Electricity
Physics Ess

Phys Ess Do Now

To turn a light on, what do you need? What do you need to make a circuit?

Comparing Circuits

What makes circuits different?

Mini Lecture

Phys Ess Do Now

Match the terms...

Proton	Negative
Neutron	Positive
Electron	Neutral

Which one is on the outside of the atom?

Organize Folder/Binder

New section or side of folder.

1. Do Nows
2. Calendar
3. Circuit Drawings (Tuesday)
4. Mini Lecture (Tuesday)
5. Tutorial (Today)

Add on to Mini Lecture

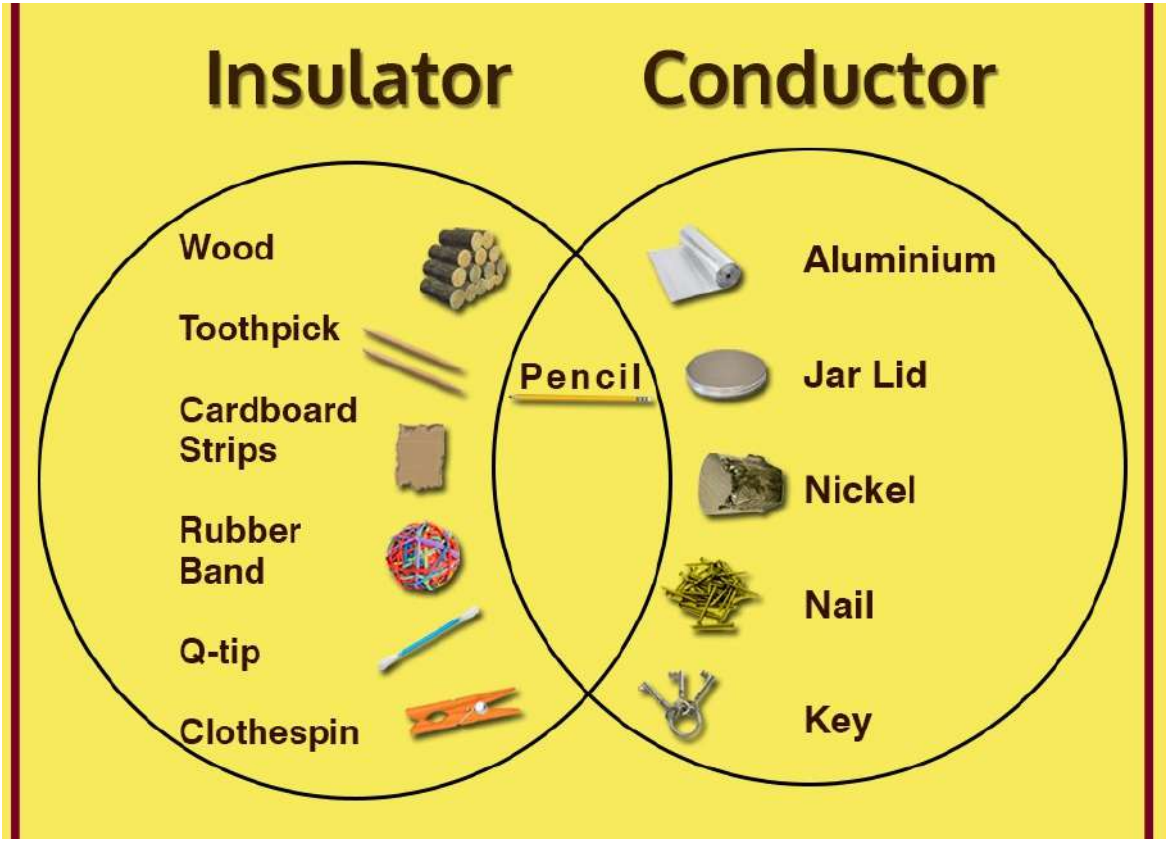
Tutorial

- Complete tutorial- lots of vocab!
- Complete mini-lecture
- Show me when you're done with both

Phys Ess Do Now

What objects are insulators, conductors or both?

