Physical Science Agenda 2023-2024

Physical Science Book Glossary **(for most definitions)**

Quizlet (if you want to make yourself quizzes...feel free to share them with your classmates)

Interactive periodic table

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CURRENT EVENTS / INTERESTING SCIENCE STUFF

JamesWebb Telescope official NASA page…has sociaacquil media links you can follow

United States Geological Survey…monitors earthquakes, drought, floods…all kinds of things

Fire and Smoke Map

ScienceNews…current scientific studies, reports…all areas of science

BeSmart Videos

Turkish Earthquake creates chasm

32 Element Symbols Quizlet Thank you Anya

A long-awaited asteroid sample has landed in the US

Nobel prizes

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- Check Newton's 2nd Law practice problems **KEY, KEY 2 (#9-17)**
- Newton's 3rd Law Reading..read 363-366
- "For every action, there is an equal and opposite reaction"
    - Forces occur in pairs, action force and reaction force
    - Action/Reaction forces are equal in magnitude (number) but opposite in direction
    - Action-Reaction pairs do NOT cancel out, because the act on different objects
        - Bat hits ball, ball hits bat

- 
- When drawing force diagrams, the action reaction pair are NEVER on
    - the same diagram
- Each force will change the motion of the object it is acting on (accelerate)
- How much acceleration each object experiences depends on each object's mass
    - Big mass = little acceleration
    - Little mass = big acceleration
- Tennis Ball Cannon...3rd law
- 3rd law packet

Friday, May 17th

quiz

Newton's 2nd Law practice problems in class (do even in class together for practice, odd

Thursday, May 16th

Newton's 1st Law WS

Newton's 2nd Law Interactive Reading WS

1. VIDEO : EUROPEAN SPACE AGENCY CLIP
2. VIDEO #2: NFL KICKING CLIP
3. VIDEO #3: NFL Sport Science Clip

Newton's 2nd Law practice problems in class (do even in class together for practice, odd for homework) **KEY**

(video clip on how to solve)

Wednesday, May 15th

EM spectrum (pic)

EM notes

Color/Shadows

Tuesday, May 14th

Refraction of Light activity

Monday, May 13th

Reflected Light Activity

Friday, May 10th

- Refraction Gizmo
- Google Doc to complete is in Schoology folder for May 10th.
- A paper copy of the last page is available (if drawing on the googledoc is too hard to do) from the sub
- Due Monday, May 13th if you do not finish in class

Thursday, May 9th

- Laser Reflection Gizmo
- Google Doc to complete is in Schoology folder for May 9th.

- A paper copy of the last page is available (if drawing on the googledoc is too hard to do) from the sub
- Due Friday, May 10th if you do not finish in class

Wednesday, May 8th

- Watch Reflection vid clip
- Read handout about reflection and answer questions in Schoology (looks like a quiz…named "Questions from Reflection Reading)
- Light Reflection Packet **(complete for homework if needed)**

Friday, May 3rd, Monday, May 6th and Tuesday, May 7th

Workdays for Rube Goldberg Project (due Friday, May 10th)

- ***Where GPE and v are calculated gets their own letters too***
- ***do your final letters with a pen or black colored pencil so the letters are easily seen***
- Reminder that letters on the Rube project page will NOT go in order.
- Letters only go in order on the cartoon itself
- One item in the cartoon CANNOT be used twice for labeling forces/energies
    - 1 letter - 1 item
    - Some forces will show up many times in your picture, but only label it once
- Blank paper for cartoon is under the flag.
    - If you d this right, you will have 2 or more drafts
- Cartoon should fill the page
- Final Rube project page is also under the flag. This should be the LAST thing you do. If you would rather type than write by hand, open and make your own copy of the Rube project page. You will need to print it out to turn in at the end.
- Colored Pencils are also under the flag. Return them when you are done
- 8th period please line up your tables with the floor marks.

Thursday, May 2nd

Momentum quiz

Intro to Rube Goldberg Project

Who was Rube Goldberg?

Rube slideshow (first 8 slides only)

- Video clips
  - Home alone clip
  - OK GO
- Rube project page (to fill in forces, etc)

Wednesday, May 1st

Check KE/PE problems
KEYTME practice, Key
~~Work on PE/KE minipacket~~

Tuesday, April 30th

Finish Conservation of momentum problems
Watch Solving PE/KE/TME problems
Practice solving KE/PE problems (finish for HW)
~~TME practice, complete for HW~~
Momentum quiz Thursday

Monday, April 29th

Check momentum practice problems, key
Continue Momentum demos with carts, playground ball/tennis ball,bowling ball/playground ball
Bobsledding video
Conservation of momentum problems

Friday, April 26th

Check Momentum worksheet from Wednesday
car crash physics
Momentum demos with carts, playground ball/tennis ball,bowling ball/playground ball
Work on momentum practice problems

Thursday, April 25th

Motion test
No HW

Wednesday, April 24th

- Complete the Momentum worksheet
- Go to the following link
  - https://quizizz.com/join?class=G017533
  - Follow the instructions to join my class….I believe that it will allow you to sign in using your school google email/clever credentials.
  - There are 2 practice quizzes to take. This is NOT homework.
  - If they do not work, you will need to review on your own.
  - We started these topics on April 4th

Tuesday, April 23rd

Check Acceleration Practice II (#1-5 for homework)
Complete remainder in class alone or with partner
TEST THURSDAY (frame of reference, distance, displacement, reading graphs…both kinds. Acceleration problems, velocity problems)
Read about momentum at the Physics classroom (just the first page)
Bozeman...momentum (through 3:30)
~~car crash physics~~
~~Complete the Momentum worksheet~~

Monday, April 22nd

Check last page of Acceleration Practice 8,9,second side, 28,28 (together)
Acceleration Practice I
Acceleration Practice II (finish #1-5 for homework)

Friday, April 18th

$$\text{Acceleration} = \frac{change\ in\ velocity}{time\ taken}$$

$$\text{Acceleration} = \frac{final\ velocity - initial\ velocity}{time\ taken}$$

$$a = \frac{Vf - Vi}{t}$$

Acceleration Practice 8,9,second side, 28,28 (together)
Acceleration Practice

Wednesday, April 17th (periods 3,1,2) /Thursday April 18th (periods 7,8)

Sled Wars Gizmo…will work on in class (and probably finish)...due Friday at beginning of class.
https://www.youtube.com/watch?v=YVdVpd-pqcM
https://www.youtube.com/watch?v=moVzZrNK2go

Tuesday, April 16th

Review and use as a reference: Motion Graph ppt
Work on Velocity-time graph packet
Complete remaining pages in Velocity-time graph packet (key to check your work)
Complete handout #1 and handout #2
Eureka: Acceleration (part 2)
For reference if needed: What is acceleration, what are the units
HW: finish the 3rd page of today's handouts

Monday, April 15th

OST testing

Friday, April 12th

Reading motion graphs summary and practice
Asexual/Sexual Reproduction and KE/GPE handout
HW: Get a good night's sleep Sunday night and have a good breakfast Monday morning.

Thursday, April 11th

Check pHet moving man activity

Website, document
Reading level 1 and 2 motion graphs
Motion Graph Summaries
Reading motion graphs summary and practice

Wednesday, April 10th

Collect Understanding the Sprint materials
Look at Understanding the Sprint Graphs
Compare what you see
What does constant speed look like on the distance-time graph?
What about on the speed-distance graph?
What does +acceleration look like on the distance-time graph?
What about on the speed-distance graph?
Begin pHet moving man activity
Website, document
How to read Motion Graphs

Tuesday, April 9th

- Check the Relative Motion handout from Friday (key)
- In-Class worksheet (speed vs. velocity) describing with words, check against key
- **Use** Understanding the Sprint to calculate splits and generate 2 graphs, a distance-time graph and a speed-time graph. Assignment Sheet with graph grid (YOU HAVE TO READ THE INSTRUCTIONS IN THE BOOK TO KNOW WHAT TO DO…WORD FOR WORD, LINE FOR LINE.
- Complete for homework if not finished in class.
- By the way, the current men's world record is 9.58 seconds, set by Jamaica's Usain Bolt in 2009, while the women's world record is 10.49 seconds set by American Florence Griffith-Joyner in 1988.

Friday April 5th

Forces Quiz
Distance, Displacement, Scalars and Vectors

Thursday, April 4th

Check homework
Watch http://www.flippingphysics.com/skateboarding.html

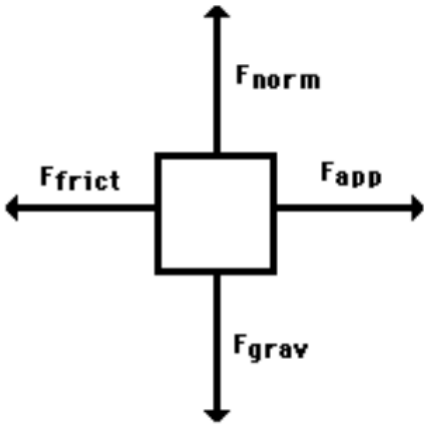
What is a frame of reference?
Sky-diving world record…
    Take a minute to think about and answer these questions
        How fast are the skydivers falling compared to someone watching from the ground?
        How fast are they falling relative to one another?
1. Billie Eilish on Saturday Night Live

Wednesday, April 3rd

Force Diagram Practice
Force Diagram practice sheet #2
More force diagram practice
Complete all unfinished questions for homework

Drawing Free-Body Diagrams

Free-body diagrams are diagrams used to show the relative magnitude and direction of all forces acting upon an object in a given situation. A free-body diagram is a special example of the vector diagrams which were discussed in an earlier unit. These diagrams will be used throughout our study of physics. The size of the arrow in a free-body diagram is reflects the magnitude of the force. The direction of the arrow shows the direction which the force is acting. Each force arrow in the diagram is labeled to indicate the exact type of force. It is generally customary in a free-body diagram to represent the object by a box and to draw the force arrow from the center of the box outward in the direction which the force is acting. An example of a free-body diagram is shown below.



The free-body diagram above depicts four forces acting upon the object. Objects do not necessarily always have four forces acting upon them. There will be cases in which the number of forces depicted by a free-body diagram will be one, two, or three. There is no hard and fast rule about the number of forces which must be drawn in a free-body diagram. The only *rule* for drawing free-body diagrams is to depict all the forces which exist for that object in the given situation. Thus, to construct free-body diagrams, it is extremely important to know the various types of forces. If given a description of a physical situation, begin by using your understanding of the force types to identify which forces are present. Then determine the direction in which each force is acting. Finally, draw a box and add arrows for each existing force in the appropriate direction; label each force arrow according to its type. If necessary, refer to the list of forces and their description in order to understand the various force types and their appropriate symbols.

Monday, April 1st/Tuesday, April 2nd

- Pearson/Edulastic practice OST
  CLASS JOIN CODES
  - V28KHMYT PER 1
  - V2BAR6DE PER 2
  - V2U6STSG PER 3
  - V25WIFOB PER 7
  - V2TEOHYR PER 8
- ~~Read 356-362 in Physical Science Book (in class)~~
- ~~Complete Guided Reading~~
- Calculating Net Force Problems
- Drawing Practice using website (website)

Friday, March 29th

- Information about "how a speaker works"
  - Test which frequencies your speaker seems to project the best by using this Hearing test
- Motors and Generators (Simple explanation video)
- MagLev Trains
- Everything You Need To Know about Forces (read in class)

Thursday, March 28th

- Information about "how a speaker works"
- Speaker Presentation
- Speaker Construction
- Test which frequencies your speaker seems to project the best by using this Hearing test

Wednesday, March 27th

Electrostatics quiz

Applications of electromagnetism

- Motors and Generators (Simple explanation video)
- How do Coal Power Plants work video
- **Wind turbines**
- Hand generator demos

HW: Read about electromagnets, Answer the electromagnet questions (based on the reading) in Schoology…due beginning of class tomorrow

Tuesday, March 26th

Check HW, KEY
Mythbusters: Van De Graaf Generator
How a laser printer works (hint: it uses electrostatic fields)
How electronic air purifiers work
Electromagnetism
- Build electromagnets
  - Explore the effects of coils, cores, and voltage
  - Use the compass to detect the DIRECTION of the field
  - Change direction of current…what happens to compass
- ~~Applications of electromagnetism~~
- ~~Read about electromagnets~~

~~HW: Answer the electromagnet questions (based on the reading) in Schoology…due beginning of class tomorrow~~

Monday, March 25th

- Electric Field Informational Reading , (read together), answer questions for HW
  - https://www.youtube.com/watch?v=3Ptu07enIsY
- pHet static electricity
- Goals

March 15th

Career Day/The Giver

March 11-14

Galapagos documentary
Universal forces and magnetism quiz on the 12th

Friday, March 8th

- Discuss/Check HW
- Pass around baggies of iron filings and magnets to detect field lines
- Log in to Clever.com
- Select Gizmo
- Select the magnetism gizmo

- The document with instructions is a google assignment in the schoology folder for today. It is titled "Magnetism Gizmo". This is where you will be entering your answers as well.

Thursday, March 7th

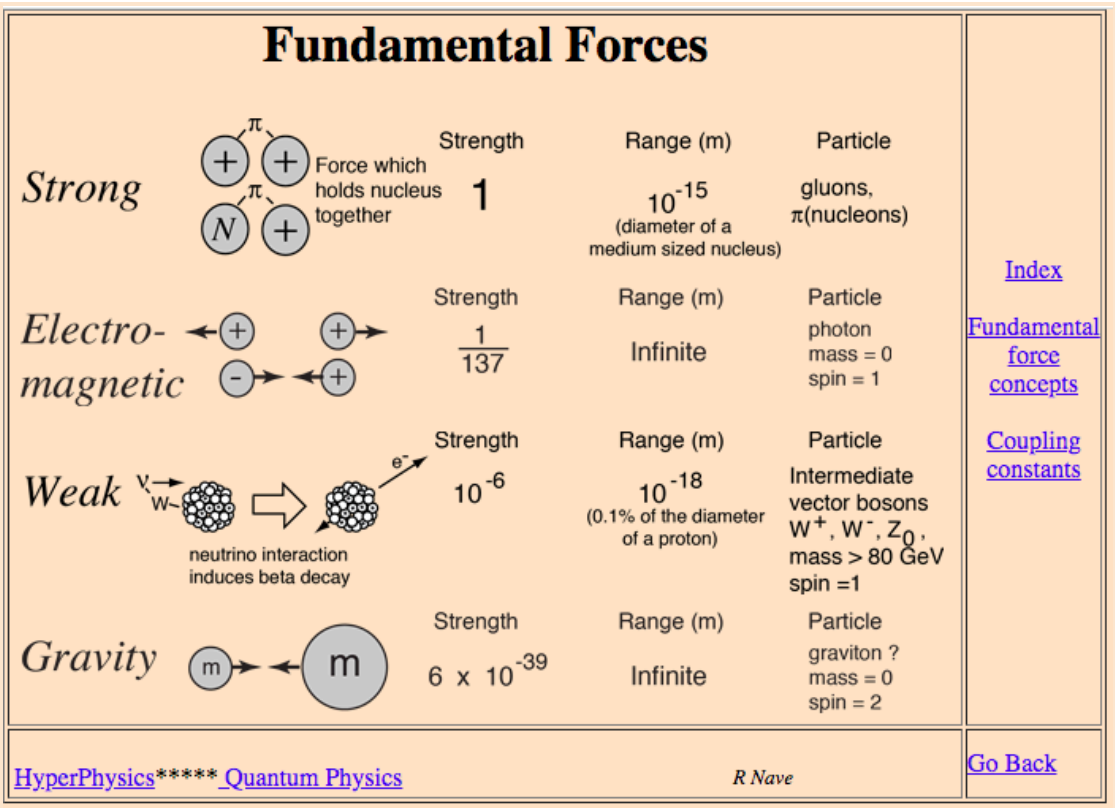
- **Play** with the Bar magnet simulation. Predict what you think will happen before you try different things.
- **Read** pgs 6-11
- **Complete** Magnetism questions (looks like a schoology quiz but it is a practice grade)
- Look at some helpful diagrams related to magnetism to look at
- Do you know what a magnetic domain is?
    - **Watch** Bozeman vid clip to find out
- Did you know that Earth acts like a magnet?
    - **Read** What Is a Magnetic Field? (Earth as a magnet)
        - and **answer "Earth as a magnet" questions** (in schoology)

