Monday, 5.11.15

Learning Target : I can identify nuclear reactions based on the characteristics of their chemical equations.

Homework: Bingo packet 2 due Thursday

As you enter... (Write down questions and answers)

What is a fission reaction?

Nuclear decay in which heavy nucleus splits into lighter nuclei

What is a fusion reaction?

2 Nuclei collide to form heavy nucleus

Reminders : Sign up to make up Labs (Tues/Thurs from 3-4 pm)

Big Idea: Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.

9th period:

- Inquiry Activity: 4 Nuclear Reactions (20 min)
- Class Discussion of Reactions (10 min)
- Nuclear Reactions Worksheet (10 min)
- Exit Tix (5 min)

Tix out the door (Don't forget your name.)

Identify one key characteristic for each nuclear reaction type:

1. Nuclear Fission
2. Nuclear Fusion
3. Natural Transmutation
4. Artificial Transmutation

KEY CHARACTERISTICS

First... circle the particles from table O.

Nuclear Fission

One elements → 2 elements

$^{235}U + {}^{1}_{0}n \rightarrow {}^{142}Ba + {}^{91}Kr$

Nuclear Fusion

2 elements → 1 element

$^{2}_{1}H + {}^{2}_{1}H \rightarrow {}^{4}_{2}He$

Natural Transmutation

Artificial Transmutation

Tuesday, 5.12.15

Learning Target : I can identify the missing particle of a nuclear reaction.

Homework: Bingo packet 2 due Thursday

As you enter... (Write down questions and answers)

Name the following nuclear reactions:

1) $^{1}_{1}H + {}^{1}_{1}H \rightarrow {}^{2}_{1}H + {}^{0}_{+1}e$ Fusion

2) $^{235}_{92}U + {}^{1}_{0}n \rightarrow {}^{140}_{56}Ba + {}^{93}_{36}Kr + 3\,{}^{1}_{0}n$ Fission

3) $^{233}_{92}U \rightarrow {}^{4}_{2}He + {}^{229}_{90}Th$ Natural Transmut. (decay)

Reminders : Sign up to make up Labs (Tues/Thurs from 3-4 pm)

Big Idea: Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.

8th period:

- Finish Inquiry Activity from yesterday (20 min)

9th period:

- Nuclear Reactions: Identify the missing particle (60 min) * Note: Do p. 4 before p. 3
- Kahoot... ONLY if everyone is making good progress the whole time (20 min)
- Exit Tix (5 min)

fi: Alexandra

Tix out the door (Don't forget your name.)

Identify the missing particle:

1. $^{104}_{47}Ag \rightarrow X + {}^{104}_{48}Cd$
2. $^{1}_{1}H + {}^{1}_{1}H \rightarrow {}^{2}_{1}H + X$
3. $^{3}_{2}He + {}^{3}_{2}He \rightarrow X + 2\,{}^{1}_{1}H$

Wednesday, 5.13.15

Learning Target : I can write the complete nuclear equations for the decay of radioisotopes.

Homework: Bingo packet 2 due tomorrow

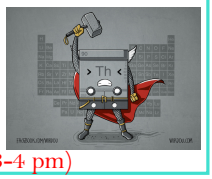
As you enter... (Write down questions and answers)

Write the complete nuclear equation for the following:

1) Cs-137 undergoes beta decay.

2) K-37 undergoes positron decay.

3) Th-232 undergoes alpha decay.

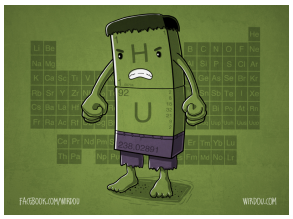


Reminders : Sign up to make up Labs (Tues/Thurs from 3-4 pm)

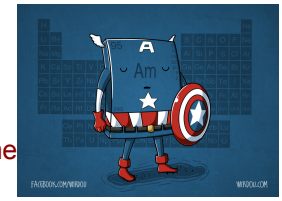
Big Idea: Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.

