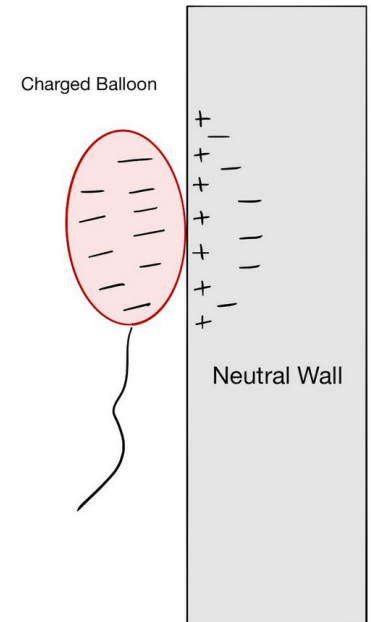
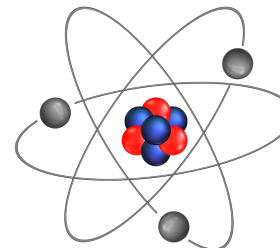


Static Electricity

- Parts of an Atom
- Neutral Objects
- Charged Objects
- Friction
- Law of Electric Charges
- Static and Hair
- The Electrostatic Series
- Sparks and Lightning



Material	Strength of Hold on Electrons
Glass	Weak ↓ Strong
Human Hair	
Wool	
Rubber	
Foam	
Plastic Bags	
Ebonite	Strong

Preview File

Please enjoy this preview of your Student Version of the presentation. Please note within this sample file:

- Some slides appear blank because they have been removed
- Student versions have portions of the text removed which is given in the teacher version and appear as _____ which the students are to fill in
- Other slides may have on them, this represents writing that has been removed on this sample

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Google Classroom Ready



Static Electricity

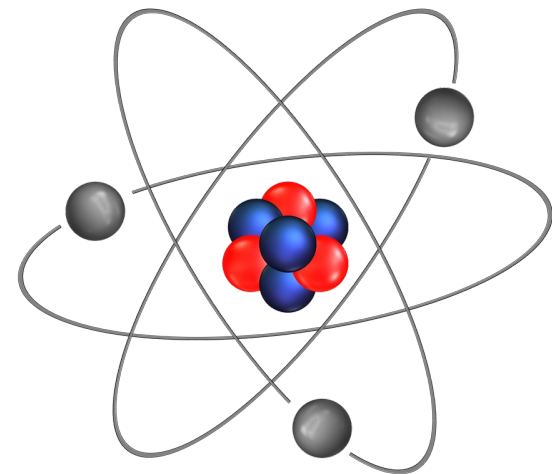
- You walk across the rug, reach for the doorknob and.....ZAP!!! You get a shock
- Or, you come inside from the cold, pull off your hat and.....BOING!!! All your hair stands on end



- What is going on here?
- What is it that is moving around?
- And why does it happen more in the winter?

Parts of an Atom

- In the middle of each atom is a nucleus. The nucleus contains two kinds of tiny particles - protons and neutrons
- _____



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Neutral Objects

Atoms:

When the number of protons in an atom equals the number of electrons,

2 electrons (-) + 2 protons (+) = no charge

Charged Objects

- _____
- Atoms that lose electrons have more '+' charges (protons) than '-' charges (electrons). They are positively charged.
- An atom that gains electrons has more '-' than '+' particles. It has a negative charge.

Stealing or Giving Away Electrons

- How do electrons move from place to place?
- One very common way is through friction. When two objects are rubbed together,