Wednesday, March 6th

https://forms.gle/wMg8xj3qkxoirQjb8

Review the Fundamental Forces (strength, what involved)

- ☐ Use the table below to answer the following questions. Discuss with the person beside you.
    - ☐ Which one is strongest?
    - ☐ Which one is weakest?
    - ☐ Which one is felt over the greatest distance?
    - ☐ Which one is only felt over the smallest distance?
- ☐ Go over questions as a class



- ☐ **Look through** What is magnetism powerpoint. Do not skip any slides.
- ☐ **Play** with the Bar magnet simulation. Predict what you think will happen before you try different things.
- ☐ **Watch** Crash Course Physics: Magnetism
- ☐ Look at some helpful diagrams related to magnetism to look at

Tuesday, March 5th

Life Science Recap
Traits are either inherited or acquired
Inherited traits are passed down from parent to offspring through DNA in sex cells
A piece of DNA that codes for a trait is called a gene
Different versions of a gene are called alleles
Alleles can recessive, dominant or codominant
The combination of genes you have is called your genotype
What they cause is called your phenotype

Combinations are referred to as homozygous or heterozygous
A mutation in a gene can be helpful, harmful, or have no effect
Mutations are the source of variety in traits
Inheritance can be predicted based on laws determined by Mendel
Natural selection picks which traits are favored or not-favored
Natural selection + changing conditions = shifting population characteristics
Mutations+Natural Selection+Time+Isolation → New Species
Diversity of traits in a population good because survival of a variety of conditions is more likely

Read: Overview of Non Contact Forces (p 378-382)
WatchVideoClips about each of the forces. We will be studying each of these in the near future. This is just an introduction. Feel free to use earbuds or headphones.

a. Gravitational
b. Electrostatic /Magnetic
c. Strong Nuclear
d. Weak nuclear

Complete "quiz" in Schoology in today's folder

Monday, March 4th

- Retakes This Thursday study center/lunch/academic assist
- Giraffe discussion
  - Human genetic wheel
  - Giraffe genetic wheel
  - Giraffe game

Friday, March 1st

Spooners/Grabbers discussion

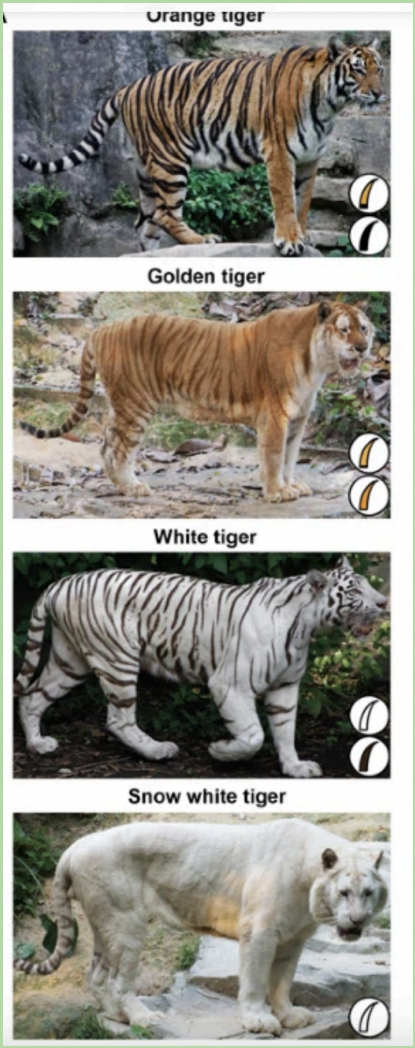
Thursday, February 29th

Spooners vs grabbers and population monitoring

Spooners	18	17	17	16	15	14	12	10			
Grabbers	0	1	1	2	3	4	6	8			

Twitomite papers if we have time

Wednesday, February 28th



What determines the color of the tiger's coat?
How do we get different alleles?
Watch Genes and Mutations
Variation within a species can increase through sexual reproduction as well as when mutations occur.

- Natural selection is the process by which organisms that have useful traits survive and reproduce to pass their traits to the next generation while organisms with less useful traits die, preventing those traits from being passed on. That trait becomes more frequent in the population after multiple generations as long as it continues to be helpful

- Peppered moths are THE CLASSIC example of natural selection
  - During the late 1800's Europe went through its industrial revolution. Unfortunately that also meant MASSIVE AMOUNTS OF POLLUTION
  - It got so bad that the trees in the forest actually were darkened with soot
  - The peppered moth has multiple colors. Here is a darker and lighter version. Same species just different colors.
  - 
  - Before the industrial revolution, the lighter colored moths blended in with the lighter bark on the trees, and the darker moths were found by their predators and eaten more frequently than the darker members of their species
  - As trees darkened with soot, the LIGHTER moths stood out against the trunks, and the predators ate them more frequently because the darker moths were now better camouflaged.

Recap peppered moth homework

Natural selection: traits that are beneficial for an organism help the organism to live, and eventually get passed on to the next generation. Traits that are not useful eventually begin to disappear from a population.

Isolation+Mutations+Time = CHANGE

Where did Darwin get his ideas

- Darwin was a naturalist (he studied nature)
- Darwin voyaged to the Galapagos Islands in the 1830's where he observed the life on the different islands
- The islands are caused by a hot spot

    - The islands are far enough apart that the organisms on one island can't normally mix with those on another island.
    - Darwin's observations of the life on each of the islands led him to develop a theory about how the different species came to be.
- 5 Keys to Darwin's Theory of Natural Selection
    - Individuals have a lot more offspring than they should
    - Species tend to produce an excess of offspring
    - since resources are limited, not all the offspring can survive
        - Offspring will compete for survival based on their biological fitness
        - Each offspring is different
        - If all the offspring were the same, then it would be random who survives
        - Fortunately, each offspring has different genes, so some are more fit to survive than others
    - Parents can pass on their traits to their offspring
        - Offspring that are fit to survive grow to become parents and have their own offspring
        - Therefore, they pass on the traits that allowed them to survive long enough to become parents
    - Different traits give offspring different abilities to survive
        - Some traits will help offspring survive, and some will hurt them
        - Nature is a strict judge and selects which ones survive and makes sure the traits that help survival stay in the gene pool while less ideal traits disappear through adaptations
    - Darwin observed different species of finches on the different Galapagos Islands
        - He surmised that they all had a common ancestor
        - The process by which one species branches out into different species is called speciation.
        - Evolution by natural selection plays a role in this process
        - Other factors such as **mutations** and **reproductive isolation** also play a role
    - **<u>To do</u>**
        - Watch Galapagos Finch evolution
        - Read How species develop over time
        - Answer Question sheet for reading (in Schoology)

Tuesday, February 27th

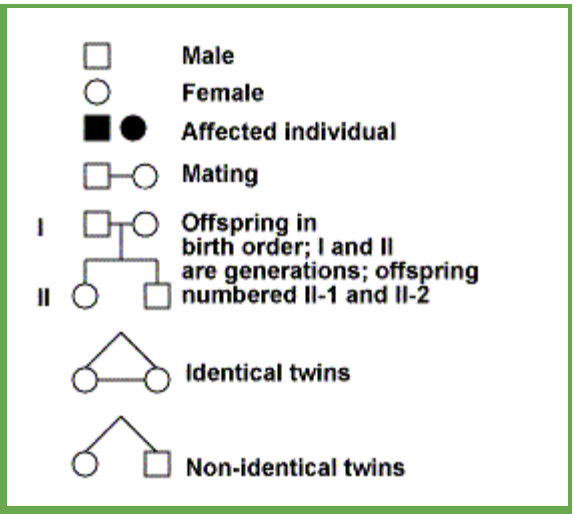
- Heredity Test
- Log in to Clever.com
    - Select Gizmo
    - Select **Natural Selection**
    - In your materials in Schoology you will find a googledoc called "Natural Selection Gizmo". This is where you will be entering your answers.
    - READ THE DIRECTIONS CAREFULLY, WORD FOR WORD

Monday, February 26th

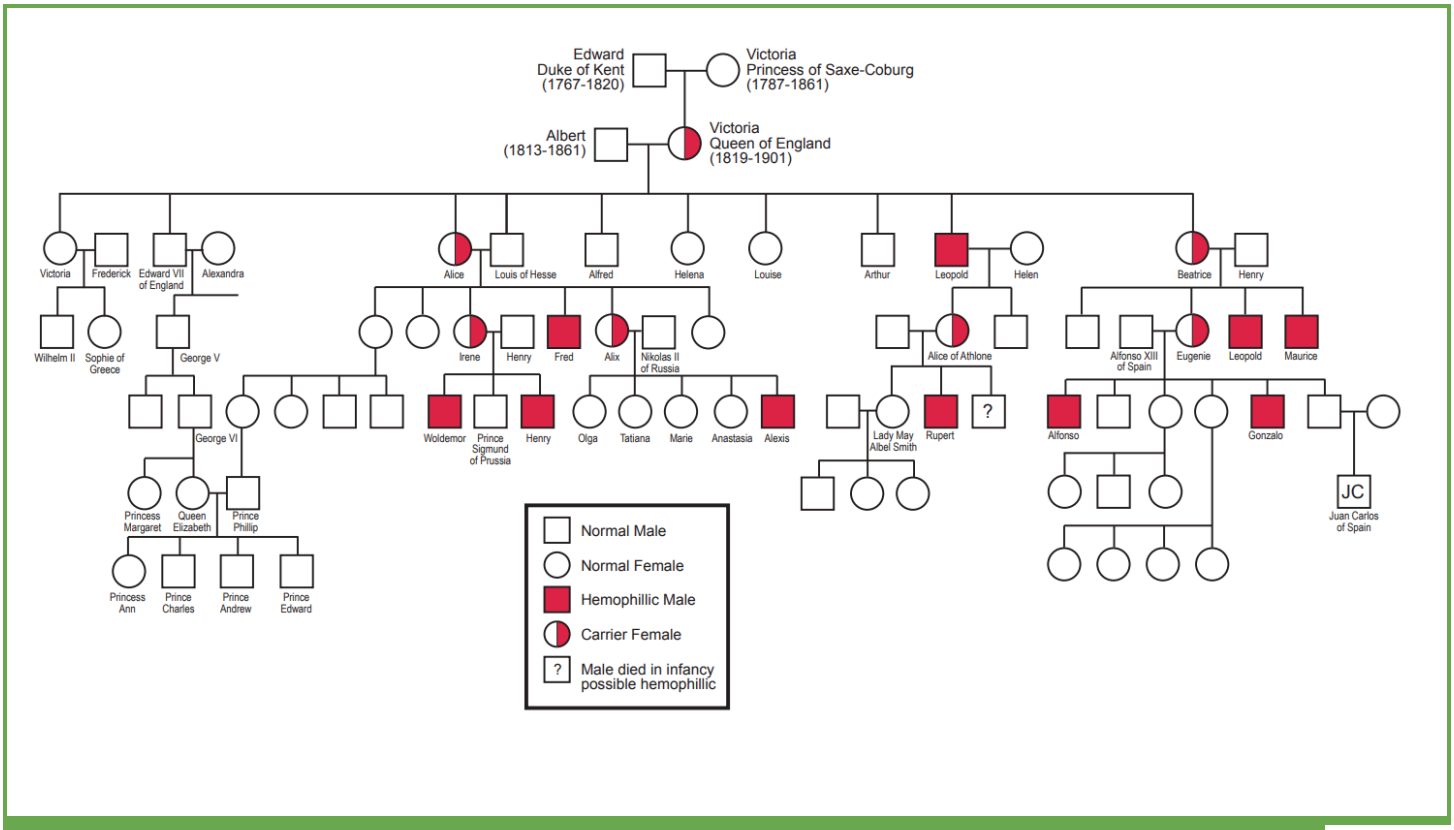
- Check sheets from Friday
- Pedigree 2, **KEY (22-26 not relevant to us)**
- How do we get different alleles?
    - ~~**Watch Genes and Mutations**~~
    - Amoeba Sisters: Mutations
- Heredity Test Tomorrow (everything from agenda, February 13th-pedigrees)

Friday, February 23rd

- **Check** Incomplete dominance practice worksheet, **KEY (19 is wrong. Parent on side should be AA and 100% of the offspring are AO, type A blood)**
- **Pedigree charts** are used to track a phenotype through a family
    - The word pedigree is commonly used in some animals, especially dogs, to prove their heritage, or family history
    - A pedigree is a lot like a family tree
    - Symbols used in a pedigree



- Pedigree charts are frequently used to track genetic disorders and diseases within a family
- One of the most famous pedigree charts is the one that shows Hemophilia (blood does not clot correctly, also called bleeders disease) in the royal family of Great Britain.



Before genetic testing pedigrees were very useful for determining who in a family might be carriers of a recessive disease

- **Watch** video 1
- Watch video 2
- Complete Pedigree Practice Worksheet

Genetics Test Tuesday

Thursday, February 22nd

Review blood types from yesterday

Blood Type Punnett Square page

Incomplete dominance, co-dominance, polygenic traits

Incomplete dominance practice worksheet (complete for homework)

Wednesday, February 21st

Tuesday, February 20th

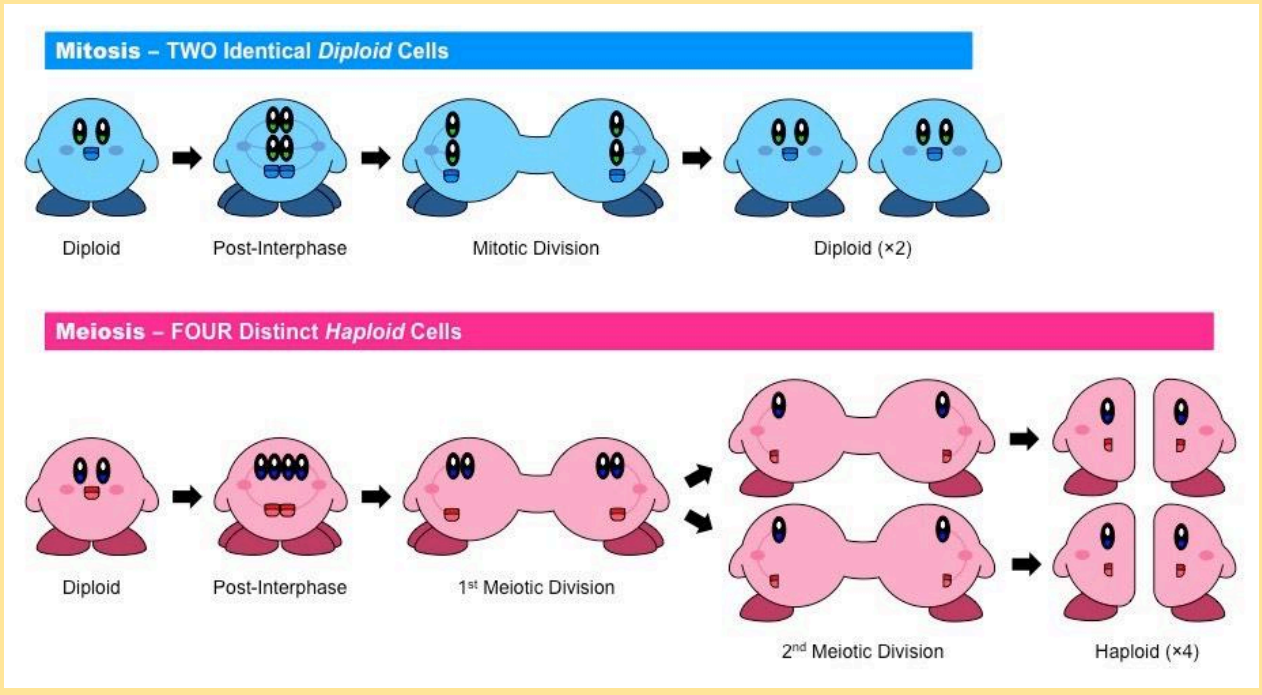
- Any questions over Mendelian Genetics Slideshow Questions