9th period:

- Finish Nuclear Reactions Packet (20 min)
- Kahoot (20 min)
- Exit Tix (5 min)



Tix out the door (Don't forget your name



Write the complete nuclear equation.

1. Pu-239 undergoes alpha decay.
2. H-3 undergoes beta decay.
3. Ca-37 undergoes positron decay.

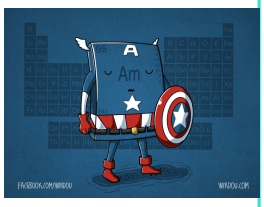
Thursday, 5.14.15

Learning Target : I can write the complete nuclear equations for the decay of radioisotopes.

Homework: Bingo packet 2 due today

As you enter... (Write down questions and answers)

Write the complete nuclear equation for the following:



1. Pu-239 undergoes alpha decay.

$^{239}_{94}Pu \rightarrow {}^{4}_{2}\alpha + {}^{235}_{92}U$

2. H-3 undergoes beta decay.

$^{3}_{1}H \rightarrow {}^{0}_{-1}\beta + {}^{3}_{2}He$

3. Ca-37 undergoes positron decay.

$^{37}_{20}Ca \rightarrow {}^{0}_{1}e + {}^{37}_{19}K$

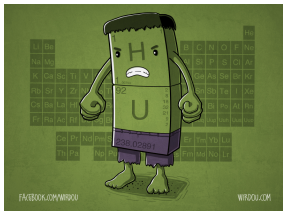
Reminders : Leave BINGO packets on your desk to be collected.

Big Idea: Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.

AGENDA

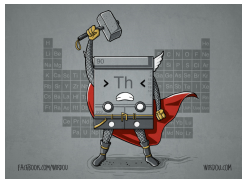
8th period:

- Lab 23: Half-Life (40 min)
- 9th period:
- Half-Life Worksheet (20 min)
- Progress Reports: Make up work (30 min)
- Exit Tix (5 min)



4th Quarter begins 4/20/15

Tix out the door (Don't forget your name.)



Using Table N... How long will it take 100 g of Cs-137 to decay to 12.5 g?
(You must show your work for full credit.)

Lab 23 Class Data

Time ~~Trial~~ #	Each Group's Data						Total
	MCC	DHM	RK	LE		ED	
0	50	50	50	50	50	50	300
10	30	35	31	22	37	27	182
20	20	11	20	12	23	16	102
30	6	6	13	6	11	13	55
40	3	4	7	2	6	11	33
50	3	1	1	2	3	8	18
60	2	1	1	0	1	5	9
70	2	0	3	0	0	3	5

Friday, 5.15.15

Learning Target : I can understand the concept of half-life for a radioactive element.

Homework: Bingo packet 3 due next Thursday

As you enter... (Write down questions and answers)

Using Table N... What is the half-life of...

1) N-16 7.13 s

2) C-14 5715 yrs

3) P-32 14.28 d passed

4) How much time has past when P-32 goes through 3 half-lives?

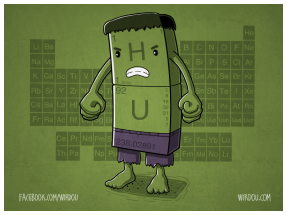
14.28 d x 3 = 42.9 d

Reminders : Nuclear Chemistry Test next Wednesday

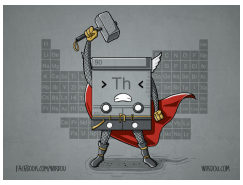
Big Idea: Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.

9th period:

- Mini-Lesson on Half-Life (20 min)
- Half-life packet (20 min)
- Exit Tix (5 min)



Tix out the door (Don't forget your name.)



Using Table N... How long will it take 100 g of Cs-137 to decay to 12.5 g?
(You must show your work for full credit.)