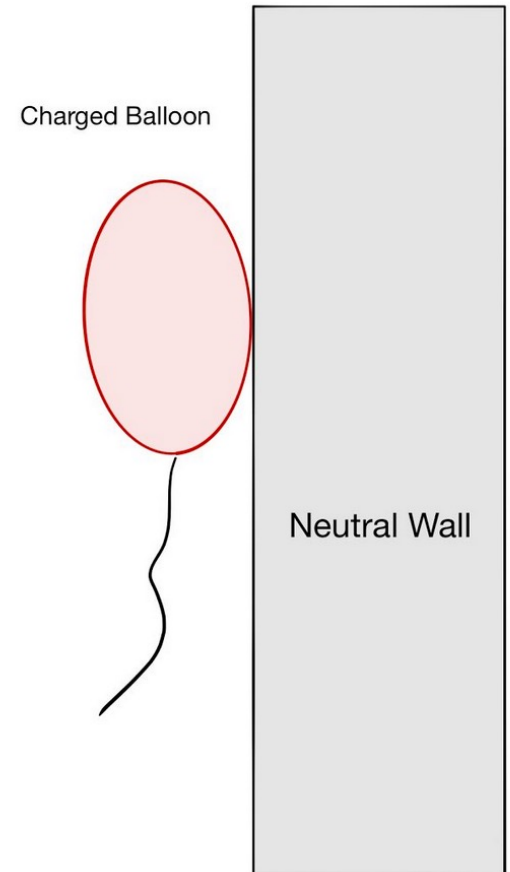
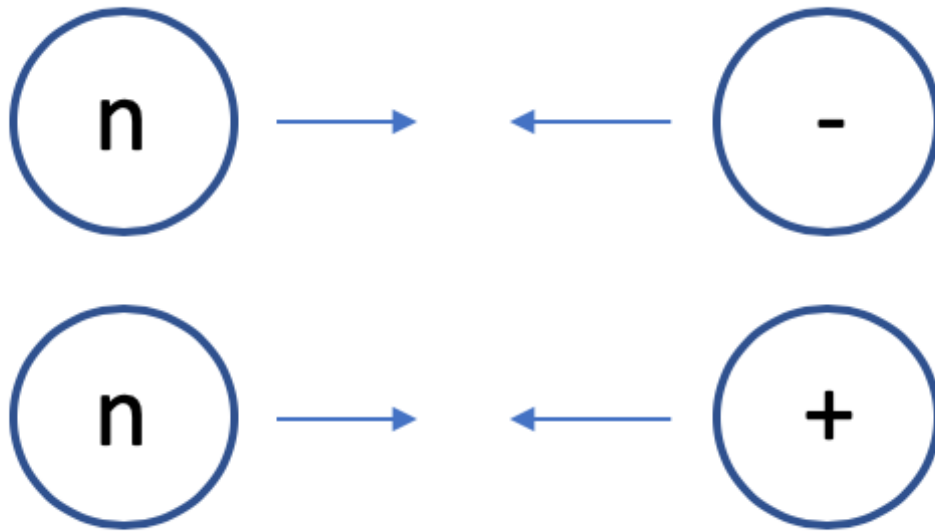
- The more rubbing, the more electrons move



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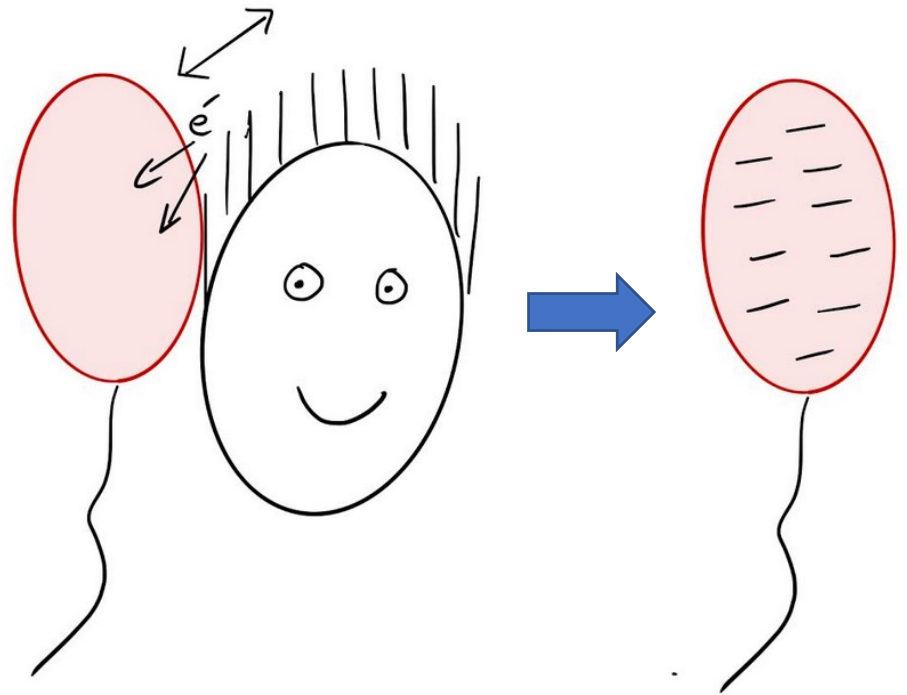
Law of Electric Charges

Law 3: Neutral objects attract both positive and negative objects



Why Does a Neutral Wall Attract a Balloon?