- Be practicing your vocabulary words (see agenda entry from Thursday)
- Complete Genotype/Phenotype Practice
- Check your work against Genotype/Phenotype Practice KEY
    - A tool frequently used to predict the traits of POSSIBLE OFFSPRING is called a PUNNETT SQUARE.
    - Punnett Squares are easy to use and you only need to know a few things
        - Genotypes of the parents
        - The relationship of the alleles (which ones are dominant and recessive, or if they show incomplete dominance)
        - Which genotypes result in which phenotypes
    - Punnett squares show all of the possible traits of an offspring. The offspring's actual traits will be one of those possible traits.
        - As an example, a Punnett square would predict 50% of a family's offspring would be male, and 50% would be female. However, I am sure you all know families that have all boys or all girls. The key is that each child has a 50/50 chance of being a male or female. What happens for the first child has no effect on the probability for the second child.
    - Watch **Learn Biology: How to Draw a Punnett Square**
    - A great **wikihow on Punnett squares** if you need to look back
    - In class practice worksheet #1.
    - Check practice #1 against the key
    - Punnett square homework

Thursday, February 15th

- Body cells (for growth and repair) are made by a process called MITOSIS. A body cell can make an exact duplicate of itself.
    - Human body cells have 23 PAIRS of chromosomes for a total of 46.
    - As an example, YOU started out as a single cell. It copied itself to make 2 cells. They each copied themselves to make 4 cells, and so on. Eventually the DNA in the nucleus of each cell "told" some to become bone cells, some muscle cells, some nerve cells, some skin cells, etc.
- Human sex cells (egg cells and sperm cells, for reproduction) are made by a process called MEIOSIS

- Sex cells are NOT exact duplicates. Sex cells only get HALF of the genetic information (DNA) from the original cell
- Sex cells have 23 SINGLE chromosomes
- When sex cells join together, there is a full set of DNA again, half from the mom and half from the dad



- **Watch** the video clip about Mitosis from the Amoeba Sisters
  - **Watch** the video clip about Meiosis from McGraw Hill
    - Pay attention to the process (what is happening to the chromosomes, the cells), don't worry about the names of the stages. Mute it if that helps.
  - Chromosomes are made of smaller pieces called genes
  - Genes determine inherited traits
- Gregor Mendel was a monk who did his work in the mid 1800's.
  - This was before we knew about the existence of chromosomes and DNA
  - Studied traits of pea plants
  - Explored how traits were passed from generation to generation
  - He controlled which plants were pollinated by which other plant. He saved the offspring (peas) and planted and grew them to see how their traits compared to the parent's traits.
  - Observed some traits were stronger (dominant) than others (recessive)

        - Observed traits sometimes skipped a generation, but reappeared in later generations
        - Kept detailed handwritten records on his thousands of plants (no computers back then)
    - Terminology
        - **Genotype** - the combination of genes an organism has for a particular trait
            - **Homozygous** - having two copies of the same allele (AA, or aa). The organism is sometimes referred to as a purebred.
            - **Heterozygous** - having one each of two different alleles (Aa). The organism is sometimes referred to as a hybrid.
        - **Phenotype** - The appearance of an organism because of their genotype (what the organism looks like)
        - **Allele** - version of a gene (for example in his peas there were alleles for green peas and alleles for yellow peas)
            - **Dominant alleles** - the strongest of the alleles...causes the phenotype of the organism. Shown by a capital letter.
            - **Recessive alleles** - the weaker of the alleles...it's phenotype is not seen if there is a dominant gene also present. Shown by a lowercase letter.
            - Sometimes neither gene is stronger and you get a blend of the two phenotypes. (red flower + white flower = pink flower). This is called **incomplete dominance**.
            - Sometimes the alleles are equally strong and both phenotypes appear (red flower + white flower = red and white striped flower). This is called **codominance**.

Watch untamed science: Mendelian Genetics
View slideshow: Mendelian Genetics TAKE YOUR TIME AND LEARN
Complete and submit by Tuesday, beginning of class :Mendelian Genetics Slideshow Questions (in schoology)

Wednesday, February 14th
Interesting Heart facts

Genetics is the study of how inherited traits are passed from parent to offspring.

- Some words that may be new to you include
  - **Heredity** - the explanation for how traits are passed from parents to offspring
  - **DNA** - a special type of molecule found in the nucleus of most cells in an organism
  - **Genes** - segments of DNA that cause a trait in an organism
  - **Chromosomes** - groups of genes (really long strands of DNA) that are passed from parent to offspring (vid)

Watch **Amoeba Sisters Intro to Heredity**

Read **Biology for kids: Genetics**

- The nucleus holds the chromosomes
  - The chromosomes are the genetic instructions for everything that cell does and what kind of cell it is
- Organisms need to make more cells for three reasons
  - Growth
  - Repair
  - Reproduction
- Body cells (for growth and repair) are made by a process called MITOSIS. A body cell can make an exact duplicate of itself.
  - Human body cells have 23 PAIRS of chromosomes for a total of 46.
  - As an example, YOU started out as a single cell. It copied itself to make 2 cells. They each copied themselves to make 4 cells, and so on. Eventually the DNA in the nucleus of each cell "told" some to become bone cells, some muscle cells, some nerve cells, some skin cells, etc.
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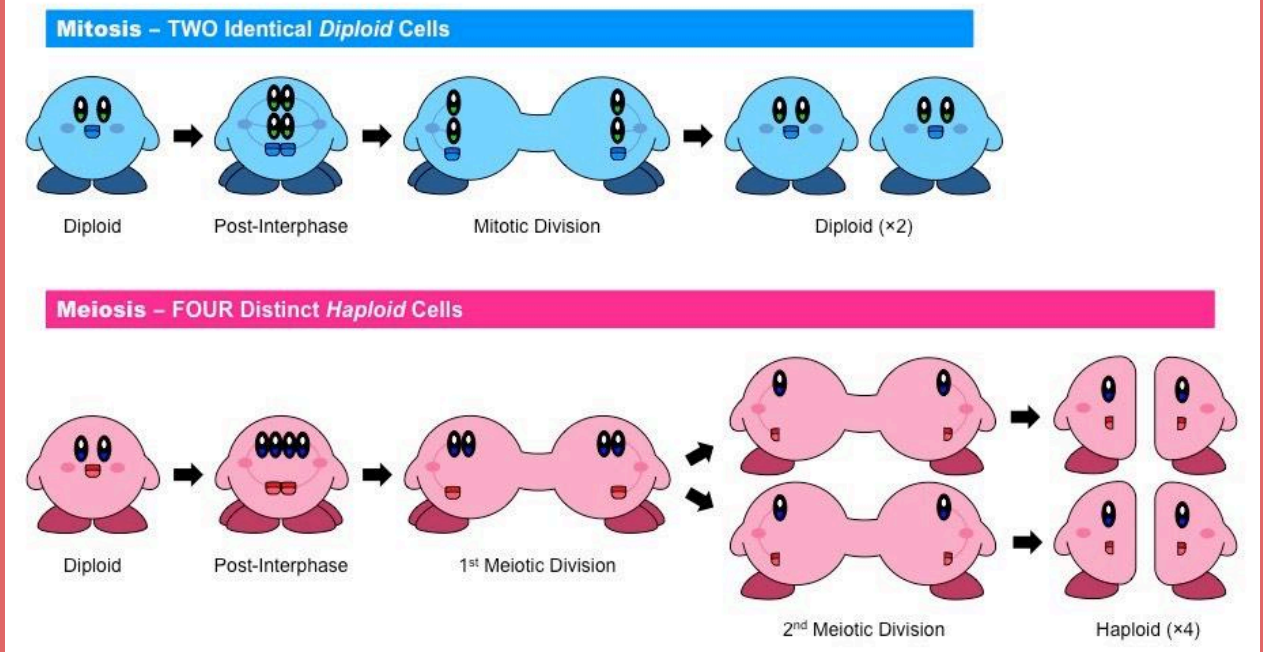
  - Sex cells are NOT exact duplicates. Sex cells only get HALF of the genetic information (DNA) from the original cell
  - Sex cells have 23 SINGLE chromosomes
  - When sex cells join together, there is a full set of DNA again, half from the mom and half from the dad



- **Watch** the video clip about Mitosis from the Amoeba Sisters

HW:Read **Biology for kids: Genetics** and complete questions for **Biology for kids: Genetics**

Tuesday, February 13th

1. ALL MAKE UP QUIZZES NEED DONE BY THURSDAY ACADEMIC ASSIST PERIOD
2. There are two types of traits (characteristics) that living things have
    a. inherited traits (from the genes you got from your parents)
        i. This includes instincts and biological characteristics like blood type, how your digestive system works, how a plant reacts to sunlight, why some snake venom is poisonous
    b. acquired traits are the things you have learned how to do or changed about yourself (blue hair, holes in your ears, scary red contacts, strange dog grooming, ability to read or play the trumpet or ice-skate)
3. View slideshow, **inherited vs. learned traits**.

4. Complete **Acquired vs. Inherited Traits Graded Practice** (looks like a schoology quiz). This is graded for correctness.
5. Watch **Amoeba Sisters Intro to Heredity** (about 10 minutes, use your headphones or watch in small groups if needed
6. Any time left over can be used to quietly study anything/work on other homework

Monday, February 12th

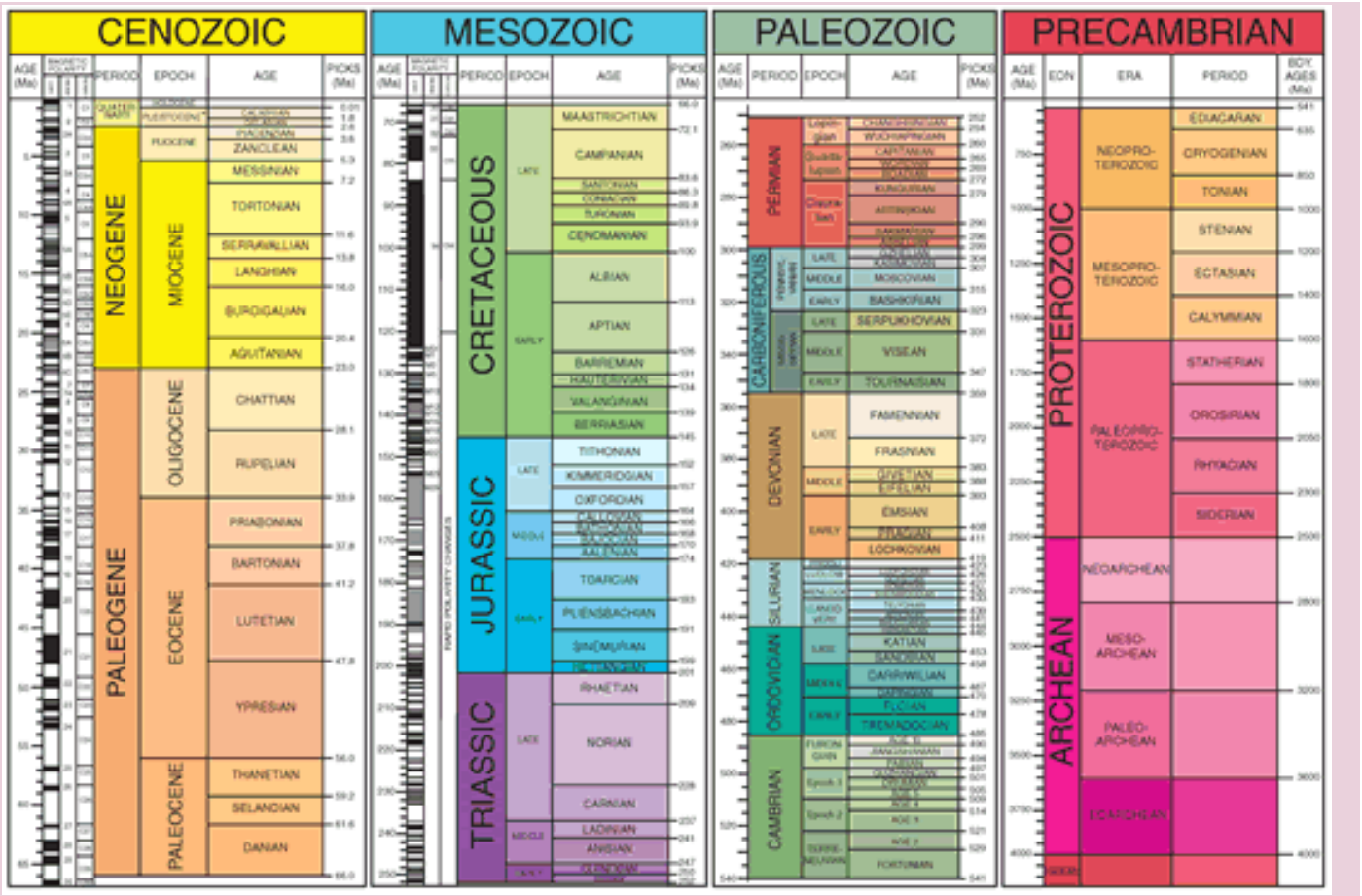
Cosmos: The things molecules do

Friday, February 9th

Asterisk activity
Quiz

Thursday, February 8th

Watch A brief history of geologic time



1.

Complete and check

Correlation and Index Fossils, KEY
Rock Layer Correlation using fossils, KEY
Complete Earth's History in Geologic Time: Fossils worksheet, **KEY**

Wednesday, February 7th

Correlation and Index Fossils
Rock Layer Correlation using fossils
Complete Earth's History in Geologic Time: Fossils worksheet
Quiz Friday (index fossils and correlation)

Tuesday, February 6th

Relative Dating quiz
Finish Rock Correlation Practice

Watch National Geographic's explanations of fossils
Watch Index fossils vid clip

Monday, February 5th

Check HW , Quiz tomorrow
Rock Correlation video clip (1st 4 minutes)
Rock Correlation Practice
~~Correlation and Index Fossils~~

Friday, February 3rd

Relative Dating Practice KEY

Thursday, February 2nd

~~Earth's History (see handout)~~
Fundamental Geological Principles
Watch Laws Useful for Relative Dating
Practice Online relative dating practice (basic…do together as a class)
Complete Relative dating practice (do with tablemates)

Wednesday, January 31st
test

Tuesday, January 30th

Study day (music students out for elementary schools field trip)

Friday, January 26th, Monday, January 29th

Stream tables…testing effects of slope, water volume, and flow rate on river development
20 drops/10 seconds, steep, 5 minutes reset then 20 drops/10 seconds, 5 minutes, shallow
Medium slope 20 drops/10 seconds, pics at 5 minutes and 10 minutes (don't reset, keep the dropper dripping and take a picture at 5 minutes)
Medium slope 30-40 drops/10 seconds, 5 minutes

Signatures for science, english, math, foreign language if it is not a "1"

Tuesday, January 23rd, Wednesday, January 24th, Thursday, January 25th

Work on Products of Erosion (Blank) Key
Products of Erosion links (Pictures and Websites)

Monday, January 22nd

- Log in to Clever.com
  - Select Gizmo
  - Select **River Erosion**
  - In your materials in Schoology you will find a googledoc called "River Erosion Gizmo". This is where you will be entering your answers.
  - READ THE DIRECTIONS CAREFULLY
  - This must be completed by the end of class. If not, it is homework.