- Wooden Bench
- Cactus
- Silver Watch
- Diamond Ring
- Basketball
- Pencil
- Pillow


Insulator
Conductor
Wood
Toothpick
Cardboard Strips
Rubber Band
Q-tip
Clothespin
Pencil
Aluminium
Jar Lid
Nickel
Nail
Key

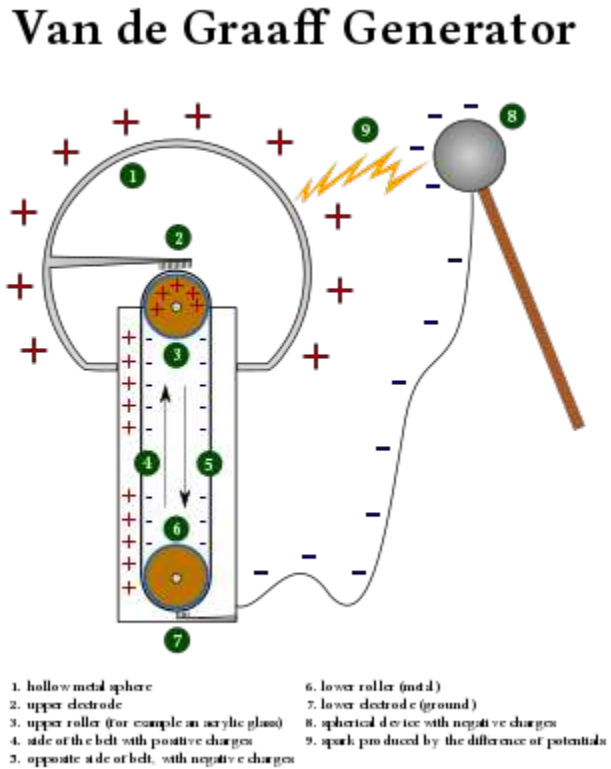
How do I “charge” something?

Charging by Friction- Transfer of charge due to rubbing two materials together (fur and balloon)

Charging by Conduction- Electrons are transferred from one object to another by touching

Charging by Induction- Charge by bringing an object near another

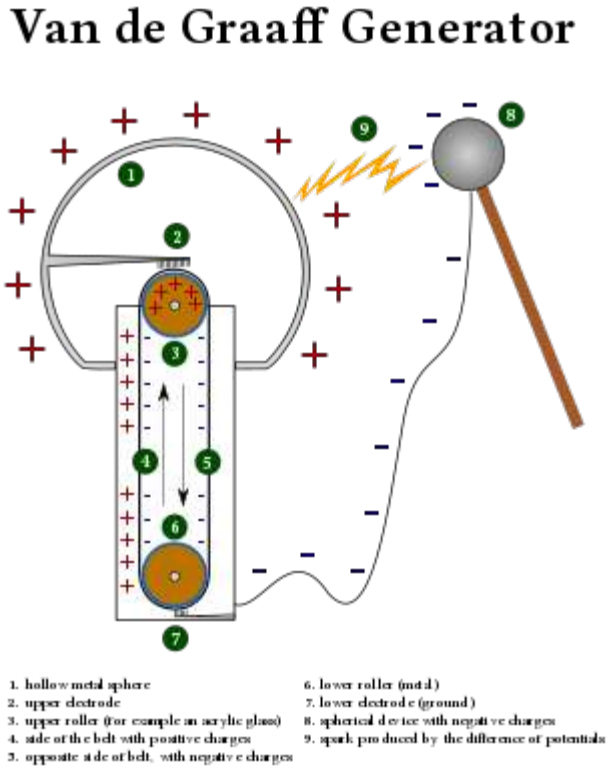
Van De Graaff Demos



Van De Graaff Demos

For each demo observe the demo. I will take volunteers based on behavior.

