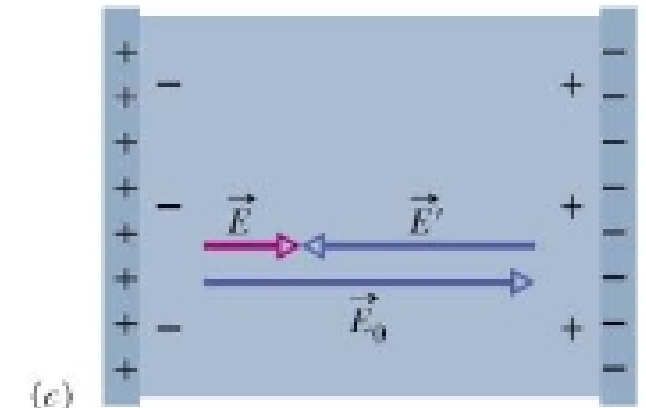
(b)



(a)



(b)



(c)

Purpose of Capacitors

→ Storage of charge: $Q = CV$

◆ Used in DC and AC circuits

→ Storage of energy

◆ Can provide energy to circuits

→ Used in DC and AC circuits

◆ Timing in DC circuits

◆ Resonance in AC circuits

◆ (Later in course)

$$U = \frac{Q^2}{2C} = \frac{1}{2}CV^2$$

Capacitors in Parallel

→ $V_1 = V_2 = V_3$ (same potential top and bottom)

→ Total charge: $q_{\text{tot}} = q_1 + q_2 + q_3$

→ $C_{\text{eq}}V = C_1V + C_2V + C_3V$

$$C_{\text{eq}} = C_1 + C_2 + C_3$$

- **Basic law for combining capacitors in parallel**
- **Works for N capacitors**

