Name:_____
Date:_____ Core:_____

Chemical Reactions Notes

Law of conservation of mass

- Mass cannot be _____ or _____
- This means that in a chemical reaction the number of atoms you start with is the _____ as the number of atoms you end with

Chemical Formulae

- Chemical Formulae (plural of formula) are how we express compounds
- Just as H is a symbol for hydrogen, H_2O is a symbol for water
- The small numbers present in the formulae are call **subscript** and they indicate **how many of each type of atom** is in the compound or molecule
- Some other common chemical formulae….

  - - -

Chemical equations

- _____ can be written out as chemical equations these are similar to mathematical equations but instead of an "=" you use an _____ to separate the sides

Reactants and Products

- The elements or compounds that are on the LEFT side of the arrow are your_____ the elements and compounds on the RIGHT hand side are called the _____

Balancing Chemical Equations

- Chemical reactions always follow the law of conservation of mass…the number of atoms of each element must be _____ _____ (the reactants) and _____ (the products)
- To balance the number of atoms on each side of the equation, you must add a _____ in front of certain compounds or elements to show the number of each atom being used in the reaction.
- Think about distributive property in math!

Name:_____
Date:_____ Core:_____

Practice Balancing

Hydrogen Peroxide and Yeast:

_____H_2O_2 ➡ __H_2O +___O_2

- 1st – make a list of the TOTAL number of each type of atom on the left and on the right

Left: 2 Hydrogen Right: 2 Hydrogen

2 Oxygen 3 Oxygen

If the numbers all match then you're done, the equation is balanced! If not we'll need to do some math…

If you have different numbers of atoms

- 2nd- If you have **different numbers of _____of atom** on the left and right do the math to make them match.
- Putting **_____** in front of a compound or element in a chemical reaction means there is more than one of that element. Just like in math if you do not see a **coefficient** assume there is _____.

Find the correct coefficient

- In this case if we give both hydrogen peroxide (**H_2O_2**) and water (**H_2O**) a coefficient of 2 and leave oxygen (**O_2**) with a coefficient of 1 then we end up with:
  - $2H_2O_2 \rightarrow 2H_2O + O_2$

Double check

- 3rd- count the atoms on both sides **again** to double check that we're following the law of conservation of matter (same number of atoms on both sides)****be sure to distribute the coefficient!!*****

Left: 4 Hydrogen Right: 4 Hydrogen

4 Oxygen 4 Oxygen

- Since we have the same number of Hydrogen and Oxygen atoms on both side the equation is **_____**!