1) Demo (Draw & Describe)
2) Prediction
3) Outcome
4) Type of Charging



Phys Ess Do Now

1) I rub a balloon on my hair to make it stand up. This is charging by _____.
2) When I touch a doorknob is shocks me. This is charging by _____.
3) When I throw a balloon at the Van De Graaff it doesn't touch but bounces off. This is charging by _____.

Induction, Conduction, Friction

Organize Folder/Binder

New section or side of folder.

1. Do Nows
2. Calendar
3. Circuit Drawings
4. Mini Lecture
5. Tutorial
6. Van de Graaff Demos
7. PhET Electric Force (Balloons and Travoltage)

PhET Electric Force

Let’s “see” what we learned!

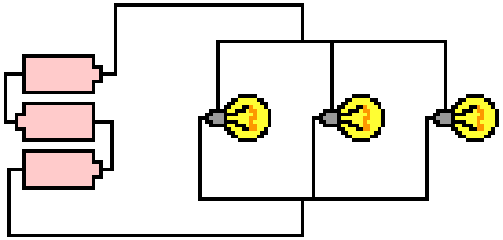
Phys Ess Do Now

1) From yesterday, in the John Travoltage lab what type of charge flowed through his body?
2) From yesterday, what type of charging did you use with the balloon and sweater?

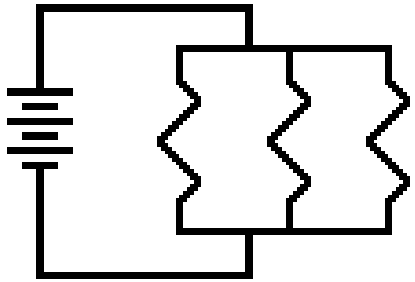
Open Note Quiz!

Phys Ess Do Now

Drawing of Circuit



Schematic Diagram of Circuit



What do you notice is different about these two drawings of the same circuit?

