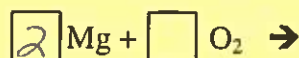


# Balancing Act

## 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.



*The 2 multiplies everything behind it*

$$\text{Mg} = +2$$

$$\text{Mg} = +2$$

$$\text{O} = 2$$

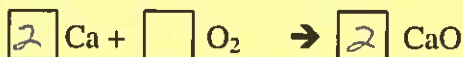
$$\text{O} = +2$$

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.

Try these:

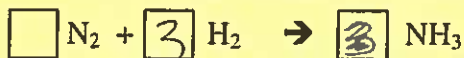


$$\text{Ca} = +2$$

$$\text{Ca} = +2$$

$$\text{O} = 2$$

$$\text{O} = +2$$



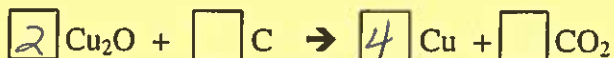
$$\text{N} = 2$$

*2*

$$\text{N} = +3 \cdot 2$$

$$\text{H} = 2 \cdot 3$$

$$\text{H} = 3 \cdot 2$$



$$\text{Cu} = 2 \cdot 2$$

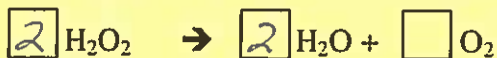
$$\text{Cu} = +4$$

$$\text{O} = +2$$

$$\text{O} = 2$$

$$\text{C} = 1$$

$$\text{C} = 1$$



$$\text{H} = 2 \cdot 2$$

$$\text{H} = 2 \cdot 2$$

$$\text{O} = 2 \cdot 2$$

$$\text{O} = 3 \cdot 2$$