before dielectric is inserted into gap and circuit
node 0, the capacitance is equal to the
voltage of the battery and the capacitance is

\[ Q = CV \quad \text{and} \quad V = \text{volts of battery}. \]

When the battery is removed the charge remains
the same on the capacitor. (Technically the charge
slowly leaks off.)

The insertion of a dielectric material (K = dielectric constant
of material) will reduce the electric field and the
potential of the capacitor by \( \frac{1}{K} \), thus \( V' = \frac{V}{K} \)

and \( C' = CK \). \( \text{for} \quad Q' = Q \).

The voltmeter should read the new value of \( V' \)
and the ammeter should remain the same
since there is no electric current
flowing through the circuit once the circuit is
interrupted.