Thursday, January 18th

Work on Products of Erosion (Blank) Key
Products of Erosion links (Pictures and Websites)
Dustbowl Writing Assignment (due Monday January 2Products of Erosion.docx2nd…Googledoc is in Schoology)
PBS Dust Bowl photo gallery

Wednesday, January 17th

Finish Surviving the Dust Bowl

Surviving the Dust Bowl worksheet

Dustbowl Writing Assignment (due Monday January 22nd…Googledoc is in Schoology)

PBS Dust Bowl photo gallery

Tuesday, January 16th

Surviving the Dust Bowl

Surviving the Dust Bowl worksheet

Friday, January 12th

- Check over homework
- Watch (together) this video clip about chemical weathering
- Look at pictures of weathering together. Some are of physical (mechanical) and some are of chemical weathering
- The Appalachian Mountains in eastern North America once towered more than 9,000 meters (30,000 feet) high—taller than Mount Everest! Over millions of years, weathering and erosion have worn them down. Today, the highest Appalachian peak reaches just 2,037 meters (6,684 feet) high.
- Open test so you can see what you did
- Products of Erosion (Blank) Key
- Products of Erosion links (Pictures and Websites)

Thursday, January 11th

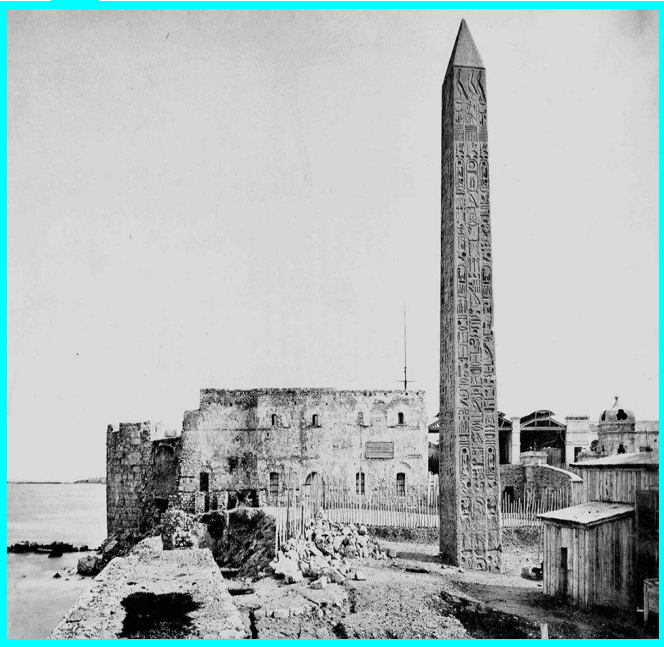
Test

HW: Read text pages about weathering and erosion and answer weathering questions (in Schoology…it is a googledoc)

Wednesday, January 10th

1. **Big Idea:** Earth's surface changes through plate tectonics and weathering & erosion\
2. weathering and erosion
    a. Weathering (breaking down of rock, either by physical or chemical means)
    b. Erosion is moving the sediments to a new location
3. Chalk and Salt shake up
4. Watch (together) this video clip about physical weathering
5. ~~Watch (together) this video clip about chemical weathering~~
6. ~~Look at pictures of weathering together. Some are of physical (mechanical) and some are of chemical weathering~~
7. Cleopatra's Needle
    a. in Alexandria, created about 1460 BC (pic 1 after 3000 years)
        i. Climate: dry, warm, no pollution
    b. Relocated and placed in New York in 1881 (pic 2 after 100 years in US)
        i. Climate: wet, fluctuating temperatures, pollution

c. Enlarge and compare the details in the carvings
   i.
d.

8.  
9. Cool Fact

~~The Appalachian Mountains in eastern North America once towered more than 9,000 meters (30,000 feet) high—taller than Mount Everest! Over millions of years, weathering and erosion have worn them down. Today, the highest Appalachian peak reaches just 2,037 meters (6,684 feet) high.~~

Tuesday, January 9th

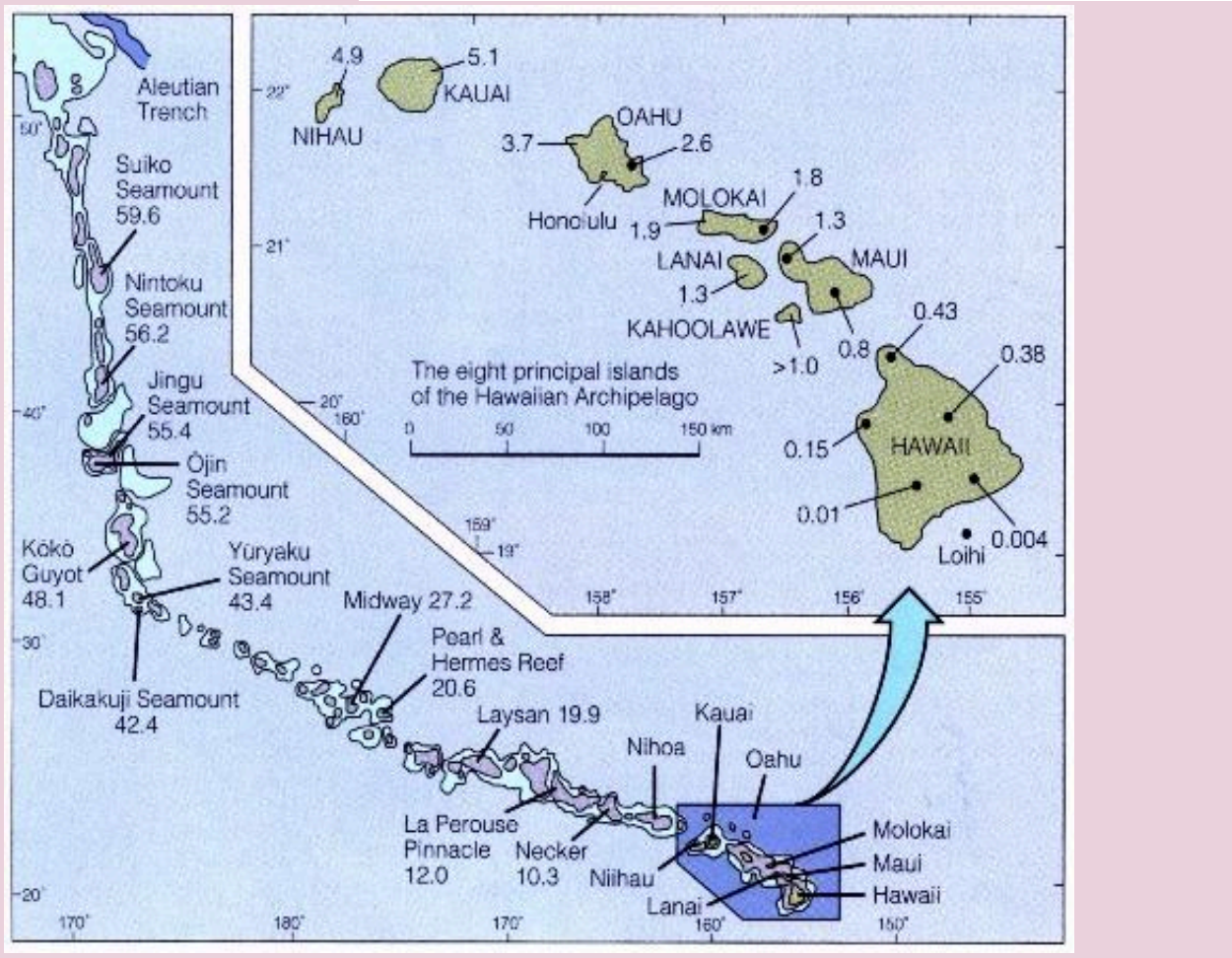
- Test moved to Thursday, will include earthquakes also
- Virtual Earthquake
  - Click execute virtual earthquake
  - Read as you go
  - Choose any city you want from the list
  - Screenshot the certificate at the end and submit to Mr. Hohman through the Googledoc in Schoology
  - When you are done, you should be able to
    - Know the difference between S waves and P waves
    - Know the difference between focus and epicenter
    - How to read seismogram
    - Know what is needed to find the epicenter

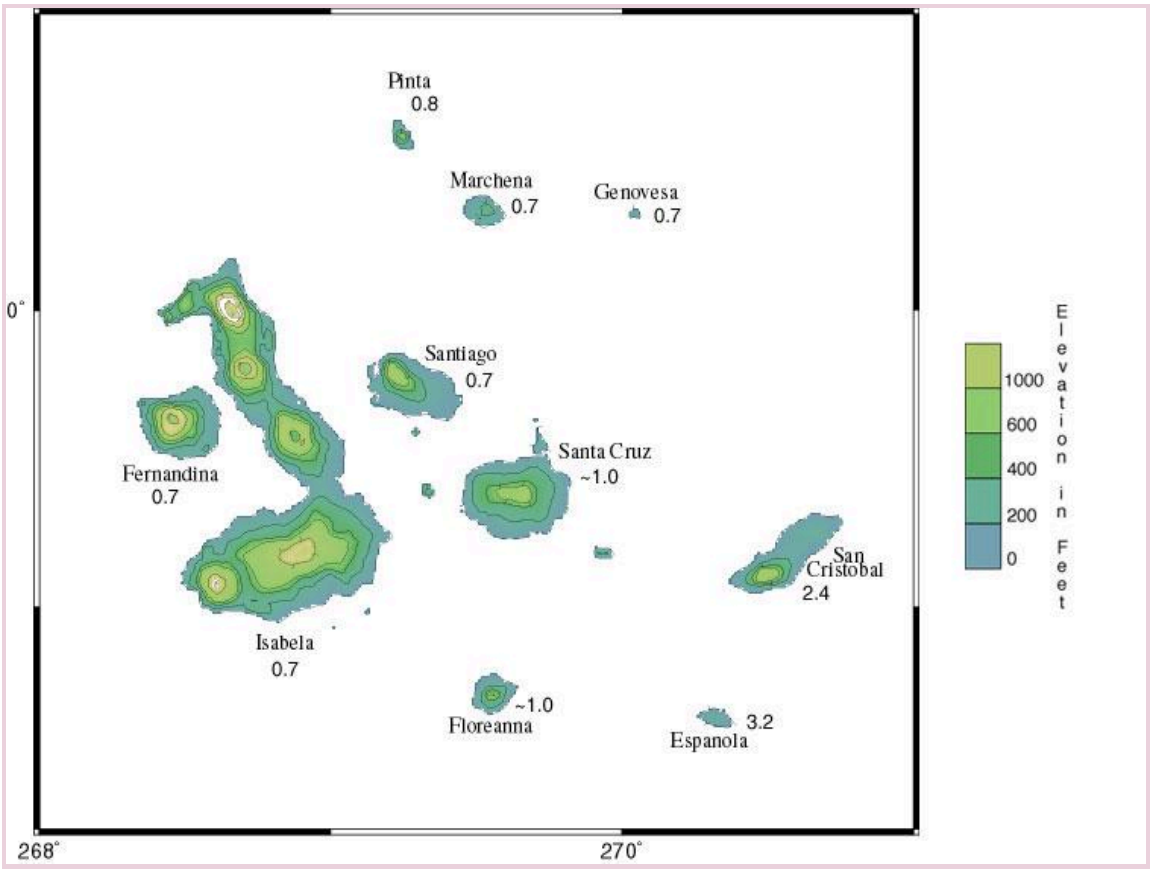
- Know what the Richter scale is and how it works

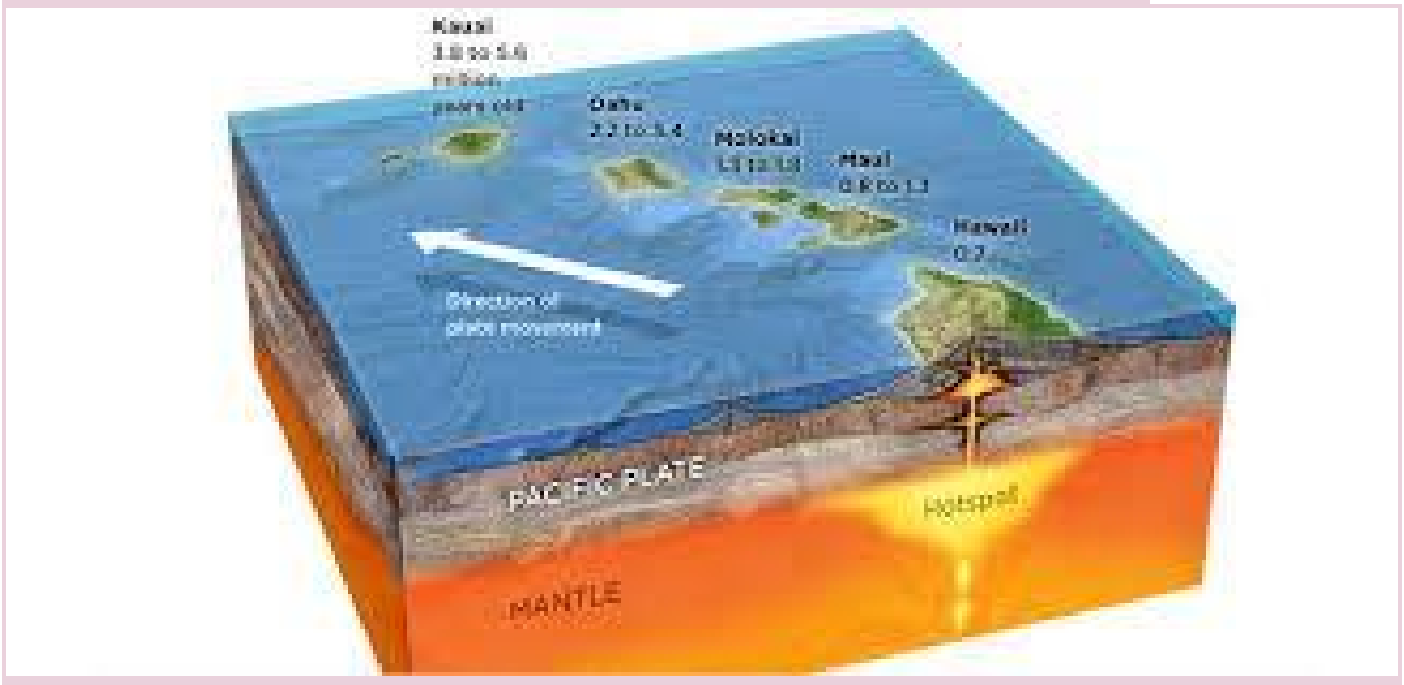
Monday, January 8

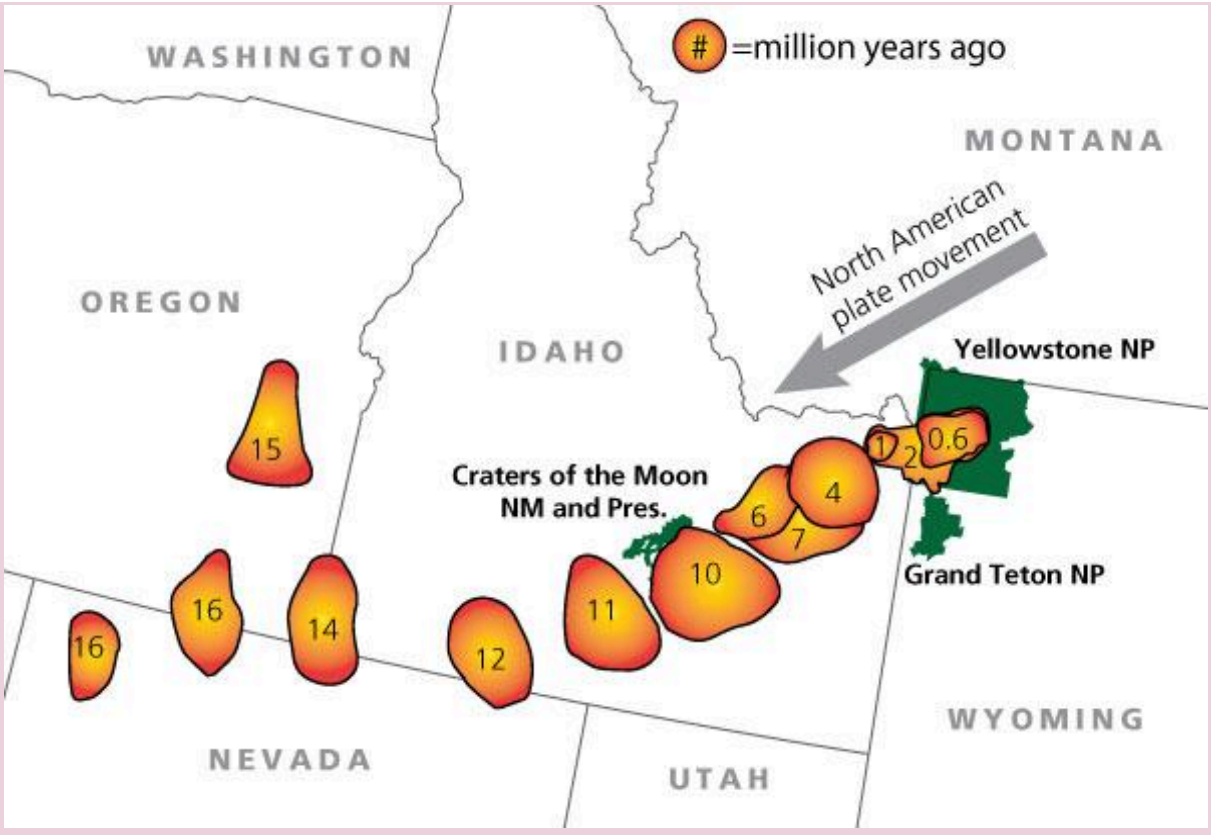
Video Life of a hot spot volcano
Hot Spot Activity
Review guide - not an assignment but woud be a really good idea ·(test Thursday)