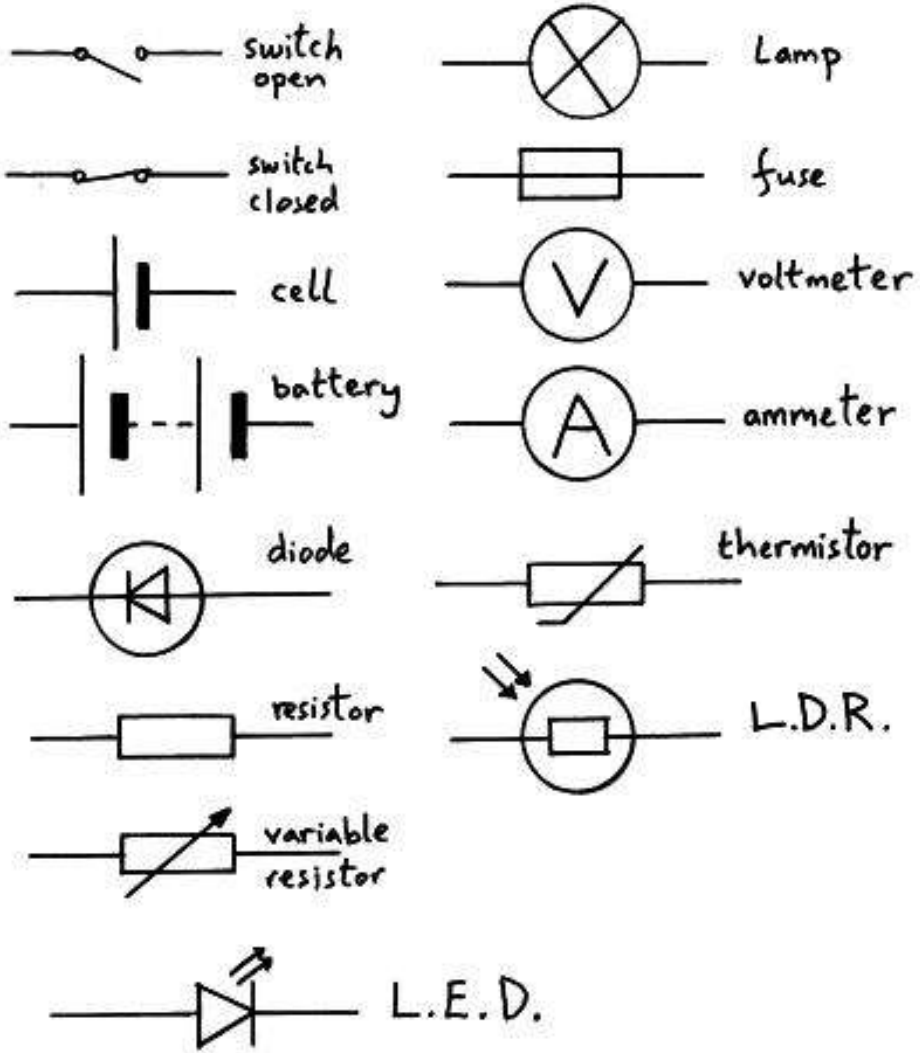
Organize Binder

FRONT OF BINDER!

1) Do Now
2) E&M Calendar
3) Content: Mini Lecture and Tutorial
4) Van De Graaff
5) Drawing Circuits
6) Electric Force: Travoltage/Balloon Simulation
7) Circuit Tutorial (Today)

Physics Essentials Do Now

1) In electricity, what type of particle travels through a circuit?
2) What is an example of a good conductor? Bad conductor?
3) What do all circuits need to make them work?


switch open
Lamp
switch closed
fuse
cell
voltmeter
V
battery
ammeter
A
diode
thermistor
resistor
L.D.R.
variable resistor
L.E.D.

Drawing Circuits

Bring in Binder with you!

Rotate around all 8 stations.

Then we will go back to our circuits from Day 1 of the unit and try those out!

Organize Binder

FRONT OF BINDER!

1) Do Now
2) E&M Calendar
3) Content: Mini Lecture and Tutorial
4) Van De Graaff
5) Drawing Circuits
6) Electric Force: Travoltage/Balloon Simulation
7) Circuit Tutorial
8) Drawing Circuits

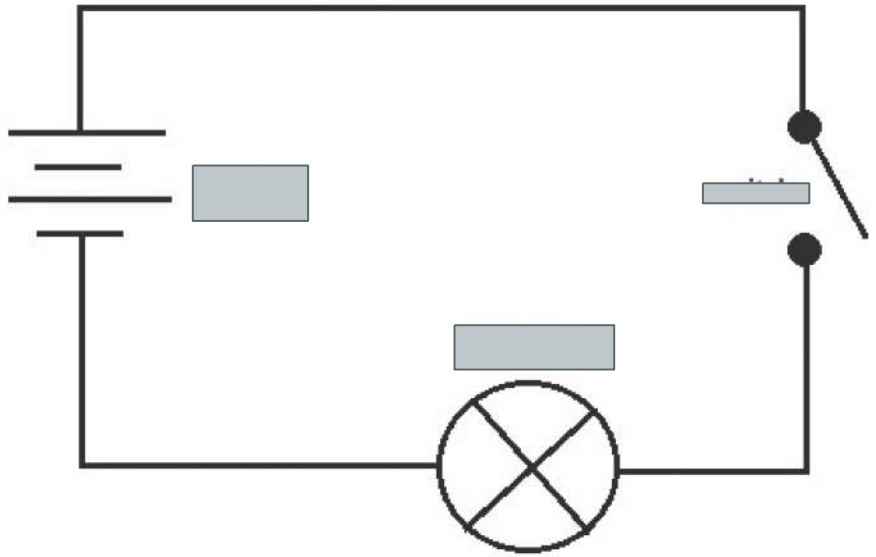
Physics Essentials Do Now

Describe what the ideal group member would do in a group project or assignment.

What are some things group members may do that may negatively affect the group.

Phys Ess Do Now

1) What parts are in this circuit?
2) Will the circuit work? If not, what will make it work?