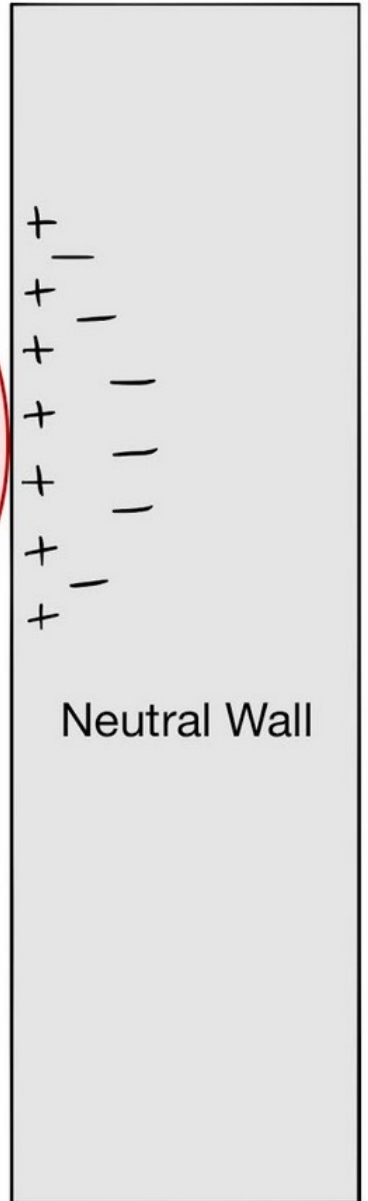
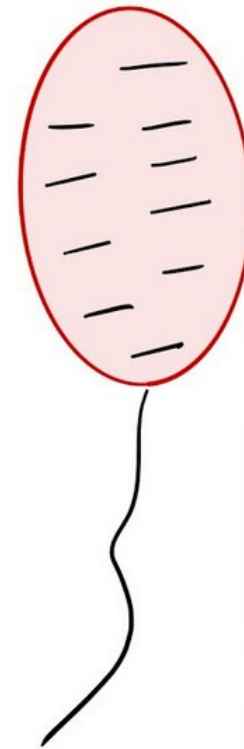
If you charge a balloon by rubbing it on your hair, it picks up extra electrons and gains a negative charge.



The Result

- Holding it near a neutral wall will make the negative charges in the wall move away because like charges repel
 - The positively charged protons cannot move
- _____
- Since like charges attract, the balloon sticks to the wall

Charged Balloon



Neutral Wall

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Static and Hair

- When you rub against something, electrons can jump to the other object from you
- This creates a positive charge all around your body including the hairs on your head
- Like charges repel and since the hairs are all positively charged, they start to repel each other so that they can get as far from each other as possible
- _____



The Electrostatic Series

- An electrostatic series is an arrangement of materials based on how strongly they hold their electrons
- _____
- Materials higher on the series will give up their electrons to the ones below if rubbed together

Material	Strength of Hold on Electrons
Glass	 Weak Strong
Human Hair	
Wool	
Rubber	
Foam	
Plastic Bags	
Ebonite	

Check Your Understanding

1. If you rub human hair and wool together, which will lose, and which will gain electrons?
2. Glass and Foam?
3. Rubber and Wool?
4. Ebonite and Foam?

Material	Strength of Hold on Electrons
Glass	 Weak Strong
Human Hair	
Wool	
Rubber	
Foam	
Plastic Bags	
Ebonite	

Sparks and Lightning

- If there are enough positive charges on one object and enough negative charges on the surface of the other object, _____
- This is what happens when you touch metal and receive a shock and when lightning occurs

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