Friday, January 5th




Pinta
0.8
Marchena
0.7
Genovesa
0.7
0°
Santiago
0.7
Santa Cruz
~1.0
Fernandina
0.7
San
Cristobal
2.4
Isabela
0.7
~1.0
Floreanna
3.2
Espanola
268°
270°
Elevation in Feet
1000
600
400
200
0

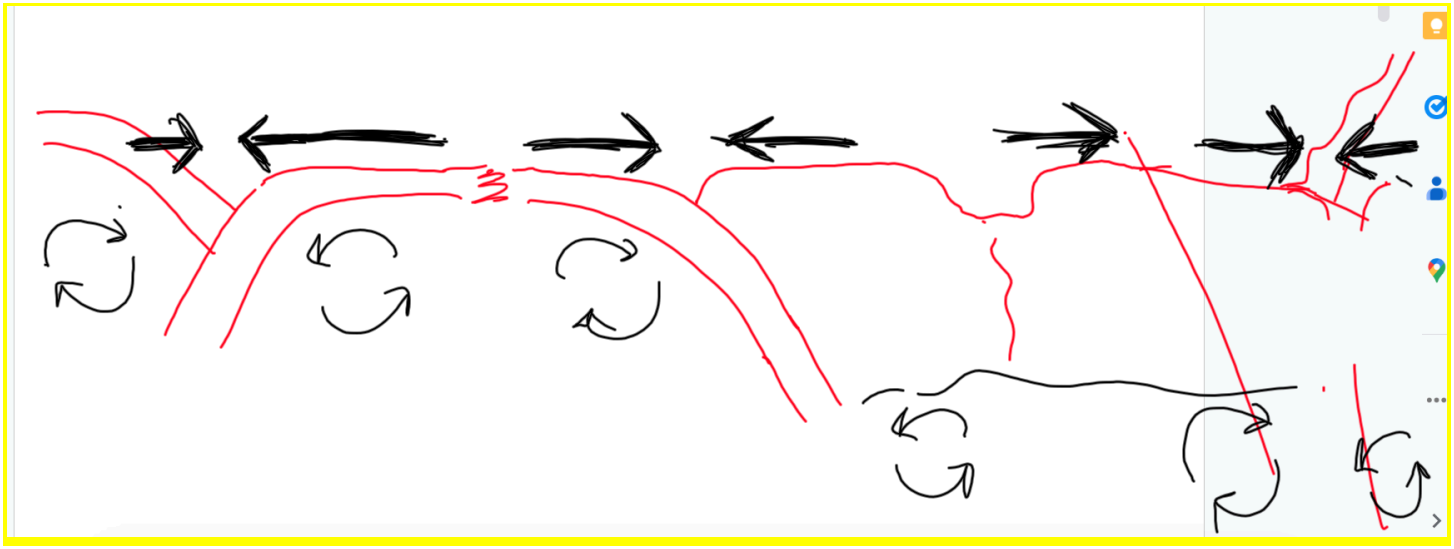

Direction of
plate movement
PACIFIC PLATE
MANTLE



Video How a hot spot forms
Video Life of a hot spot volcano
Why Hawaii's Volcano is so unusual
Finish any diagramming you did not finish last week

Thursday, January 4th

New Seats
Clean out folder
2nd semester goals (complete in Schoology)
Add convection currents and labels from table to diagram
Japan Earthquake discussion, United States Geological Survey



Monday, December 18th-Wednesday, December 20th

Plate tectonics clip (convection, plate boundaries),
fill in Boundary Types Summary Page/DiagramKEY
Plate boundaries diagram
Iceland eruptions discussion

Thursday, December 14th and Friday, December 15th

Exam

Wednesday, December 13th

Exam notecard day

Monday, December 11th and December 12th

Any questions for the exam?
Friday, 2nd and 3rd period students that go to the high school report to my room instead of the teacher in yellow to take the 2nd part of the exam

Student	Per 7 teacher	Per 8 teacher
Ike	Murrey	Garrity
Umesh	Morrissey	Asmo
Audrey M	Kaeser	Murrey
Yashwin	Murrey	Garrity
Shreyansh	Kaeser	A. Renner
Madelynne	Asmo	Garrity
Eliana	Kaeser	Murrey
Rachel P	Asmo	Garrity
Ivy	Asmo	Garrity
Xavier	Asmo	Yuen
Anoki	Dalby	Yuen
Eva R	Asmo	Garrity

Paleomagnetism video clip
Seafloor spreading simulation
Activity 1, Seafloor Spreading (together)
Online: Activity 2, Mid-Ocean Ridge
Complete NOAA activities questions

~~Plate tectonics clip (convection, plate boundaries)~~
~~fill in Boundary Types Summary Page/Diagram~~

Friday, December 8th
Exam review packet check
KEY

Thursday, December 7th

Finish gizmo

What we know about plate tectonics

Paleomagnetism video clip

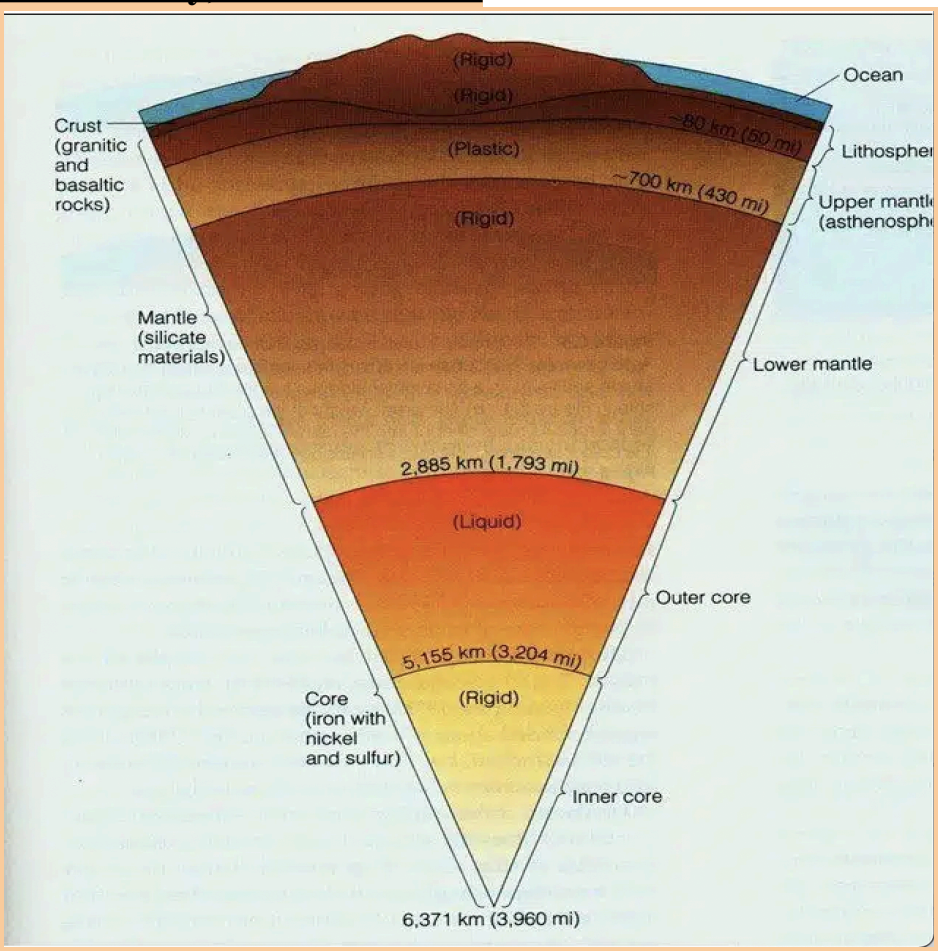
Seafloor spreading simulation

Activity 1, Seafloor Spreading (together)

Online: Activity 2, Mid-Ocean Ridge

Complete NOAA activities questions, **KEY**

Wednesday, December 6th



Compositional layers are on the left (divisions are based on what they are made of). Functional layers are listed on the right (divisions are based on how they behave)

The lithosphere is broken into pieces called tectonic plates.
The asthenosphere is soft and moves slowly. There are convection currents. These currents push the plates around.

The outer core is molten iron and nickel. Movement of the molten material causes Earth's magnetic field.

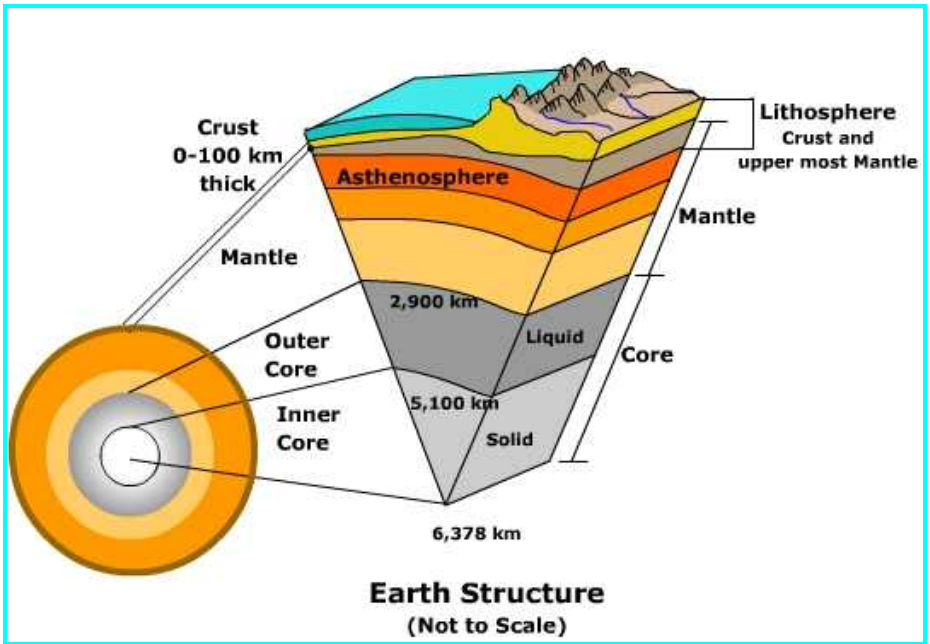
- ~~**Watch** What we know about plate tectonics~~
- Pair up
- Log in to Clever.com
  - Select Gizmo
  - Select **Building Pangaea**
  - In your materials in Schoology you will find a googledoc called "Building Pangaea. This is where you will be entering your answers.
  - There are several steps where you will need to take a screen shot and insert the picture into the googledoc. Partners will select different evidence (glacial grooves, shape, fossils, rocks)
  - READ THE DIRECTIONS CAREFULLY
  - This must be completed by the end of class. If not, it is homework.

Tuesday, December 5th

Half-life quiz
View Seismic Waves and Earth's interior video clip (2:30-5 and 8-12:20)
Earth's Interior Guided Reading Notes,
reading

Monday, December 4th

Key to today's extra practice,
Quiz tomorrow



~~View Seismic Waves and Earth's interior video clip~~
~~Earth's Interior Guided Reading Notes~~

Friday, December 1st

Uses of radioisotopes (video)
Radiocarbon dating
Work on handout….complete for homework
Video on solving half-life problems if needed

Thursday, November 30th

Radioactive decay is fission happening naturally

Results from yesterday

Element	*Symbol*	*Mass #*	*Radiation*	*Half Life*
Cobalt	**Co**	**60**	**Beta, Gamma**	**5.27 years**
Strontium	**Sr**	**90**	**Beta**	**28.8 years**
Cesium	**Cs**	**137**	**Beta**	**20 years**
Uranium	**Ur**	**238**	**Alpha, Gamma**	**4.5 billion years**
Plutonium	**Pu**	**239**	**Alpha, Gamma**	**24,100 years**
Americium	**Am**	**241**	**Alpha**	**432 years**
Radium	**Ra**	**226**	**Alpha, Gamma**	**1600 years**
Barium	**Ba**	**139**	**Beta**	**82 minutes**
Iodine	**I**	**131**	**Beta, Gamma**	**8 days**
Iridium	**Ir**	**192**	**Beta, Gamma**	**74 days**
Phosphorus	**K**	**32**	**Beta**	**14.29 days**
Carbon	**C**	**14**	**Beta**	**5700 years**
Radon	**Rn**	**222**	**Alpha**	**3.82 days**
Note: Shaded Entries Would Be Ideal Choices For Radiological Weapons				

Sources: Walter Scheider, *A Serious But Not Ponderous Book about Nuclear Energy* (Ann Arbor, Mich.: Cavendish Press, 2001), 164.[10]; and, Armed Forces Radiobiology Research Institute, *Medical Management of Radiological Casualties* (Bethesda, Md.: Military Medicine Operations Office, December 1999), 118-139.[11]

radiometric dating Video
Practice Problems
Video on solving half-life problems if needed after you leave

Wednesday, November 29th

Pass out last part of exam review guide
How do we know the age of things
Half-Life Lab

50	24	13	6	4	2	1	1
50	24	10	6	3	1	0	0
50	24	14	8	4	2	1	1
50	25	14	8	4	3	0	0
50	22	11	6	3	1	1	0
50	24	11	5	3	1	0	0
50	26	13	6	3	1	1	0
50	23	12	6	3	2	1	0
50	22	11	5	2	1	1	0
50	27	12	5	2	1	0	0
50	27	11	6	3	2	1	1
50	23	12	7	5	3	1	1
50	28	15	9	6	2	1	1
50	22	10	5	2	1	0	0
50	23	8	4	2	1	0	0
50	27	14	7	3	1	1	0
50	23	14	8	4	2	1	1
50	28	15	8	5	2	1	0
50	25	25	7	3	2	1	0
50	29	15	8	4	1	1	1

50	25	8	5	3	1	0	0
50	29	16	9	5	2	1	0
50	25	9	6	3	1	1	0
50	26	12	6	4	2	1	0
50	25	11	6	3	2	1	0
50	23	12	5	3	1	0	0
50	25	14	6	3	1	1	1
50	19	11	6	3	1	1	1
50	20	10	5	2	0	0	0
50	27	13	7	3	1	0	0
50	20	10	5	2	1	0	0
50	23	13	8	4	1	1	1
50	24.46875	12.45214844	6.375	3.25	1.4375	0.65625	0.3125

radiometric dating Video
Practice Problems

Tuesday, November 28th
Finish HR-diagram creation
Finish Birth of the Earth with Video questions

