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.

$\square$ Mg + $\square$ O_2 → $\square$ MgO

Mg = Mg =

O = O =

Try these:

$\square$ Ca + $\square$ O_2 → $\square$ CaO

Ca = Ca =

O = O =

$\square$ N_2 + $\square$ H_2 → $\square$ NH_3

N = N =

H = H =

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

Cu = Cu =

O = O =

C = C =

$\square$ H_2O_2 → $\square$ H_2O + $\square$ O_2

H = H =

O = O =

Name_____

Balancing Act Practice

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

1. ☐ Na + ☐ MgF_2 → ☐ NaF + ☐ Mg

Na =	Na =
Mg =	Mg =
F =	F =

2. ☐ Mg + ☐ HCl → ☐ $MgCl_2$ + ☐ H_2

Mg =	Mg =
H =	H =
Cl =	Cl =

3. ☐ Cl_2 + ☐ KI → ☐ KCl + ☐ I_2

Cl =	Cl =
K =	K =
I =	I =

4. ☐ NaCl → ☐ Na + ☐ Cl_2

Na =	Na =
Cl =	Cl =

5. ☐ Na + ☐ O_2 → ☐ Na_2O

Na =	Na =
O =	O =

6. ☐ Na + ☐ HCl → ☐ H_2 + ☐ NaCl

Na =	Na =
H =	H =
Cl =	Cl =

7. ☐ K + ☐ Cl_2 → ☐ KCl

K =	K =
Cl =	Cl =