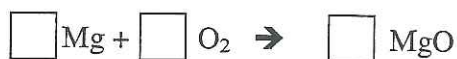


Balancing Act

Name _____

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

1) Determine number of atoms for each element.



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

Mg =

Mg =

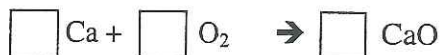
3) Add a coefficient in front of the formula with that element and adjust your counts.

O =

O =

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

Try these:

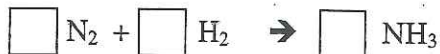


Ca =

Ca =

O =

O =



N =

N =

H =

H =



Cu =

Cu =

O =

O =

C =

C =



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.



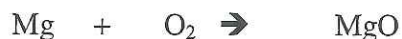
Challenge: This one is tough!



Step-by-Step Example Problem:

Balancing Act
Teacher Notes

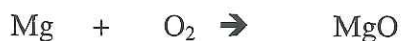
Step 1: Determine number of atoms for each element.



$$\text{Mg} = 1 \qquad \text{Mg} = 1$$

$$\text{O} = 2 \qquad \text{O} = 1$$

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

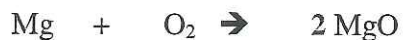


$$\text{Mg} = 1 \qquad \text{Mg} = 1$$

$$\text{O} = 2 \qquad \text{O} = 1$$

Since the O atoms are not equal,
we'll target those first!

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



$$\text{Mg} = 1 \qquad \text{Mg} = \cancel{1} 2$$

$$\text{O} = 2 \qquad \text{O} = \cancel{1} 2$$

Adding a 2 in front of MgO will
change the number of atoms on the
product side of the equation.

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



$$\text{Mg} = \cancel{1} 2 \qquad \text{Mg} = \cancel{1} 2$$

$$\text{O} = 2 \qquad \text{O} = \cancel{1} 2$$

Now we need to increase the
number of Mg atoms we have on the
reactant side. Adding a 2 in front of
Mg will give us 2 atoms of Mg and
balance the equation.