Monday, November 27th
Exam review reminder
Birth of the Earth
Video questions

Tuesday, November 21st

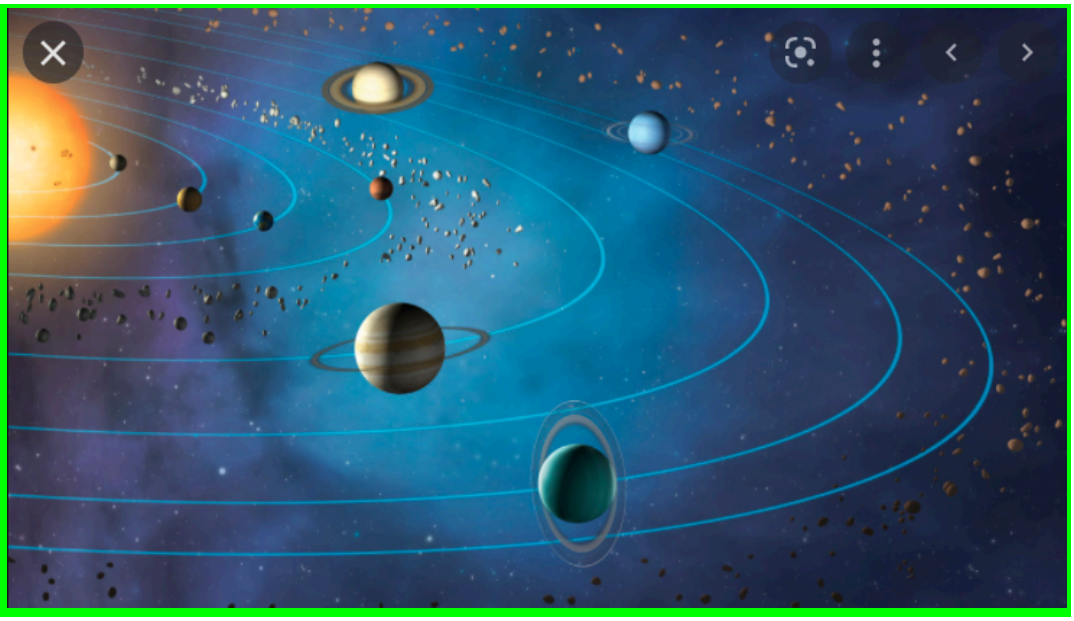
Quiz

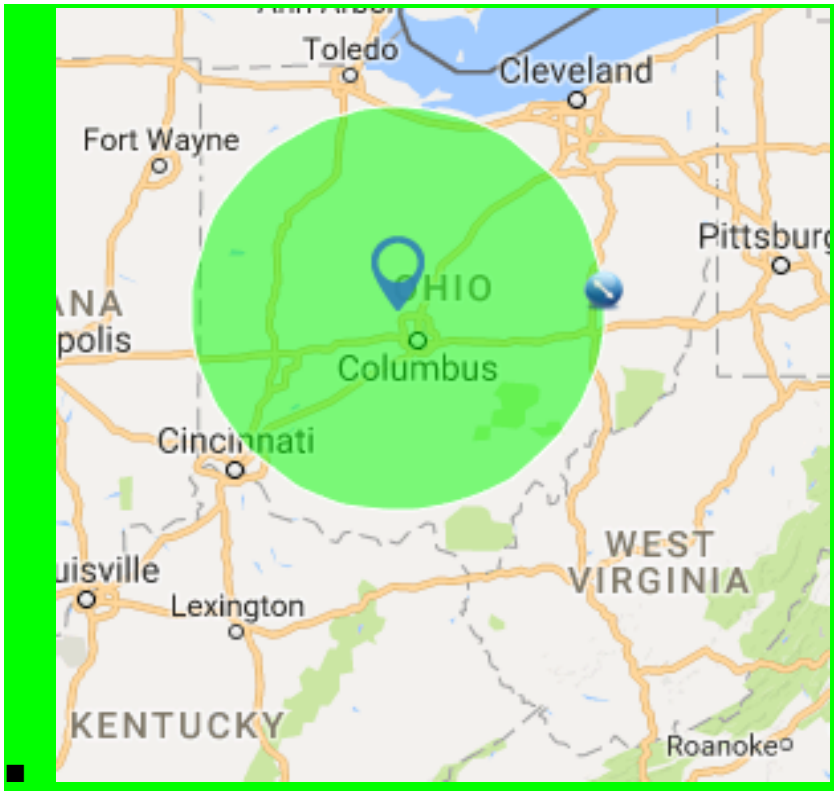
Notes about stars

Finish HR-diagram creation

Monday, November 20th

Size of the Universe and Life of a star

- Scale 1 mm = 1 billion miles
  - 
  - Based on the scale (1mm =1 billion miles), you would have to go over 100 miles away to get to the nearest galaxy.



-
- Orion...things we see in space from Earth are not as they appear
- ~~Our Solar System to scale~~ clip
- Scale of the universe clip
- Life of a star video clip
- Notes about stars

Big Bang Quiz tomorrow : what is it...describe the 3 supporting pieces of evidence

I. What is the big bang theory
   A. state it
   B. describe the progression of matter formation ---> galaxy formation
      energy → quarks, gluons, leptons, electrons → protons, neutrons → atoms of H and He →nebula → stars → heavier elements (by fusion in and death of stars)

II. Evidence: Background Radiation
   A. universe was hotter in the past

III. Evidence: Abundance of Hydrogen and helium

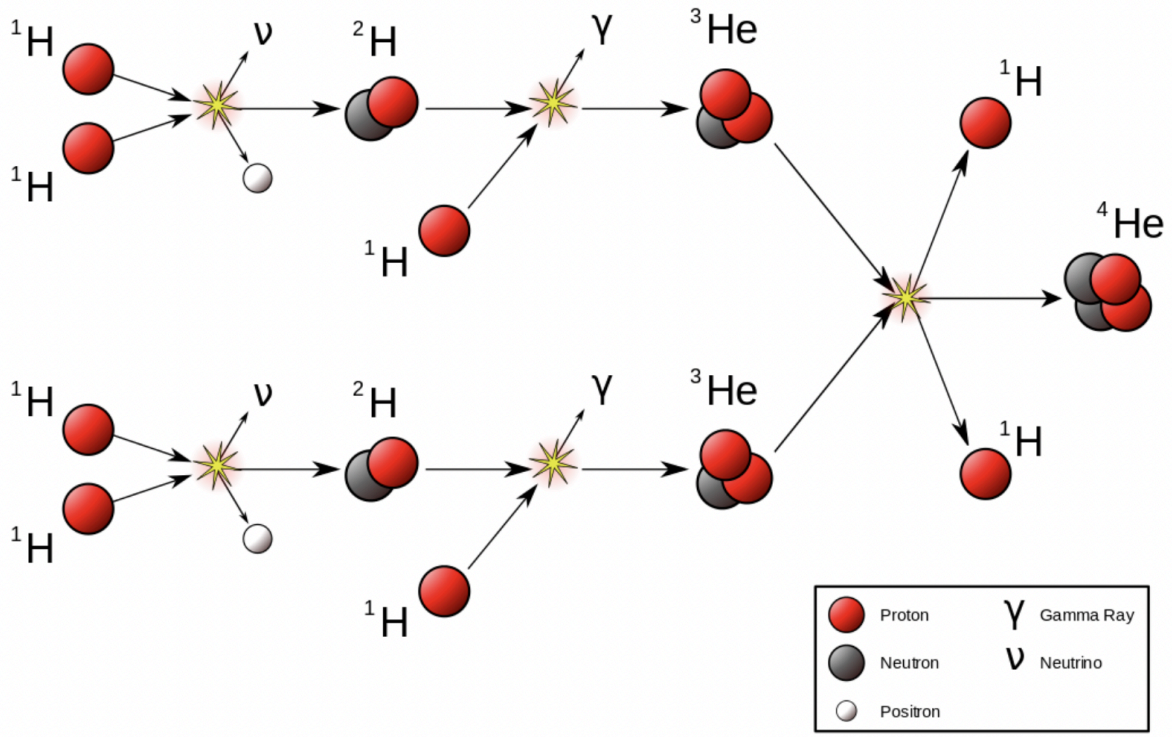
A. measured amts today similar to mathematically predicted amounts from model
B. temps and pressures only existed for a short time to cause fusion of simplest elements (H to helium). Heavier elements could not form because it became too cool too fast and not little pressure because it expanded quickly

IV. Evidence: Expanding Universe
A. Red-shift of most galaxies
B. Hubble's Law…describe it AND the idea that if you go back in time everything gets closer together

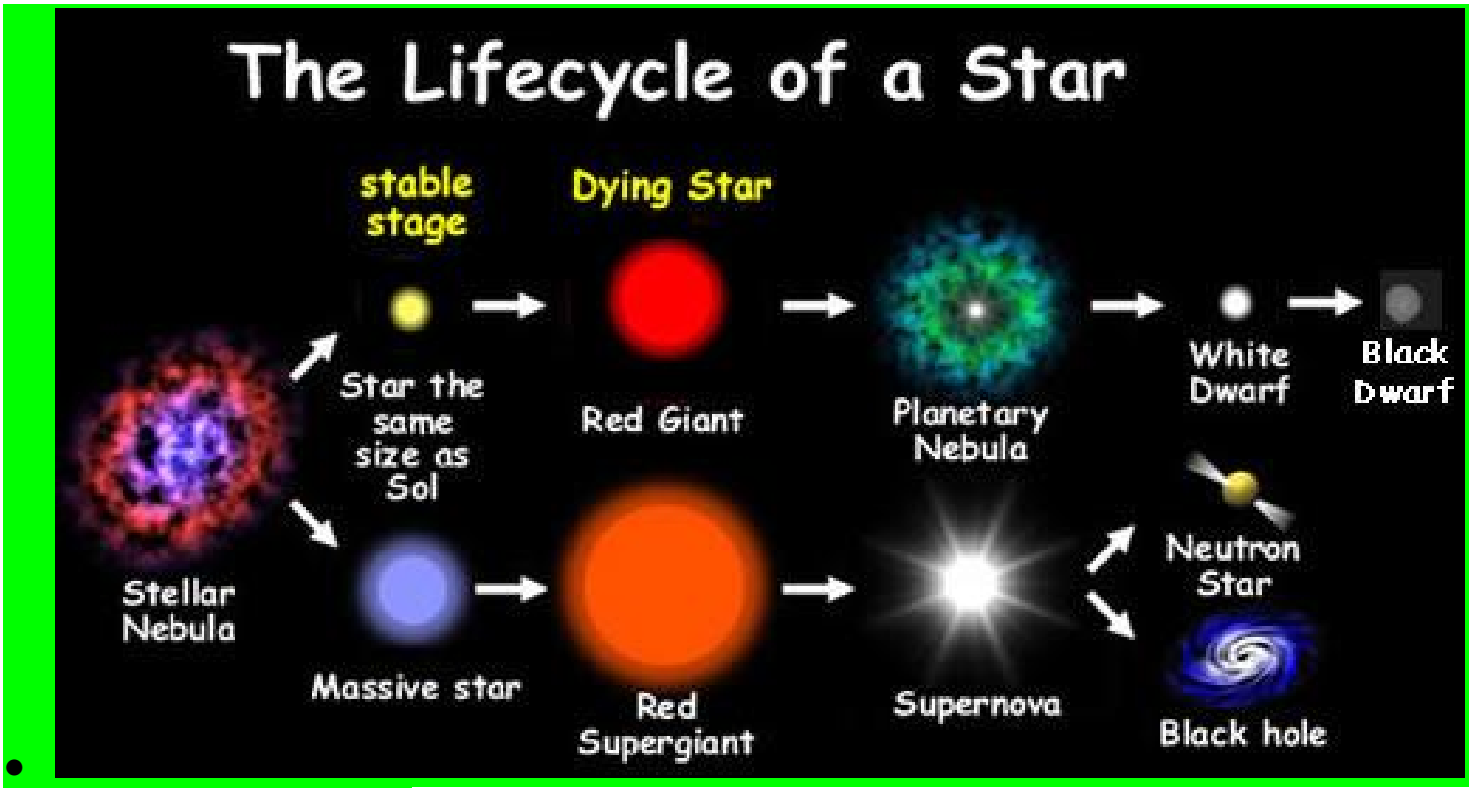
Friday, November 17th

- Most of the matter in the universe is concentrated in stars
- Stars are mostly hydrogen and helium. Abundance of elements in the universe: Hydrogen(74%), Helium (24%), Oxygen (1%)
- Temperature needs to be about 16,000,000 degrees Celsius and 250 billion atmospheres of pressure for fusion to happen in our star (sun)...and at these conditions it happens very slowly.
- The Big bang model suggests that there should be mostly Hydrogen and Helium in the universe and very little other elements because the pressure and temperature did not remain high enough, long enough to fuse heavier elements.
- Complex version of fusion

Proton-proton chain reaction



- Version you need to know 4 H → 1 He + energy



- Elements forged in stars
- Big Bang Summary Page
- Exam Review Packet…due December 8th
- Exam is December 14th and 15th

Thursday, November 16th

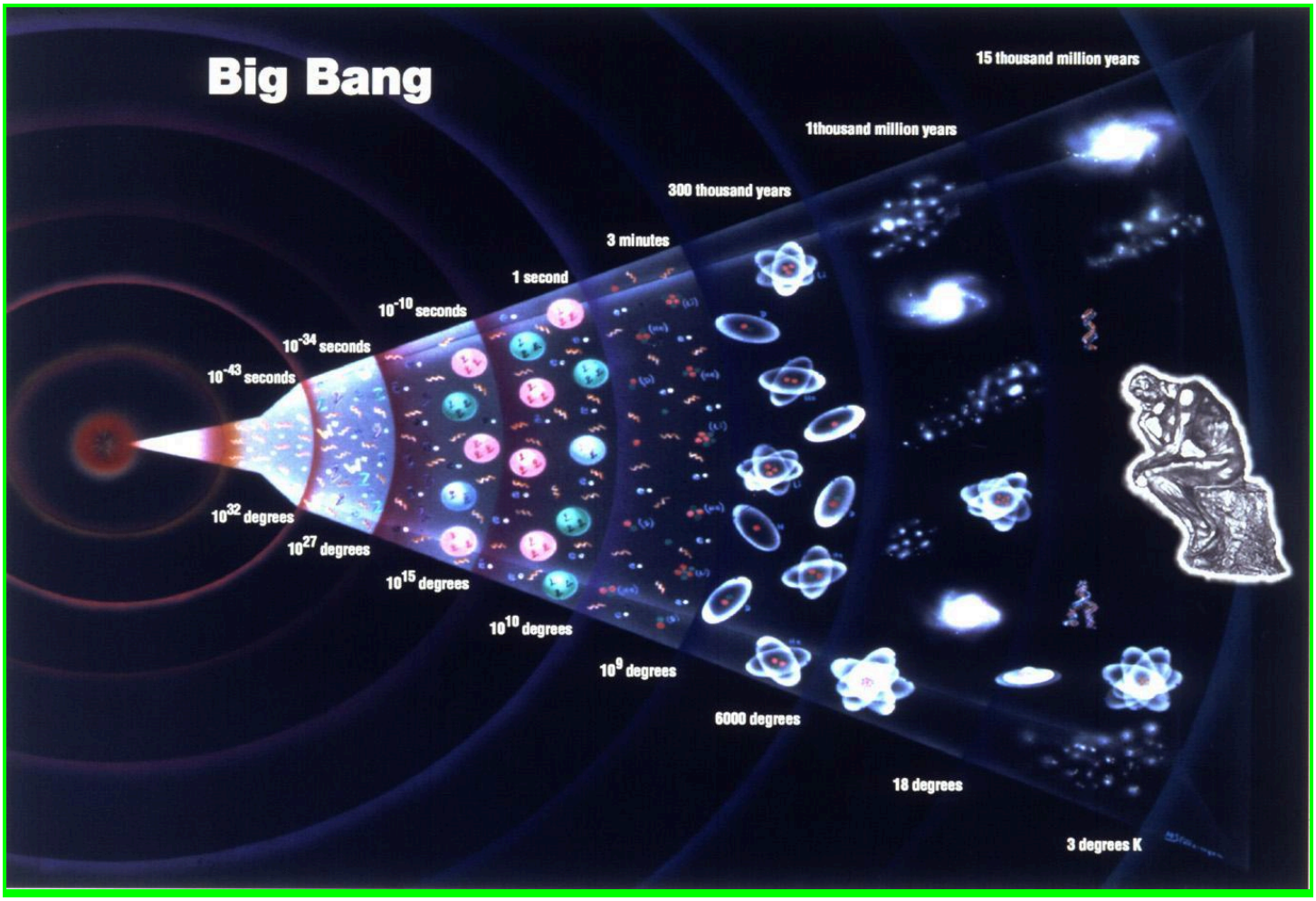
Go over questions from Hubble's Law, Graphing and questions and discuss
Red-Shift Simulation
Cosmic Background Radiation explained
Big Bang Summary Page
Test results, letter (see November 1st)

Wednesday, November 15th

Expanding Universe
Balloon Activity
Hubble's Law, Graphing and questions and discuss
~~Big Bang Summary Page~~

Tuesday, November 14th

Big Bang diagram…….I see, I think, I wonder



Big Bang clip

~~Big Bang Summary Page~~

Monday, November 13th

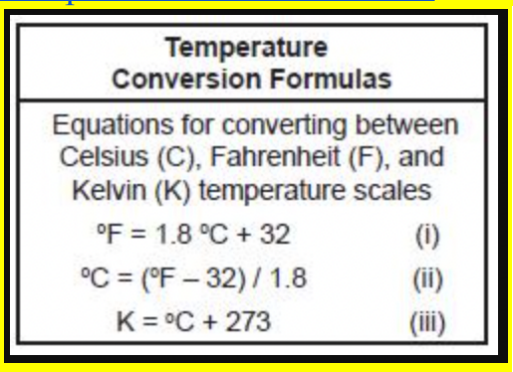
Test

Friday, November 10th

Check temperature conversion homework, Key
Specific Heat Capacity Gizmo
Test Monday

