

Intro to Capacitors

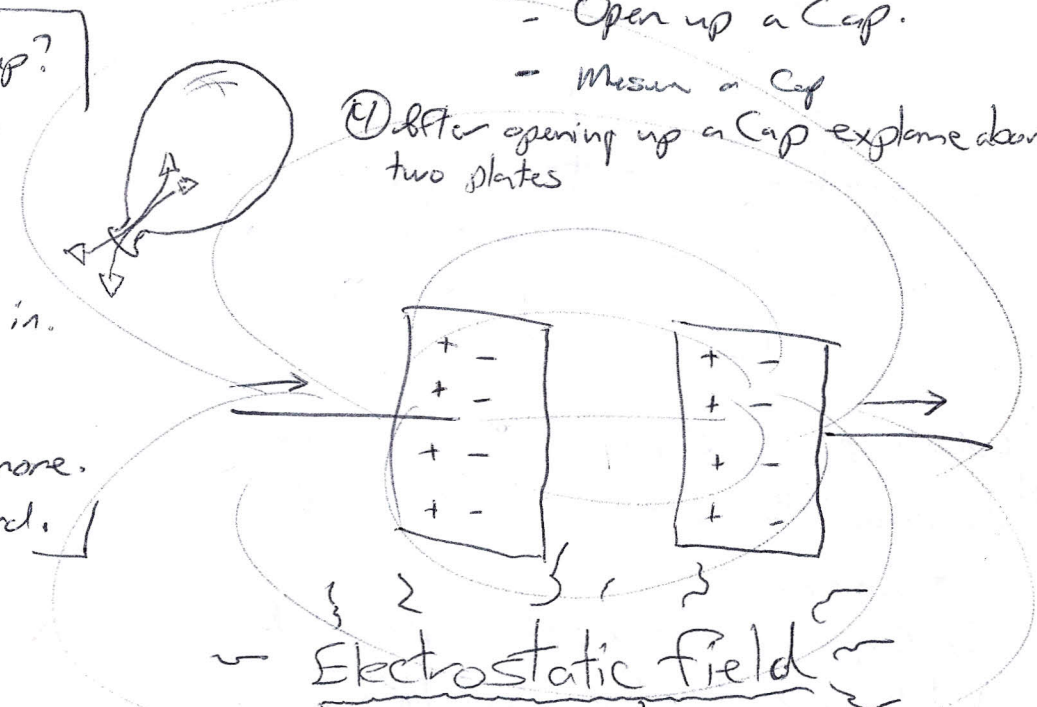
- ① Ask for the 2 Biggest Clowns in the class to come to the front. Give them each a balloon. Have ^{one} ~~them~~ blow it up and let it go. Have the other keep blowing until it pops (if he can)



③ Activities

- Charge a Cap & Light an LED
- Blow up a Cap.
- Open up a Cap.
- Measure a Cap

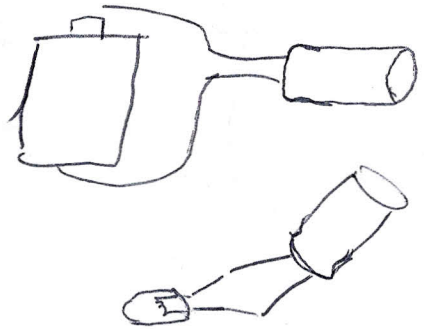
④ After opening up a Cap explain about the two plates



Ask / Discuss

- Where does the air go when blowing it up?
 - o In to the balloon
- Where does the air around the balloon go?
 - o It's Pushed away
- What happens when you let it go?
 - o All the air leaves out the way it came in.
- What happens if you keep on blowing?
 - o Gets bigger until you can't blow any more. and it may pop if you blow too hard.

② This is how a Capacitor works.



- o A Capacitor will charge and let current flow until it is fully charged.
- o It will hold its charge until you let the pressure out.
- o If you put too much charge on it, it will blow up.

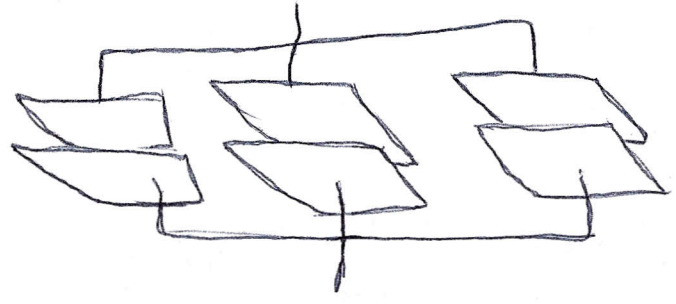
⑤ Some of the factors that determine a

Caps Capacitance

- Size of the plates (ask why.)

- The distance between the plates

- the material used.



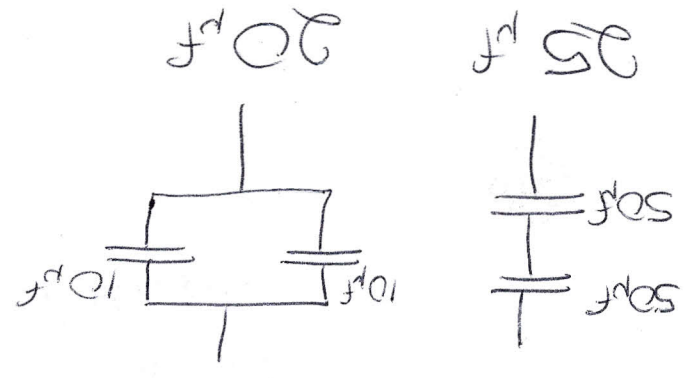
⑥

would placing caps in parallel increase or decrease the surface area of the plates?

Increases

So capacitance is added in parallel
Just the opposite of a resistor.

⑦ Practice Problems



⑧

Assume

15 pF

15 pF

7.5 pF

6 pF

55 pF

44 pF

178 pF

30 pF

10 pF

20 pF

5.45 pF

