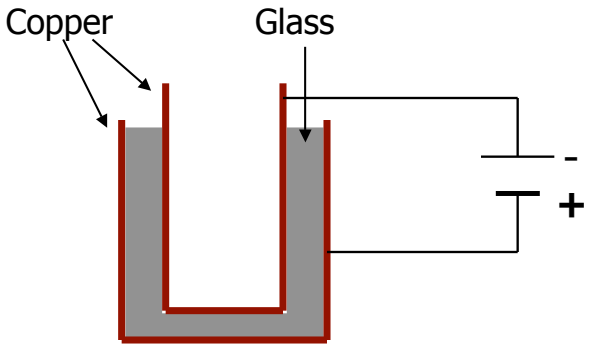
'Puzzle' Demo

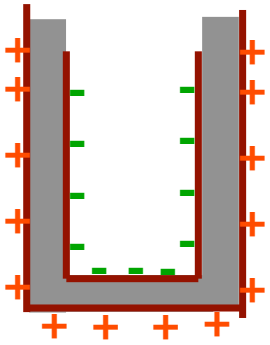


'Puzzle' Demo

- Where does the charge sit for second spark?

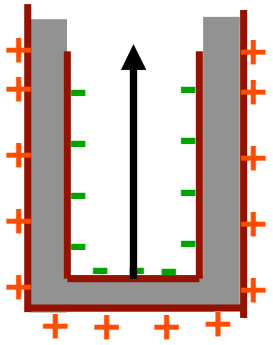
'Puzzle' Demo

Start with charged capacitor



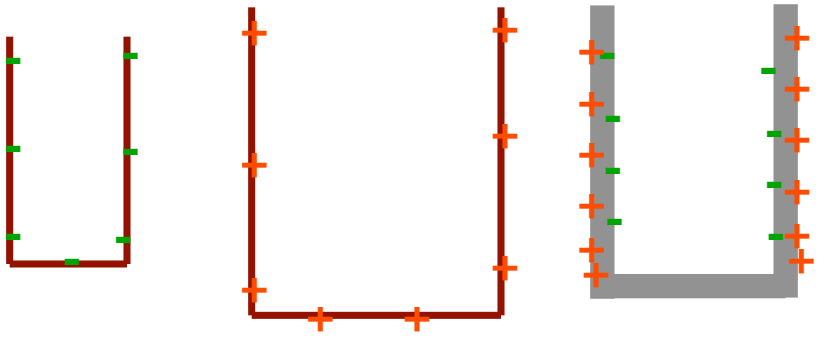
'Puzzle' Demo

Disassemble capacitor



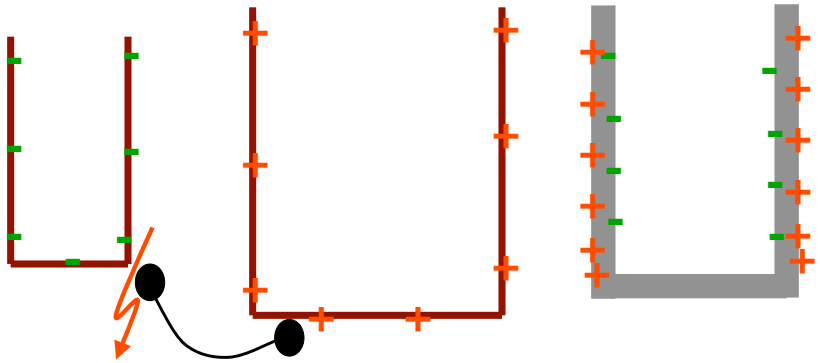
'Puzzle' Demo

Some charge gets 'left behind' on glass

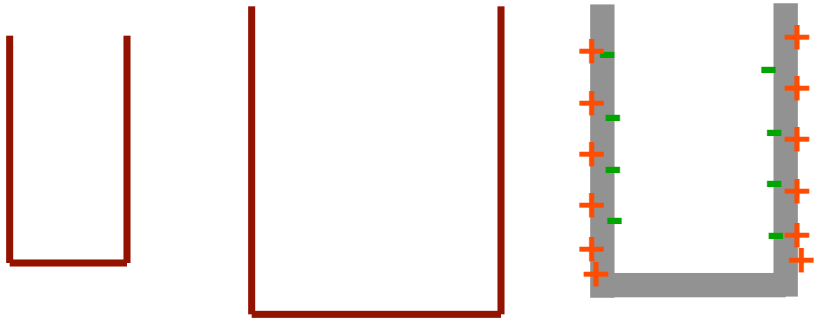


'Puzzle' Demo

Discharge conductors

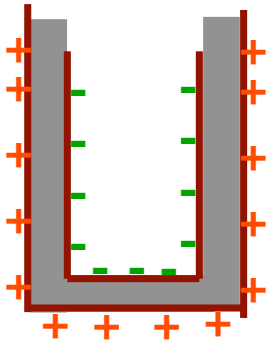


'Puzzle' Demo



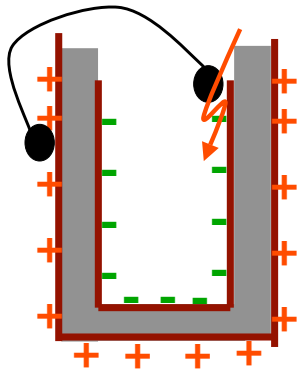
'Puzzle' Demo

Re-assemble capacitor



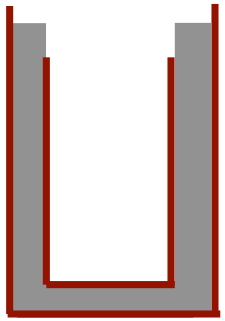
'Puzzle' Demo

Discharge capacitor

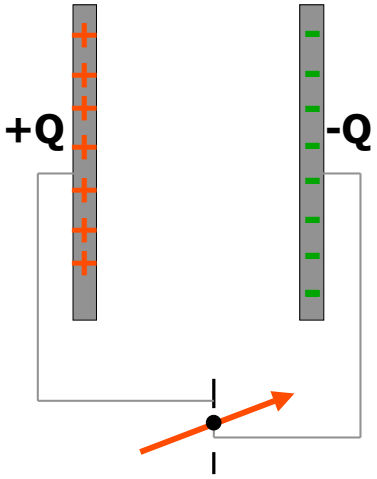


'Puzzle' Demo

Done…