Thursday, November 9th

Check Homework, KEY
Finish Heat packet
Heat packet questions
Heat Capacity Demo
Temperature scale worksheet and conversions



Wednesday, November 8th

Go over Heating Curve Explanations and Practice, KEY
Heat packet
Heat packet questions

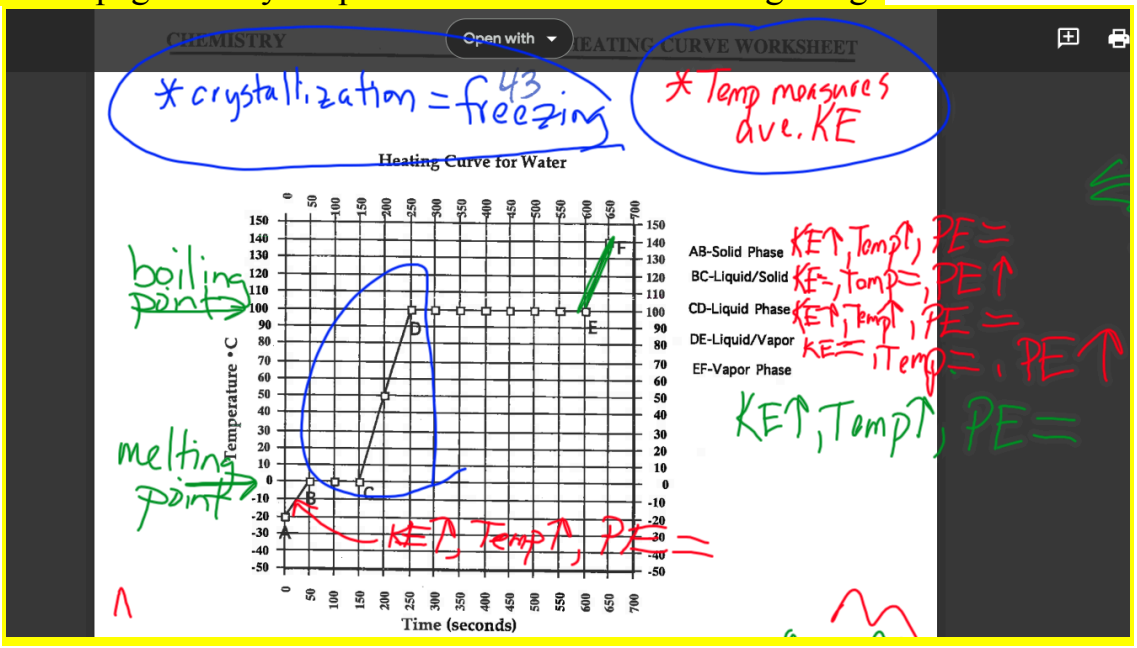
Tuesday, November 7th

Test Monday over types of matter, density, reading solubility curves and heating (curves, temperature scales, etc…will continue this topic Wednesday and Thursday)

Monday, November 6th

- Plot Heating Curve Data
  - Time x-axis go by 1's
  - Temp y-axis go by 2's
  - Connect the dots when completed
  - Turn in
- Heating Curve Explanations and Practice (scroll to see more)

- Label page 43 in your packet to match the following image



  - Flat areas are where there are 2 states (phases) of matter and there is a phase change happening (freezing, melting, condensing, boiling)
  - Sloped areas are where this a single state (phase) of matter and there is a temperature change occurring (heating up or cooling down)
  - When the temperature is changing that means the KE is changing (remember KE has to do with the motion of the particles).
  - When the temperature is NOT changing that means the PE is changing (remember PE has to do with position of the particles (locked in position, random, far apart)
  - Complete the packet for Wednesday
    - Skip number 8 on the first page and number 13 on the last page

Friday, November 3rd

Heating Curve Lab (collect data)

Thursday, November 2nd

Collect Solubility Graph and questions, KEY
Review letter requirements (How to write a business letter)
Due beginning of class Monday
Check homework from Monday (density page 2nd side)

Heating and Cooling Curve video clip
~~Heating Curve Explanations and Practice~~

Wednesday, November 1st

- Today you will be using your knowledge of the properties of matter to recommend a sorting process for a recycling facility.
- You are pretending that you are the owner of the OWL recycling Factory. (see handout: The Recycling Letter) You are going to write a business letter to Mr. Smith of the city of Westminster describing the process that your company would use to separate their materials.
    - You can put anything you want in your factory that exists and seems reasonable (a million plastic eating mice not so much)
- Your letter must be written in the appropriate format for a business letter. The following link tells you how to do so correctly. (Make up an address by the way)
    - How to write a business letter (DO NOT click continue at the bottom of the web page where you see "Continue".
    - Formatting and grammar are expected to be exceptional.
- Your document is already in Schoology in the materials.
- Your letter is due by the beginning of class Monday. You have all period TODAY ONLY to work. You have a lot of time because I expect excellence.
- This will be a summative grade

Tuesday, October 31st

~~Check Density Worksheet 2~~
Complete Creating and interpreting solubility graphs AND questions for Wednesday, KEY
Balancing Requiz during Solubility graph work time
Density quiz Friday (10-15 minutes)

Monday, October 30th

Check Density Worksheet 2
Reading "How to read a solubility curve"
Density Worksheet 2 (finish 2nd side for Tuesday)
Balancing Retake Quiz Tuesday

Friday, October 27th
Density Worksheet 1
Density Worksheet 2 (finish 1st side for Monday)

~~Reading "How to read a solubility curve"~~
~~Creating and interpreting solubility graphs, KEY~~

Thursday, October 26th
Density activity: blocks

Wednesday, October 26th
Identify the following mixtures as homogenous or heterogeneous
Oil and water
Lemon juice and tea

- Honey and tea
- chocolate
- Coffee and cream
- Cookie dough
- Cereal and milk
- Oatmeal and raisins
- milk
- Orange juice
- Sugar and water
- Sugar and tea
- Soda

- Characteristics that are used for identifying pure substances
    - Color
    - Odor
    - Density
    - melting temperature
    - boiling temperature
    - Solubility

How to measure to the correct place value with your ruler (video in case you are absent)
Practice pages
Density activity: blocks

Tuesday, October 24th

Filter copper from Thursday
mixture or substance?
Types of Matter
Balancing Quiz
HW: Find 3 examples of each of the following in your home (element, compound, heterogeneous mixture, homogenous mixture) and enter on schoology by the time you get to class tomorrow (look in your garage, kitchen, bathroom, laundry room)

Thursday, October 19th

Collect homework
Single Replacement Reaction $CuCl_2 + Al$
mixture or substance?
Types of Matter
Balancing Quiz Tuesday (keys found on Tuesday, 17th for practice pages given)

Wednesday, October 18th

Cool Demos
Awesome Reactions video

Tuesday, October 17th

Check and finish balancing from yesterday (key)

Worksheet 1, Worksheet 2

More Balancing Practice (with key)

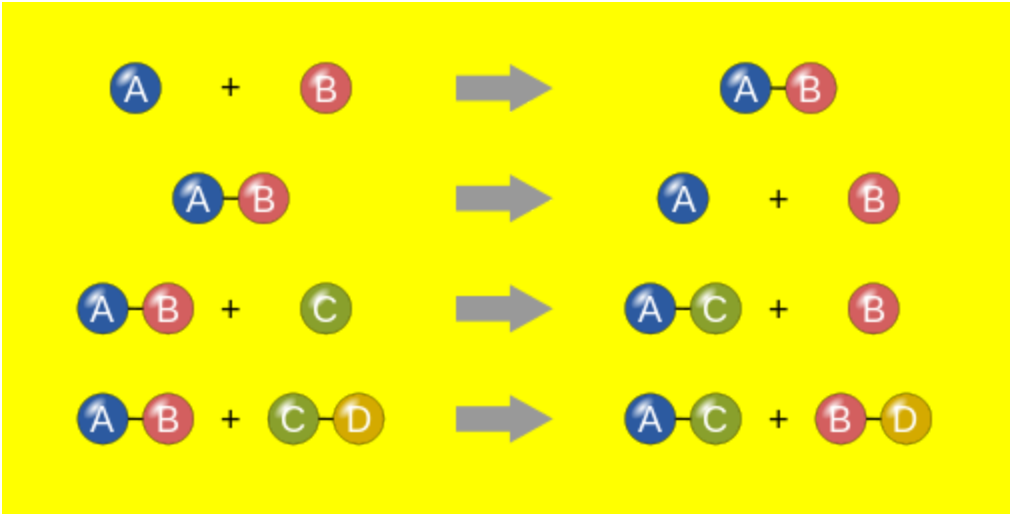
Even more balancing practice (with key)

Requizzes

Friday, October 6th and Monday October 9th and Monday, October 16th

Chemical reactions are processes by which substances interact to form new substances

- Chemical reactions can be expressed much like a math equation
  - Parts: reactants (the starting substances) , products (the ending substances), an arrow,→ read as "yields" (kind of like an equals sign
  - Law of Conservation of Mass
    - The law of conservation of mass states that mass in an isolated system is neither created nor destroyed by chemical reactions or physical transformations. According to the law of conservation of mass, the mass of the products in a chemical reaction must equal the mass of the reactants.
    - Conservation of Mass Video
    - Chemical Reaction types
      - synthesis: $Mg + O_2 \rightarrow MgO$
      - decomposition $H_2O \rightarrow H_2 + O_2$
      - Single Displacement: $Mg + HCl \rightarrow MgCl_2 + H_2$
      - Double Displacement: $NaCl + MgO \rightarrow Na_2O + MgCl_2$
      - Combustion: $C_xH_y + O_2 \rightarrow CO_2 + H_20$
        - NOT SHOWN IN PICTURES BELOW
      - Same order in picture form:



- Chemical Reaction Types Video **(kind of silly but you'll get the idea)**
  - When chemical reactions are written, they must:
    - Use correct formulas for molecules involved
    - Show all reactants and products (what substances are involved)
    - Show amounts of reactants and products (how much of each substance involved)

Worksheet 1, Worksheet 2

Balancing Reactions, simulation

Balancing Equations (video)

Balancing Equations (rules)

a. Count the number of atoms of each element in the reactants a products. A polyatomic ion appearing unchanged on both sides of the equation is counted as a single unit.
b. Balance the elements one at a time by using coefficients. A coefficient *is a small whole number that appears in front of a formula a an equation*. When no coefficient is written, it is assumed to be 1. It is best to begin with an element other than hydrogen or oxygen. These two elements often occur more than twice in an equation. You must not attempt to balance an equation by changing the subscripts in the chemical formula of a substance.
c. Check each atom or polyatomic ion to be sure that the equation is balanced.
d. Finally, make sure that all the coefficients are in the lowest possible ratio.

Another video about balancing

Work with tablemates to get as far as possible in your packet with the balancing practice

Thursday, October 5th
Naming quiz
Reaction sheet from double replacement reaction lab

Wednesday, October 4th
Double Replacement Reactions Lab
Blank Grid
Quiz Thursday over names to formulas, formulas to names

Tuesday, October 3rd
Check ionic naming homework page 1 and page 2
Naming Rules Summary
Mixed naming practice (complete as much as you want to prep for Thursday's quiz),
KEY
Prep for lab if time

Monday, October 2nd
Check covalent practice (bottom half)
Review rules for ionic naming
Complete (Naming practice)

Homework: ~~Mixed naming practice~~ Finish ionic naming and formula writing

Friday, September 29th
Finish Recovering Magnesium from Ocean "Water" Lab
Practice covalent compound naming and formula writing (Naming practice)

- Ionic Compound Naming
  - Distribute examples
  - Small groups look for patterns in the names and formulas to derive naming rules.
  - ~~What to do with group B metals~~

~~Practice ionic compound naming and formula writing (Naming practice)~~
Finish covalent practice for homework (bottom half)

Thursday, September 28th

- Recovering Magnesium from Ocean "Water" Lab (filter paper left to dry overnight)
- Covalent Compound Naming
  - Distribute examples
  - Small groups look for patterns in the names and formulas to derive naming rules.

Naming Rules:

1. **Covalent**
   a. **1st element keeps its name**
   b. **2nd element ending changes to -ide**
   c. **Both parts get a prefix that tells how many of an atom**
      i. **Mono, di, tri, tetra, penta, hexa, hepta, octa, nona, deca**
      ii. **Mono- is dropped from the first element**
2. **Ionic**
   a. **First element keeps its name**
   b. **2nd element ending changes to -ide**
   c. **ALL polyatomics keep their names (unchanged)**
   d. **NO prefixes**
   e. **Metals from the middle of the table (Group B/transition) get a Roman numeral that tells the charge of the metal I, II, III, IV, V**
   f. **When going from name to symbol you need to determine the charge on each part to determine how many you need of each (to cancel the charges)**

Wednesday, September 27th

Bonding quiz
~~Recovering Magnesium from Ocean "Water" Lab~~

Tuesday, September 26th

Quiz practice
~~Tutorial for naming~~
~~Mixed Naming Practice~~

Monday, September 25th

Finish Covalent Dot Diagrams practice if needed
Work on covalent bonding on previous handouts
Mixed practice
HW: covalent side only from Mixed practice
Quiz Wednesday: be able to draw both covalent and ionic bonds

Friday, September 22nd

Polyatomic quiz (2 mins)
Check Criss-Cross practice (2nd side), key
Covalent Bond animations
Covalent Dot Diagrams practice
You can fix anything you need to on the gizmo before Monday

Thursday, September 21st

1. Log in to Clever.com
2. Select Gizmo
3. Select the covalent bonds gizmo
    a. You will need to use the drawing tools quite a bit. If you are not great at it, ask your classmates for help.
4. The document with instructions is a google assignment in the schoology folder for today. It is titled "CovalentBondsSE". This is where you will be entering your answers.
    a. Please hit the submit button when finished
5. Finish for homework if needed
6. Polyatomic matching quiz (match name to symbol) Friday..Acetate, Sulfate, Carbonate, Nitrate, Ammonium, Phosphate, Hydroxide, Cyanide
7. Looking forward to seeing you Friday!