Lights Out! Challenge

Dameon and Alex were walking home from school through a short cut through the woods. They accidently turn in the wrong way and are lost. It is starting to get cold and dark outside. They also realize both of their phones are dead.

Dameon and Alex start to freak out! What should they do? They need some type of light to get around.

They rummage through their backpack and find a bunch of random materials to make a flashlight. Hopefully what they are learning in Physics Essentials will help them!

Snap Circuit Groups

Wentzloff- Snap Circuit Groups

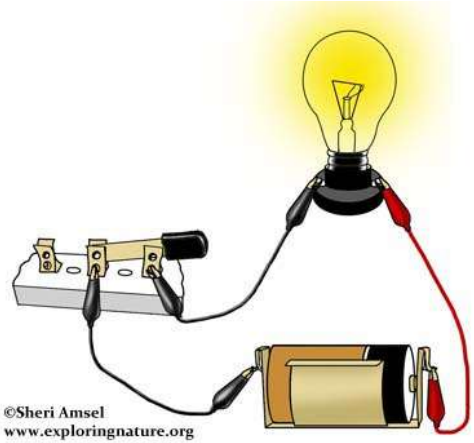
1. April, Autry
2. Lizbet, Xzavier
3. Shaniyah, Kadeejah
4. Rian
5. Kevin
6. Nylah, Shania
7. Kaleb, Jaden
8. Kionna
9. Donny
10. Cole, Trent
11. Ariyanna, Sabastian
12. Cheyenne
13. Dalton, Jacob
14. Kimora

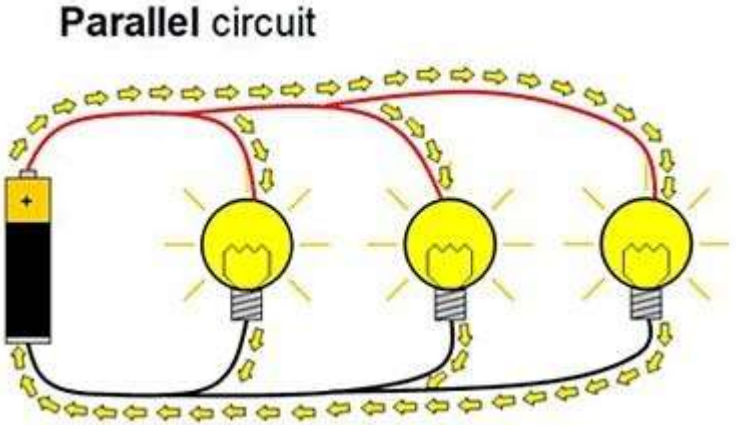
Drawing Circuit Diagrams

1) Must be a box/rectangular shape
2) Use symbols
3) Ask if you are not sure.
4) Your own drawings are not circuit diagrams

Phys Ess Do Now

1) Using your circuit diagram symbols create a circuit diagram for the two circuits:





Schedule

You must complete Intro to Snap Circuits, Challenge and Big Challenge. Super Challenge is Extra Credit!

Monday-Thursday- Work Time

Monday- Open Note/Partner Quiz

Tuesday- Binder Check

Wednesday- Start Final Unit! Forces and Motion PBL

Snap Circuit Expectations

- Your box is neat and organized
- You are on task and finish goals by due date
- You take turns building the circuits and answering the questions
- Do not rush through packets

Wentzloff- Snap Circuit Groups

1. April, Autry
2. Lizbet, Xzavier
3. Shaniyah, Kadeejah
4. Rian, Kevin
5.
6. Nylah, Shania
7. Kaleb, Jaden
8. Kionna
9. Donny
10. Cole, Trent
11. Ariyanna, Sabastian
12. Cheyenne
13. Dalton, Jacob
14. Kimora

Today's Goals

1) Complete the Intro to Snap Circuits by Tuesday
2) SHOW Ms. Logan and get a Challenge Packet
3) Make sure you use your circuit symbols!

