May 13, 2019

1) go over answers to HW questions
2) Balancing Equations

Quiz Friday on Balancing Equations!!

Warm-Up

Count the atoms in each of the following:

1) $MgCl_2$ 1 atom of magnesium, 2 atoms of chlorine

2) $2Li_2SO_4$ 4 atoms of lithium, 2 atoms of sulfur, 8 atoms of oxygen | 2 atoms of sulfate

3) $3Sn(NO_3)_4$ 3 atoms of tin, 12 atoms of nitrogen, 36 atoms of oxygen | 12 atoms of nitrate

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Na_2CO_3

2 sodium
1 carbonate

Type of Atom	# of atoms
Na (sodium)	2
C (carbon)	1
O (oxygen)	3

$Ca_3(PO_4)_2$

3 calcium
2 phosphate

Type of Atom	# of atoms
Ca (calcium)	3
P (phosphorous)	2
O (oxygen)	8

K_2CrO_4

Type of Atom	# of atoms
K (potassium)	2
Cr (chromium)	1
O (oxygen)	4

$3BaCl_2$

Type of Atom	# of atoms
Ba (barium)	3
Cl (chlorine)	6

$NH_4C_2H_3O_2$ 1 ammonium

Type of Atom	# of atoms
N (nitrogen)	1
H (hydrogen)	7
O (oxygen)	2

$4Al_2(CO_3)_3$

8 aluminum
12 carbonate

Type of Atom	# of atoms
Al (aluminum)	8
C (carbon)	12
O (oxygen)	36

carbon 2

$Pb(NO_3)_2$

1 lead
2 nitrate

Type of Atom	# of atoms
Pb (lead)	1
N (nitrogen)	2
O (oxygen)	6

$2(NH_4)_2Cr_2O_7$

4 ammonium
4 chromium
14 oxygen

Type of Atom	# of atoms
N (nitrogen)	4
H (Hydrogen)	16
Cr (chromium)	4
O (oxygen)	14

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Number of atoms	Reactants	Products
carbon	1	1
oxygen	4	4
hydrogen	4	4

c) since atoms are neither created or destroyed in a chemical reaction, there can be no gain or loss of mass

Recall Law of Conservation of Mass

that matter is neither lost nor gained in chemical reactions; it simply changes form.

so when you look at a chemical reaction it must have the same number of atoms of each element in the reactants and in the products.

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Example with Chemical Equations

(skeletal eqn)

i.e. $H_2 + O_2 \Rightarrow H_2O$ is correctly written as

$2H_2 + O_2 \Rightarrow 2H_2O$

We add coefficients (numbers in front of the formulas) to create more atoms and follow the law!!

You cannot change subscripts or rearrange chemical equations!!!

	R	P
H	4	4
O	2	2

Tips for Balancing Chemical Reactions

- Create a chart to help Count the Atoms! and see what you need to balance.

i.e. $CH_4 + O_2 \Rightarrow CO_2 + H_2O$

ATOM	REACTANTS	PRODUCTS
C	1	1
H	4	2
O	2	3

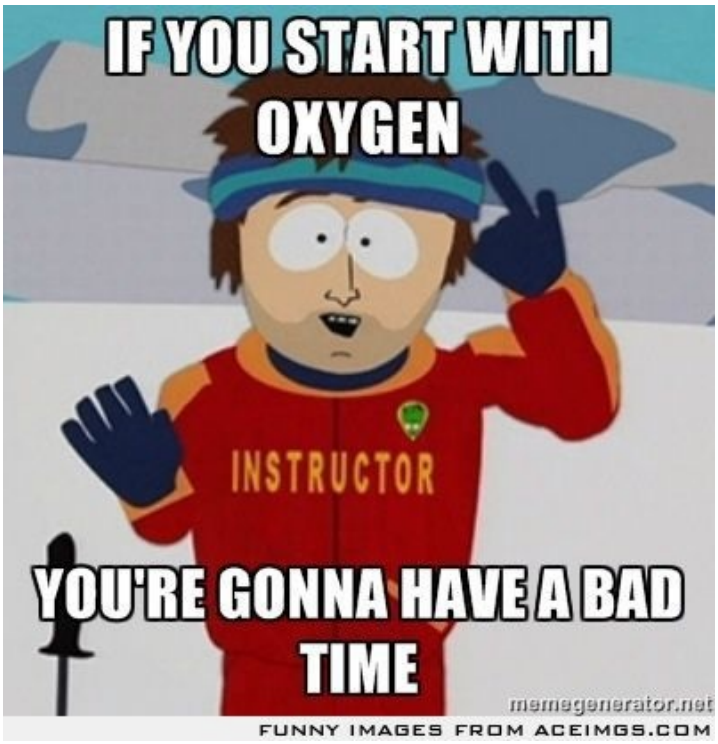
- **You can only add coefficients (number in front of formula)**

- **Balance each atom individually, unless it appears to be a polyatomic compound (SO_4, CO_3, PO_4 etc)**

- **Start with elements that occur in only one compound on each side of the equation. (referred to as easy atoms)**

- **Balance oxygen as your last element if it appears in more than one compound on each side of the equation.**

Oct 9-8:02 PM



Nov 13-10:44 AM

HW Complete
Balancing Worksheet 6.5c

Dec 12-1:09 PM