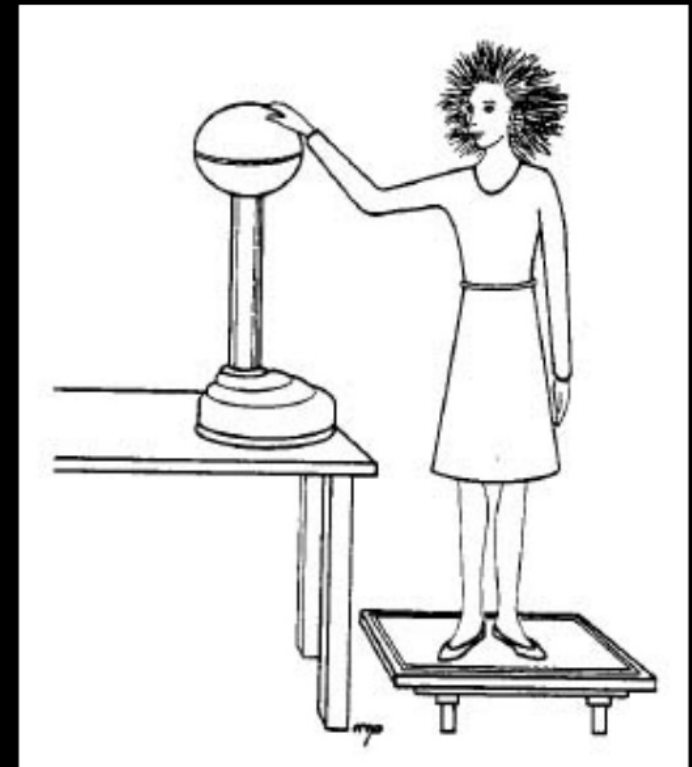


2.4.20

Electricity: Methods of Charging, Statics Problems

Today's Objectives:

- Learn the methods of charging
- Solve 2 object statics problems
- Solve multi-object static questions
- Use the Van der Graaf generator :)



• Methods of Charging: (Ways to make a neutral + or -) :

1) Friction (opposite charge)

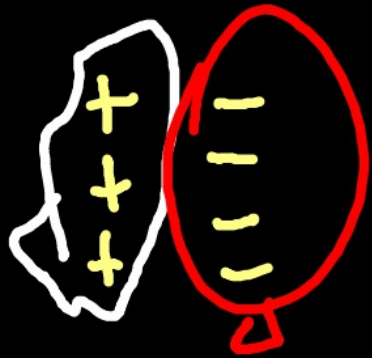
2) Conduction (same charge)

3) Polarization (+ and -
split up)

Grounding: Removing a charge by
connecting it to ground/water

1. Charging by friction - rub 2 objects together -

Fur Balloon



electrons get transferred

one object always gets \oplus ,

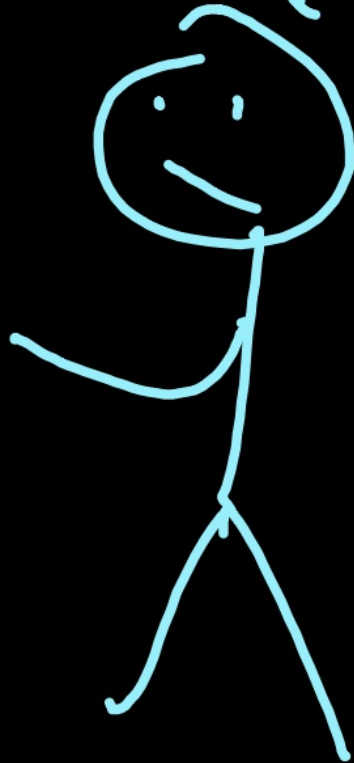
while the other always gets \ominus .