Phys Ess Do Now

1) What is your Snap Circuit Box number that was assigned?
2) Why is it important to not run a circuit for a long period of time?
3) What can help you put the snap circuits back in the correct place?

Today's Goals

1) Complete the Intro to Snap Circuits
2) SHOW Ms. Logan and get a Challenge Packet
3) Make sure you use your circuit symbols and circuit diagrams for your Challenge

Physics Essentials Do Now

Create a circuit diagram with...

1) A battery, light bulb and resistor
2) A battery and light bulb.
3) Which one will be brighter? Why?

Phys Ess Library Work Expectations

You can only sit at a table with your partner. You will be assigned a table.

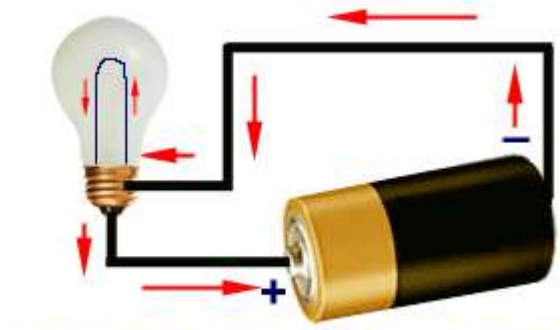
If you are working by yourself, you can sit with another person working by themselves.

Physics Essentials Do Now

What way is the current flowing?

What type of particle is flowing through the current?

What are the two sides of a battery?



Simple circuit with light

Today's Goals

1) Complete the Intro to Snap Circuits
2) SHOW Ms. Logan and get a Challenge Packet
3) Make sure you use your circuit symbols!

Organize Binder

FRONT OF BINDER!

1) Unit 2 Calendar
2) Content Notes
3) Van De Graaff Notes
4) Travoltage/Balloon Simulation
5) Circuit Simulation
6) Drawing Circuits Basics
7) Cosmos Electric Boy
8) Introduction to Snap Circuits
9) Snap Circuits Challenge

GROUP QUIZ- THURSDAY

Today's Goals

1) Complete the Intro to Snap Circuits
2) SHOW Ms. Logan and get a Challenge Packet
3) Work on Challenge during class today. Use the handout from yesterday for circuit symbols.

Physics Essentials Do Now

Create a circuit diagram with...

1) A battery, light bulb and resistor
2) A battery and light bulb.
3) Which one will be brighter? Why?

Reminders

Partner test moved to WEDNESDAY!

Binder Check is next TUESDAY!

You project for this unit will be about snap circuits.

Today's Goals

1) Complete Challenge Packet by the end of class today.
2) Show Mr. Hartley and get a Big Challenge Packet.

Phys Ess Do Now

1) What Snap Circuit packet are you currently working on?
2) How do you feel about working on Snap Circuits? Be honest.

Snap Circuits

Snap Circuit Open Note & Partner Quiz is Tuesday + Binder Check

Phys Ess Do Now

1) If a switch is on, is the circuit closed or open?
2) Why does an LED only go a certain way?
3) Draw a parallel and series circuit. What is the difference?

No Do Now!

Sit with your partner (if you have one).

Take out your binder or folder

Tuesday

Group Quiz! Open Note

Binder Check End of Class- leave folder/binder (200 points)

Organize Binder

FRONT OF BINDER!

1) Do Now
2) E&M Calendar
3) Content: Mini Lecture and Tutorial (20 points total)
4) Van De Graaff (20 points)
5) Drawing Circuits (20 points)
6) Electric Force: Travoltage/Balloon Simulation (20 points)
7) Circuit Tutorial (20 points)
8) Drawing Circuits (20 points)
9) Snap Circuits Introduction (20 points)
10) Snap Circuits Challenge (30 points)
11) Snap Circuits Big Challenge (30 points)
12) Snap Circuits Super Challenge (extra credit 20 points)

Phys Ess Do Now

What is your goal to work on today?

1- Big Challenge

2- Super Challenge

3- Start Project