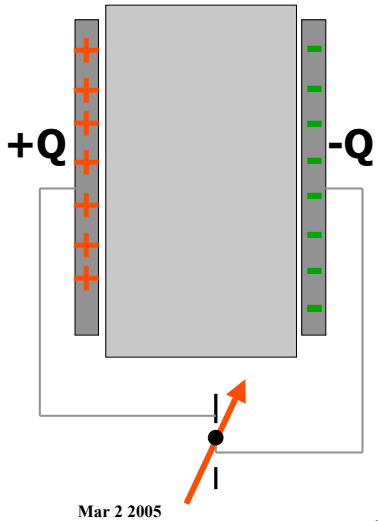


Dielectric Demo



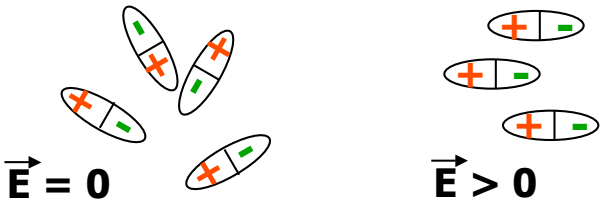
- Start w/ charged capacitor
- **d** big -> **C** small -> **V** large

Dielectric Demo

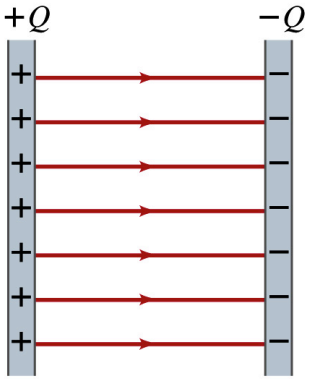


- Start w/ charged capacitor
- **d** big -> **C** small -> **V** large
- Insert Glass plate
- Now **V** much smaller
- **C** bigger
- But **A** and **d** unchanged !
- Glass is a **Dielectric**

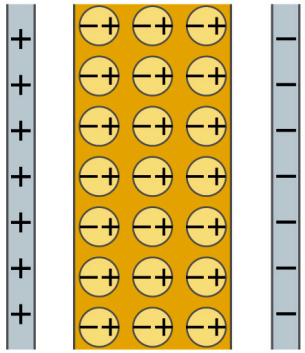
Microscopic view



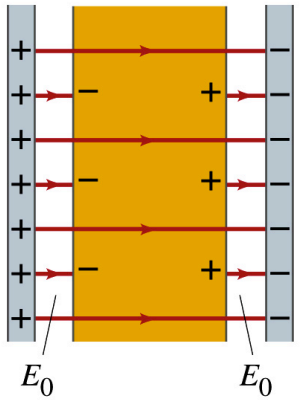
Polarization



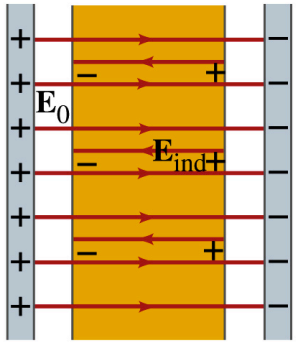
(a)



(b)



(c)



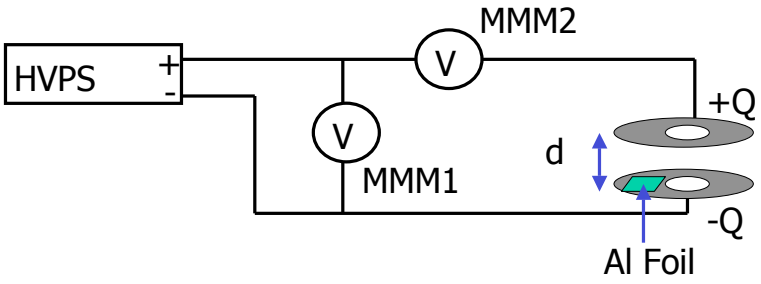
(d)

Dielectric Constant

- Examples

Material	K
Vacuum	1
Air	1.0006
Plexiglass	3.4
Water	80.4
Ethanol	23
Ceramics	~5000
Glass	5-10

Experiment EF



EF Experiment