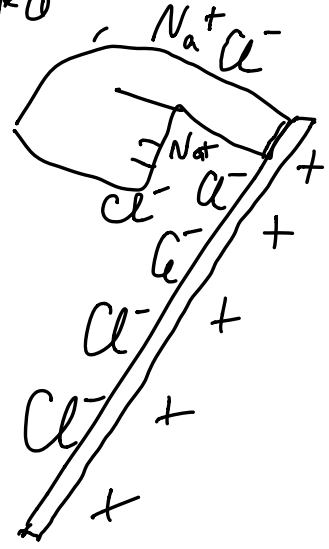
- Lecture Outline:
- Review some clicker questions
- Charging/discharging an insulator
- Charging a conductor:
  - By contact
  - Electroscope
  - Discharge by contact
- Charge by induction

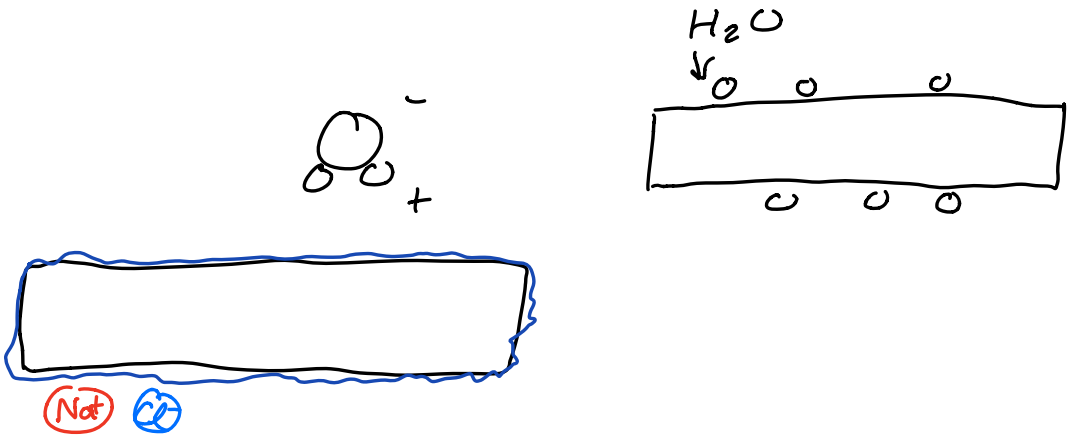
- Charging an insulator (review):
  - Many points of contact
  - Transfer of electrons from one object to another
  - Charges stay put
- How do I *discharge* an insulator?

Do tape demo

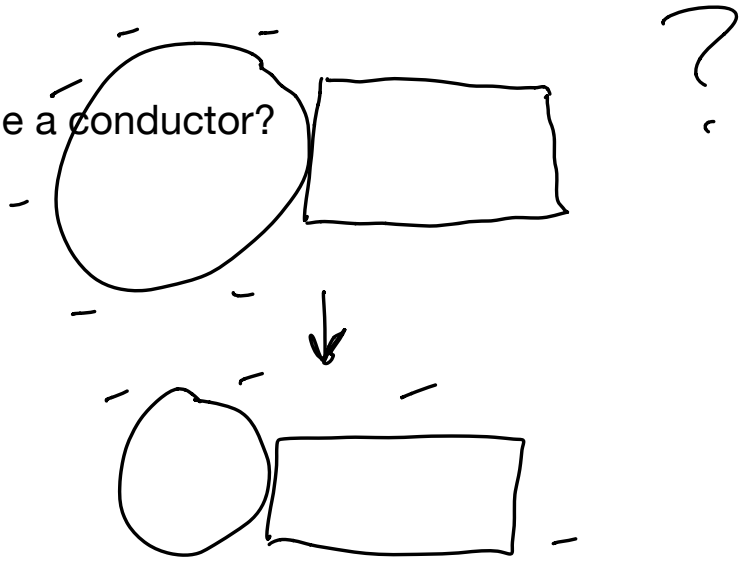
What happened?



