Balancing Act

Name _____

Atoms are not _____ or _____ during a chemical reaction. Scientists know that there must be the _____ number of atoms on each _____ of the _____. To balance the chemical equation, you must add _____ in front of the chemical formulas in the equation. You cannot _____ or _____ subscripts!

1) Determine number of atoms for each element.

2) Pick an element that is not equal on both sides of the equation.

3) Add a coefficient in front of the formula with that element and adjust your counts.

4) Continue adding coefficients to get the same number of atoms of each element on each side.

$\square\ Mg + \square\ O_2 \rightarrow \square\ MgO$

Mg =	Mg =
O =	O =

Try these:

$\square\ Ca + \square\ O_2 \rightarrow \square\ CaO$

Ca =	Ca =
O =	O =

$\square\ N_2 + \square\ H_2 \rightarrow \square\ NH_3$

N =	N =
H =	H =

$\square\ Cu_2O + \square\ C \rightarrow \square\ Cu + \square\ CO_2$

Cu =	Cu =
O =	O =
C =	C =

$\square\ H_2O_2 \rightarrow \square\ H_2O + \square\ O_2$

H =	H =
O =	O =

Balancing Act Practice Name _____

Balance each equation. Be sure to show your lists! Remember you cannot add subscripts or place coefficients in the middle of a chemical formula.

1. $Na + MgF_2 \rightarrow NaF + Mg$

2. $Mg + HCl \rightarrow MgCl_2 + H_2$

3. $Cl_2 + KI \rightarrow KCl + I_2$

4. $NaCl \rightarrow Na + Cl_2$

5. $Na + O_2 \rightarrow Na_2O$

6. $Na + HCl \rightarrow H_2 + NaCl$

7. $K + Cl_2 \rightarrow KCl$

Challenge: This one is tough!

$C_2H_6 + O_2 \rightarrow CO_2 + H_2O$

Balancing Act

Overhead Key

Atoms are not **CREATED** or **DESTROYED** during a chemical reaction. Scientists know that there must be the **SAME** number of atoms on each **SIDE** of the **EQUATION**. To balance the chemical equation, you must add **COEFFICIENTS** in front of the chemical formulas in the equation. You cannot **ADD** or **CHANGE** subscripts!

Step 1: Determine number of atoms for each element.

Step 2: Pick an element that is not equal on both sides of the equation.

Step 3: Add a coefficient in front of the formula with that element and adjust your counts.

Step 4: Continue adding coefficients to get the same number of atoms of each element on each side.

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