Wednesday, September 20th

polyatomic ions to recognize (quiz Friday...be able to match
Criss-Cross practice (2nd side), finish for homework if needed
~~Covalent Bond animations~~
~~Covalent Dot Diagrams practice~~
~~Work through Remainder of handouts (ionic parts)~~

Tuesday, September 19th

More Ionic bonding practice
What is a polyatomic ion?
polyatomic ions to recognize (quiz Friday...be able to match symbol to name)
Criss-Cross method for determining ionic compound formulas
video clip on criss-cross method in case you were absent or need a refresher
Criss-Cross practice (first side in class)

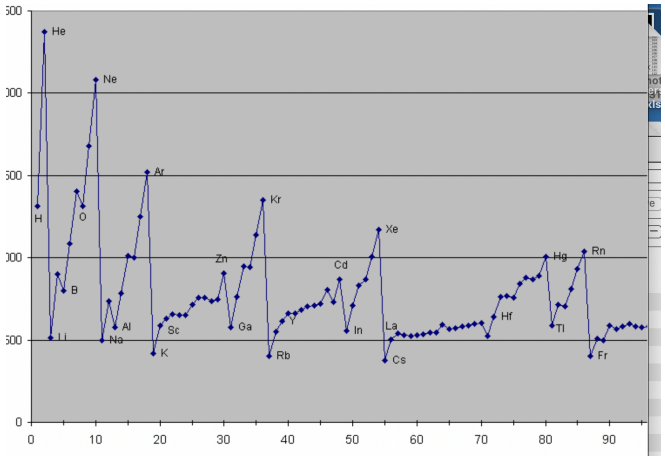
Monday, September 18th

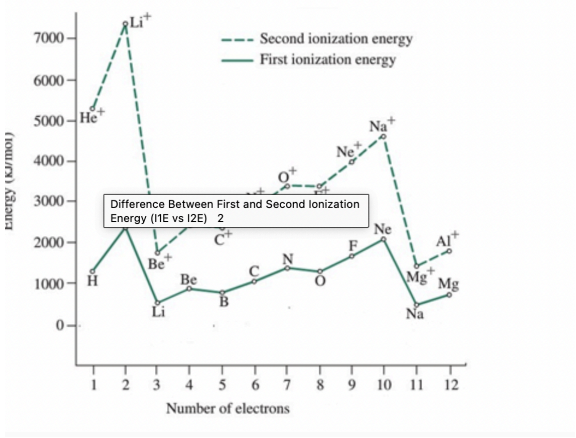
8. Log in to Clever.com
9. Select Gizmo
10. Select the ionic bonds gizmo
11. The document with instructions is a google assignment in the schoology folder for today. It is titled "IonicBondsSE". This is where you will be entering your answers.
    a. Please hit the submit button when finished

Friday, September 15th

Check homework
Work through Remainder of handouts (ionic parts)
Watch this video if you were absent or need a reminder
~~Use Perler beads to create ions (only use valence electrons, not all electrons)~~
~~Na + Cl, Mg + O, Al + N, Ca + P~~
NO HOMEWORK

Thursday, September 14th





See graphs above (or look at your own and think about the answers to these questions)

- Go over ionization graphs
  - Draw a vertical line where each period starts
  - What can you say about the 1st ionization energy of the noble gasses?
    - Why do you think this is so?
  - What can you say about the 1st ionization energy of the Group 1A elements?
    - Why do you think this is so?
  - What can you say about the 2nd ionization energy of the Group 1 A elements?
    - Why do you think this is so?
  - What can you say about the 2nd ionization energy of the Group 2 A elements?
    - Why do you think this is so?
  - In general, what is the trend in ionization energy as you move from one PERIOD to the next?
  - Why do you think it is harder to take away a 2nd electron from all elements? (you can see that the 2nd plot of energies is higher on the graph than the 1st plot…why is this so?)
- Types of Chemical Bonds Video (crash course)
- Today's handouts Complete 1st page, 1st side ONLY)

Tuesday, September 12th and Wednesday, September 13th

Configuration Quiz

Open and view C2A6 (atoms with more than one electron...includes a data table)

1. READ EVERYTHING WORD FOR WORD!!!!!
2. Read Investigation Step 2 and complete steps a, b and c on the graph paper provided.
    a. When you are done it will be a double line graph.
    b. Turn the paper hot dog style
    c. X axis go by 1's (atomic numbers)
    d. Y-axis go by 4's
    e. Use pencil so you can erase any mistakes. Accuracy matters.
    f. When you are done then go over it with colored pencils (2 colors, one for the first line, then one for the 2nd line...you literally plot the first data set and connect the dots. Then plot the 2nd data set and connect the dots)
    g. On the line for the first ionization energy:
        i. Label the noble gasses with red dots and their symbol (1st ionization line)
        ii. Label group 1A elements with blue dots and their symbol (1st ionization line)
    h. On the line for the 2nd ionization energy line
        i. Label group 1A elements with blue dots and their symbol (2nd ionization line)
        ii. Label group 2A elements with black dots and their symbol (2nd ionization)
3. Answer Chemistry to Go questions (p. 116 on the scan, C2A6) on the back of the graph. Questions 1,2,3,5 and 6 (all parts)

Monday, September 11th

Website Highlight, Morocco earthquake

Hurricane Lee, global jet stream map, Surface map

How to draw Lewis Dot Structures

2nd side of Lewis Dot Structure Practice (Dot Diagram Practice) (change last column to "dot structure")

Extra electron configuration practice to prep for quiz (key included)

Friday, September 8th

Check homework (Handouts...practice), KEY

Valence electron practice

Determining Valence Electrons from group numbers in the periodic table

~~How to draw Lewis Dot Structures~~

~~2nd side of Lewis Dot Structure Practice (Dot Diagram Practice) (change last column to "dot structure")~~

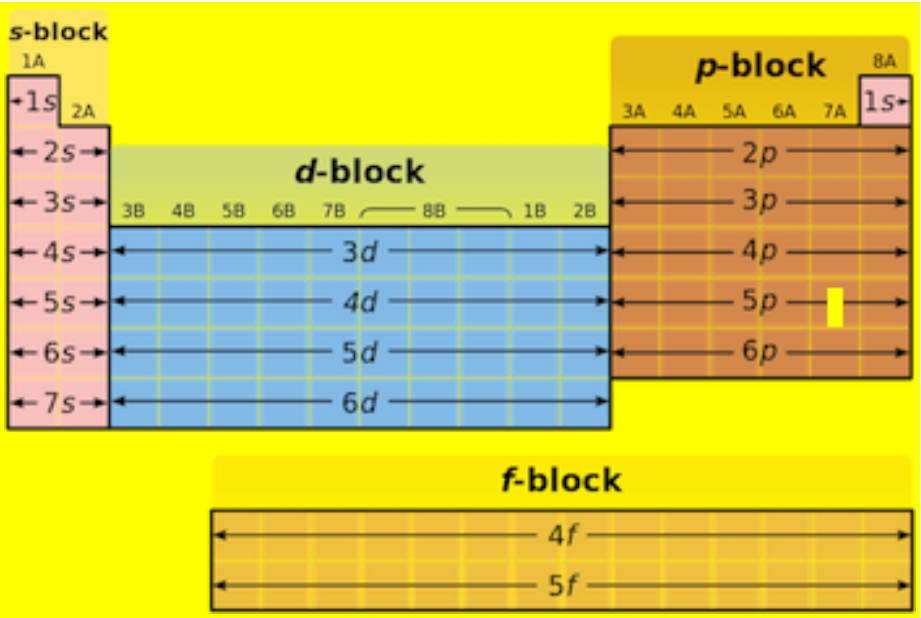
Thursday, September 7th

Model Quiz (about 5 minutes)
Check homework (Electron configuration practice) KEY
Khan: Nobel Gas Configurations
Handouts...practice

Wednesday, September 6th

Draw models for all elements in column 1 or column 7
Write configurations for each element in row 2 , then column 1

Group 1A	
Li	$1s^2 2s^1$
Na	$1s^2 2s^2 2p^6 3s^1$
K	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$
Rb	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^1$
Cs	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^1$
Fr	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6 7s^1$



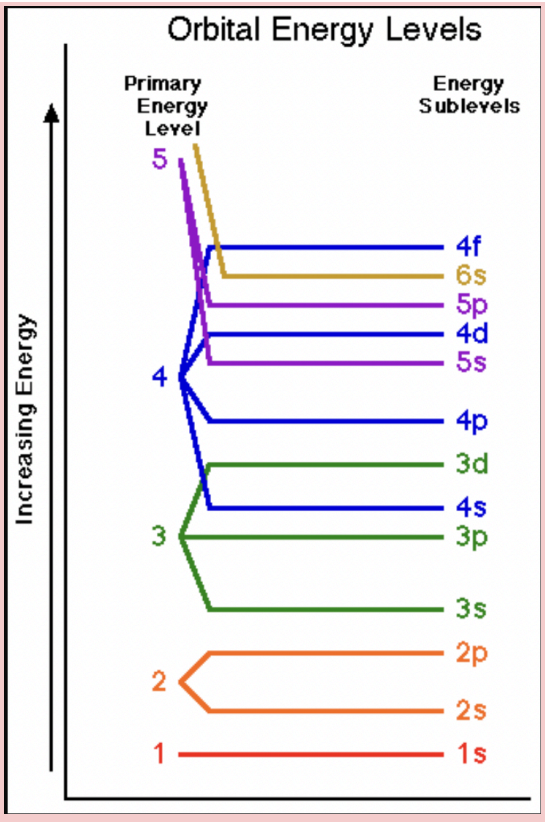
Using electron configurations instead of Bohr models
HW: Electron configuration practice

Tuesday, September 5th

Check Bohr model homework
Additional Bohr model practice with partners

- Magnesium-25 with a +2 charge
- Carbon-14, neutral
- Sulfur-32 with a -2 charge

Finish spectra if needed
Introduce electron configurations instead of Bohr models

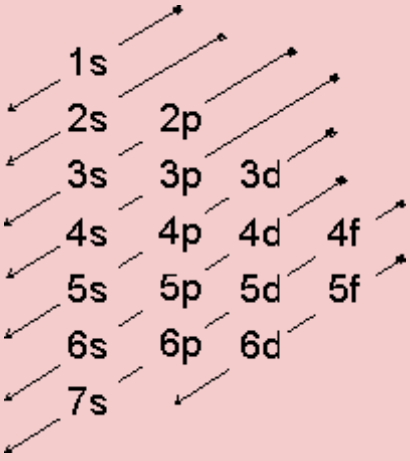


Energy levels overlap

Diagonal and block methods handout

Block method video

Diagonal method video



Quiz Thursday (you will draw 2 Bohr models)

Friday, September 1st

Check homework, complete 2nd side
Pass out more Bohr model practice, due Tuesday
Use element tubes for spectral glasses
Fill out sheet with bright line spectra

Thursday, August 31st

Read pp. 113-118 in Physical Science Textbook
~~Energy Levels and Orbitals~~
Reminder of what they look like (Scandium)
Handouts (2 days) , complete drawing remaining models

Wednesday, August 30th

Discuss activity from yesterday
Relate to Rutherford finding the nucleus
Calculate class average penny size and determine percent error
Bohr Model
~~Read pp. 113-118 in Physical Science Textbook~~
Orbitals explained
1. Scandium
2. Energy Levels and Orbitals

~~Handouts (2 days) , complete for HW~~

Tuesday, August 29th

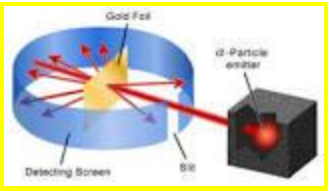
Indirect Measurement Activity with a partner (p. 29 in Predictions book)

Group	hits/100	Number of "pennies"	Experimental area of penny (hits/# of pennies)
1			3.60
2			2.75
3			4.1
4			3.36
5			4.03

6			4.27
7			3.35
			4.8
			3.50
2-1			3.125
2-2			3.19
2-3			3.61
2-4			3.88
2-5			4.1
2-6			5
3-1			3.79
3-2			3.67
3-3			3.22
3-4			4.21
3-5			2.83
3-6			2.84
3-7			3.90
3-8			3.38
3-9			4.3

Monday, August 28th

- Check homework, KEY
- Complete Atomic History Powerpoint, Accompanying Paper
- Rutherfords's Experiment I (vid)
- Rutherfords's Experiment II (vid)

- 

- Cathode ray tube in action
- Our model of the atom over time (- Democritus...about 400 BC)
- Quiz Tuesday (protons, neutrons, electrons, ions, isotopes, etc…can you do the math and can you identify the element if you know its numbers)

Friday, August 25th

- Give back quiz
- Check homework
- Atomos song
- Start Atomic History Powerpoint, Accompanying Paper
- HW: complete packet (protons, neutrons, electrons, ions, etc)
    - Quiz Tuesday (protons, neutrons, electrons, ions, isotopes, etc…can you do the math and can you identify the element if you know its numbers)

Thursday, August 24th

Symbol Quiz (first 10 minutes)

Atomic math practice worksheets (pages 3,4,5 more?)

Atoms that are isotopes and/or have charges

Wednesday, August 23rd

Check homework

What holds an atom together

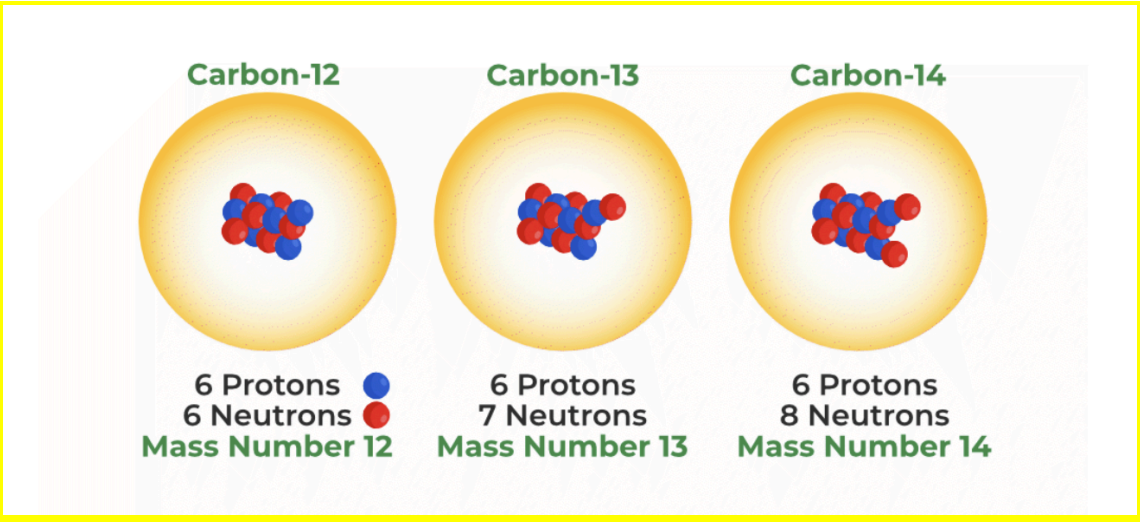
Build atoms (using the perler beads)

Name: KEY Period:

Protons, Neutrons, and Electrons Practice Worksheet

Atomic symbol	Atomic number	Protons	Neutrons	Electrons	Mass Number	Atomic Mass
B	5	5	6	5	11	
Na	11	11	13	11	24	
Ga	31	31	37	31	68	
Y	39	39	50	39	89	
Cu	29	29	35	29	64	63.5
Tc	43	43	57	43	100	
Pb	82	82	125	82	207	
Yb	70	70	102	70	172	
Ac	89	89	136	89	225	227
Mo	42	42	53	42	95	
Tl	81	81	125	81	206	
Fm	100	100	159	100	259	
No	102	102	159	102	261	
Tm	69	69	101	69	170	
Sg	106	106	159	106	265	
Ne	10	10	12	10	22	20.2
Ar	19	19	20	19	39	
He	2	2	2	2	4	
Ti	22	22	27	22	49	
Fe	26	26	30	26	56	55.8
Be	4	4	5	4	9	
S	16	16	16	16	32	
V	23	23	28	23	51	

What is an isotope
Explanation and more examples of isotopes



Recreate isotopes of the 3 carbons, hydrogens and oxygens
Isotope Abundance

Tuesday, August 22nd

Names and Symbols you need to memorize..quiz Thursday
Atoms..the basics (1st 5 paragraphs)
Atomic Math
- Atomic # = number of protons
- Mass # = number of protons + number of neutrons
- Charge = number of protons - number of electrons
  - A neutral atom (charge = 0) has equal numbers of protons and electrons

Build atoms (using the perler beads)
Atomic math practice worksheets (first side start in class, finish first side for homework)

Monday, August 21st

Periodic Table Review
- Metals, nonmetals, metalloids
- Major Groups
- Names and Symbols you need to memorize..quiz Thursday (need to be able to go from symbol to name and name to symbol for all of them)

S Sulfur	C Carbon	Hg Mercury
Ar Argon	O Oxygen	Au Gold
Rn Radon	Ne Neon	Ba Barium
I Iodine	Mg Magnesium	B Boron
Ca Calcium	Ni Nickel	Fe Iron
Si Silicon	H Hydrogen	Ag Silver
Cl Chlorine	N Nitrogen	Pb Lead
K Potassium	F Fluorine	Zn Zinc
Li Lithium	Na Sodium	Br Bromine
U Uranium	Al Aluminum	Cu Copper
He Helium	P Phosphorus	

Atoms..the basics (1st 5 paragraphs)
Reading a box on the periodic table
Atomic Math
- Atomic # = number of protons
- Mass # = number of protons + number of neutrons
- Charge = number of protons - number of electrons
  - A neutral atom (charge = 0) has equal numbers of protons and electrons

~~Atomic math practice worksheets (first page in class, 2nd page for homework)~~

Friday, August 18th

- ☐ Introduction Activity: 20 questions for Mr. Hohman
- ☐ Review Class Info
  - ☐ 1st semester has an exam
  - ☐ Do you have any questions about what we are going to cover or how you will be graded? Please ask in person or email me.
- ☐ What do you do when you are absent?

Thursday, August 17th

- ☐ Introductions
- ☐ Name Game