- Another example: humidity discharges an insulator

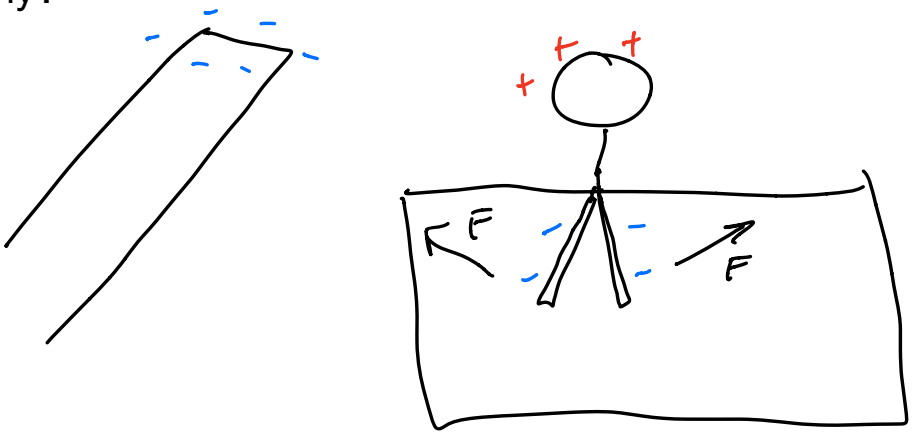


- Conductors:
  - How do I charge a conductor?
  - By contact



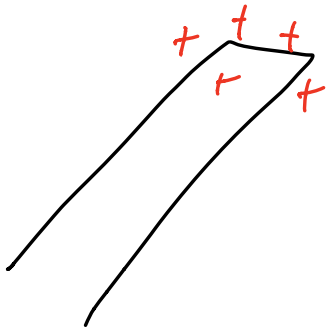
- Electroscope demo 1 (charge by contact)
  - Fur + PVC and touch to electroscope
  - What happened? (They repelled) Why?
  - Now touch and discharge
  - What happened? (Excess charge on the scope evacuated and is spread over my body)
- So we can discharge conductors by contact
  - Grounding (touch charged conductor to very large conductor, charge spreads out and is negligible)w

- Electroscope demo 2 (charge motion neg and pos)
  - Fur + PVC and touch to electroscope
  - Glass + Silk and hold near electroscope
  - What happened?
    - Needles lowered a bit
    - But I didn't touch anything?
    - Some of the excess negative charge went upward toward the positive charge
- Electroscope demo 3 (charge motion neutral and charged)
  - Fur + PVC and hold near electroscope
  - What happened? (Needles repelled)
  - Why?



- Electroscope demo 4 (charge by induction)
  - Silk + PVC and hold near
  - While holding near, touch and remove finger
  - Remove rod
  - What happened?
    - (May be hard to notice)
    - Somehow the electroscope became charged

1)



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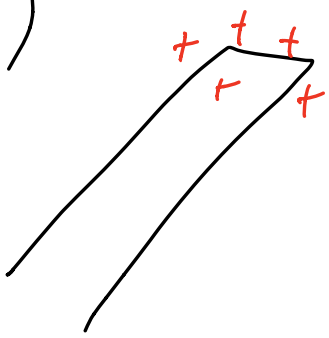

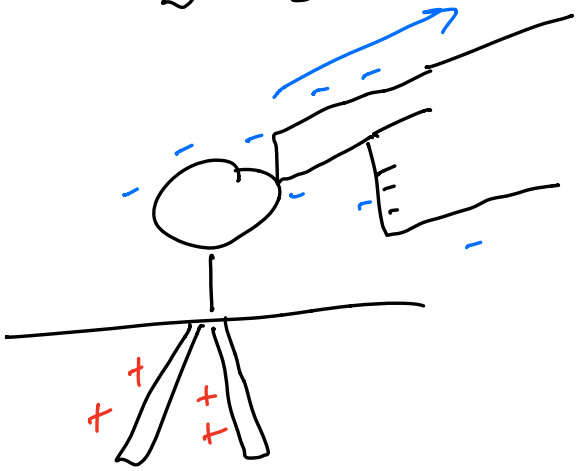

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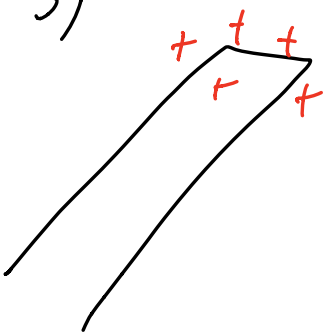

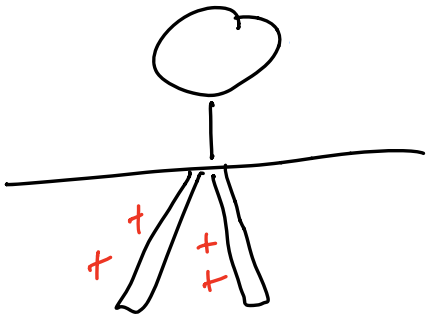

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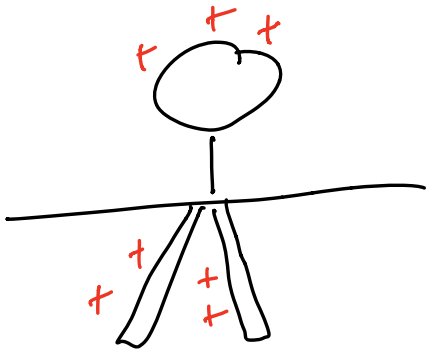

Charge By

Induction