2. Charging by Conduction - touch a charge to a neutral

Neutral
↓



Negative
↓

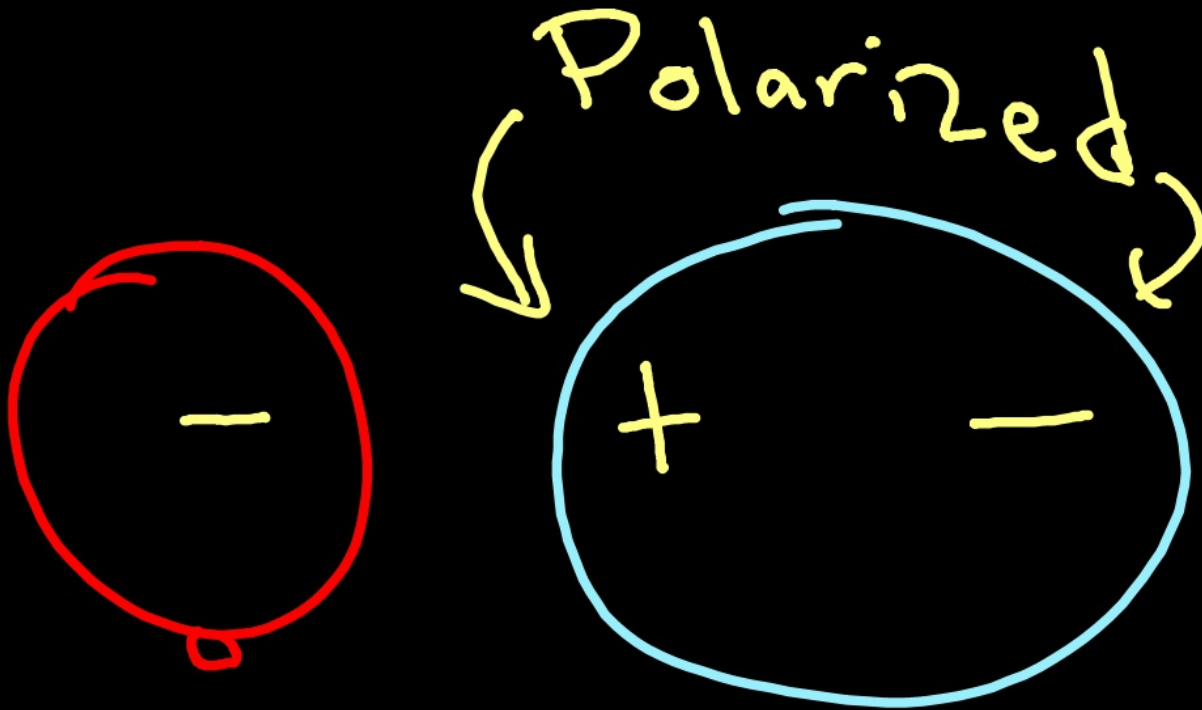


Both negative

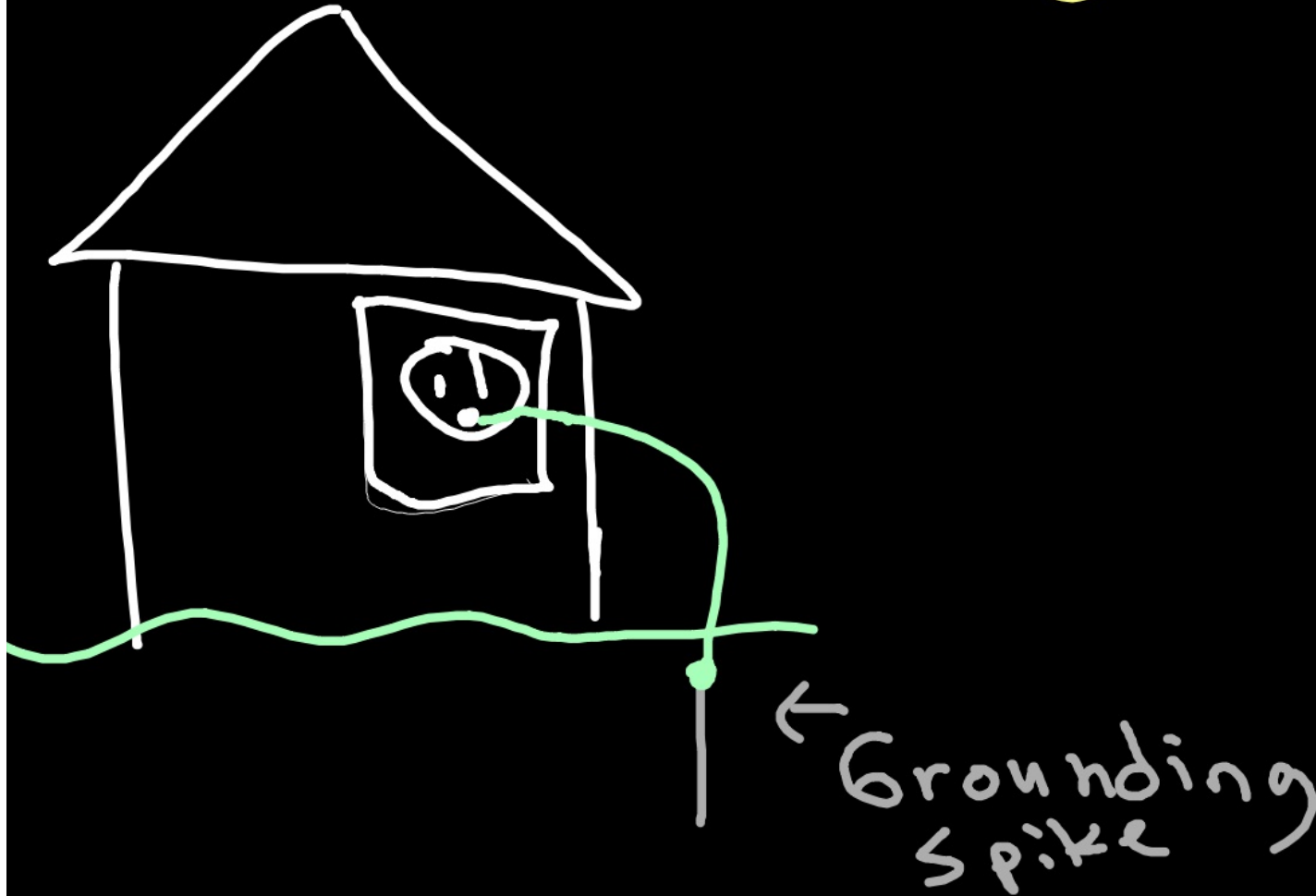


3. Charging By Polarization

bring a charge
near a neutral.



Grounding - removing charge.



Recaps (Attract, Repel, Do Nothing)

1. 2 positives will Repel.

2. 2 negatives will Repel.

3. 1 +, 1 - will Attract.

4. 1 +, 1N will Attract.

5. 1N, 1N will Do Nothing.

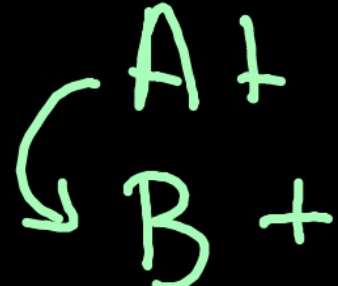
6. Can a neutral ever repel? No.

2 Object Statics Problem

A is positive. B is repelled by A. Object B is.....

- Positive
- Negative
- Neutral
- + or Neutral
- - or Neutral

repel



A +
B +

A is positive, B is attracted to A. Object B is....

- Positive
- Negative
- Neutral
- + or Neutral
- - or Neutral

att $\begin{matrix} A & + \\ \downarrow & \\ B & - \text{ or } N \end{matrix}$

1. Physicsclassroom.com → Concept Builders
2. Static Electricity → Charge Interactions , **Launch Concept Builder**
3. Work on the first level (Apprentice).
4. When you get a badge, leave it up!

3 correct



Wrap Ups:

1. Why is it important to have the person stand on an insulating stand? *Keeps charge from getting into ground*
2. Why is the person on the VdG not getting shocked? *Same Charge*
3. What makes their hair "rise up"? *Repel*
4. If a joker on the ground touches this person who will get shocked? *Both ☺*



