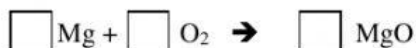# Balancing Act

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.

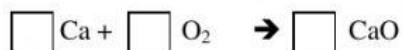2) Pick an element that is not equal on both sides of the equation.

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.

☐ Mg + ☐ O_2 ➔ ☐ MgO
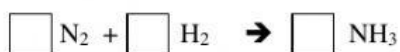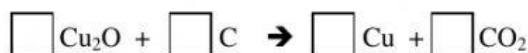
Mg =   Mg =

O =   O =

Try these:

☐ Ca + ☐ O_2 ➔ ☐ CaO

Ca =   Ca =

O =   O =

☐ N_2 + ☐ H_2 ➔ ☐ NH_3

N =   N =

H =   H =

☐ Cu_2O + ☐ C ➔ ☐ Cu + ☐ CO_2

Cu =   Cu =

O =   O =

C =   C =

☐ H_2O_2 ➔ ☐ H_2O + ☐ O_2

H =   H =
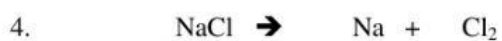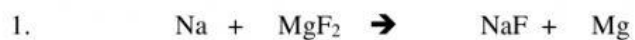
O =   O =
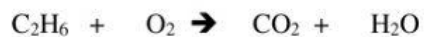
Balancing Act Practice   Name _____

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

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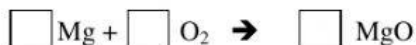
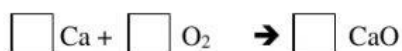Step 2: Pick an element that is not equal on both sides of the equation.

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.

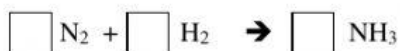☐ Mg + ☐ O_2 ➔ ☐ MgO

Mg =   Mg =

O =   O =

Try these:

☐ Ca + ☐ O_2 ➔ ☐ CaO

Ca =   Ca =

O =   O =

☐ N_2 + ☐ H_2 ➔ ☐ NH_3

N =   N =

H =   H =

☐ Cu_2O + ☐ C ➔ ☐ Cu + ☐ CO_2

Cu =   Cu =

O =   O =

C =   C =

☐ H_2O_2 ➔ ☐ H_2O + ☐ O_2

H =   H =

O =   O =

T. Trimpe 2006   http://sciencespot.net/