PS03A –Teach About

Chemical Reactions

Use with BrishLab PS03A
Done By: StarMaterials Coach

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1- What is a chemical reaction? Page 1 Para 1

Atoms combine in a new way to make something new.

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2- How are chemical reactions written in a shorthand form? Page 1 Para 2

TABLE 1.2 Some Common Elements and Their Symbols

Carbon	C	Aluminum	Al	Copper	Cu (from *cuprum*)
Fluorine	F	Barium	Ba	Iron	Fe (from *ferrum*)
Hydrogen	H	Calcium	Ca	Lead	Pb (from *plumbum*)
Iodine	I	Chlorine	Cl	Mercury	Hg (from *hydrargyrum*)
Nitrogen	N	Helium	He	Potassium	K (from *kalium*)
Oxygen	O	Magnesium	Mg	Silver	Ag (from *argentum*)
Phosphorus	P	Platinum	Pt	Sodium	Na (from *natrium*)
Sulfur	S	Silicon	Si	Tin	Sn (from *stannum*)

Elements are labeled with a one, two or three letter symbol – the first letter always capitalized.

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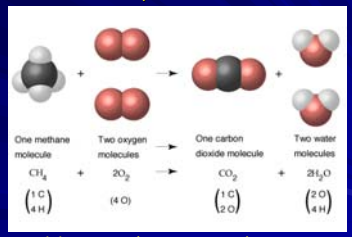
3- List two things to needed to predict a chemical reaction product. Page 1 Para 3



We can predict a reaction by counting the atoms and balancing a chemical equation.

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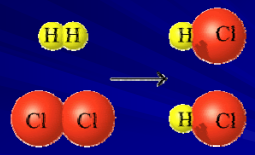
4- When compounds separate in a reaction, what happens after the reaction? Page 1 Para 7



New chemical bonds are formed after a chemical reaction.

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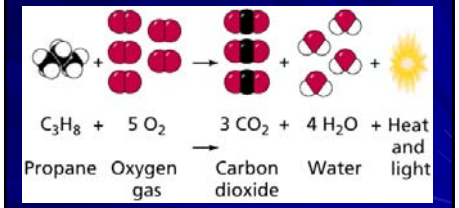
5- List three ways that chemists can describe a chemical reaction. Page 2 Para 8,9,10



Chemists can draw a picture, write a word equation or write in chemical "shorthand" a chemical reaction

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6- What is the law of conservation of mass and why is this important? Page 2 Para 11

In any chemical reaction, all the material at the beginning is there after the reaction. Nothing is created nor destroyed.

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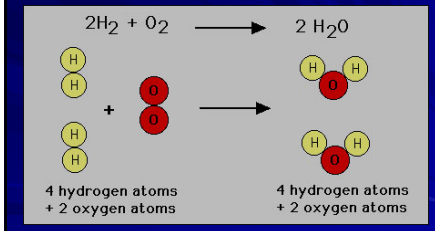
7- In a chemical reaction, how does the total number of atoms change? Page 2 Para 12



The number of atoms at the beginning of a reaction is equal to the same number after.

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8- In balancing chemical equations, what two types of numbers are used to make sure that the atoms are all balanced? Page 2 Para 13

$$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$$

C=1 = C=1
H=4 = H=4
O=4 = O=4

You balance equations by knowing the subscripts (number of atoms in a molecule) and coefficients (the number of molecules).

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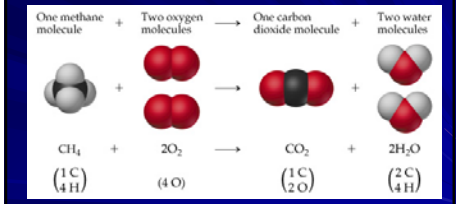
9- How are subscripts different than coefficients in a chemical equation? Page 2 Para 13



Subscripts are the number of atoms in a molecule.
Coefficients are the number of molecules in a reaction.

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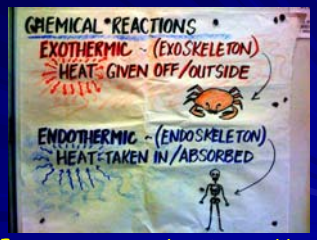
10- What is a good way to remember "exo" and "endo" thermic reactions correctly? Page 2 Para 16



Exo – means energy going out – or exiting.
Endo is the other way.

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Wrap It Up: - Draw and color a balanced chemical equation. Page 2 Para 16

$$2H_2 + O_2 \rightarrow 2H_2O$$

$$4H, \quad 2O \quad = \quad 4H, 2O$$

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Thank You for Watching.

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