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.

$\boxed{2}Mg + \square O_2 \rightarrow \boxed{2}MgO$ → The 2 multiplies x everything behind it

Mg = 1	Mg = 1 x 2
O = 2	O = 1 x 2

Try these:

$\boxed{2}Ca + \square O_2 \rightarrow \boxed{2}CaO$

Ca = 1 x 2	Ca = 1 x 2
O = 2	O = 1 x 2

$\square N_2 + \boxed{3}H_2 \rightarrow \boxed{2}NH_3$

N = 2	N = 1 x 2
H = 2 x 3	H = 3 x 2

$\boxed{2}Cu_2O + \square C \rightarrow \boxed{4}Cu + \square CO_2$

Cu = 2 x 2	Cu = 1 x 4
O = 1 x 2	O = 2
C = 1	C = 1

$\boxed{2}H_2O_2 \rightarrow \boxed{2}H_2O + \square O_2$

H = 2 x 2	H = 2 x 2
O = 2 x 2	O = 3 x 2