

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, H₂O 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....

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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!

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Practice Balancing

Hydrogen Peroxide and Yeast:



- 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

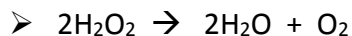
If the numbers all match then you're done, the equation is balanced! If not we'll need to do some math...

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 (**H₂O₂**) and water (**H₂O**) a coefficient of 2 and leave oxygen (**O₂**) with a coefficient of 1 then we end up with:



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 _____!