Does mass change after a chemical reaction occurs?

Answer- NO

Why?

Lavoisier stated 'that the mass of a closed system will remain constant, regardless of the reactions inside the system.'

Law of conservation of mass

Counting Atoms in a Formula

How many atoms are shown in the following formulas?

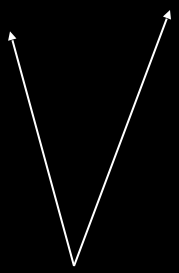
Ca — The symbol by itself represents one atom ex. One calcium atom

N_2 — The subscript indicates the number of atom found in the preceding element

ex. 2 nitrogen atoms

How many atoms are shown in the following formulas?

Fe_2SO_4



This subscript indicates the number of atoms found in the preceding element

ie. 2 Iron atoms
4 Oxygen atoms
1 sulfur atoms

Total atoms= 7

How many atoms are shown in the following formulas?

$Mg_3(PO_4)_2$

This subscript multiplies all the elements in the bracket

ie. 2 x O_4 = 8 oxygen
2 x P = 2 phosphorus

This subscript indicates the number of atoms found in the preceding element
ie. 3 Magnesium atoms
4 Oxygen atoms
1 Phosphorus atom

How many atoms are shown in the following formulas?

$3\ FeBrO_4$

There are 12 oxygen atoms (3 x 4 oxygen)

This COEFFICIENT multiplies the number of atoms of each element in the formula.

ie. 3 x 1 Iron atoms
3 x 1 bromine atoms
3 x 4 Oxygen atoms

Count the atoms in these Compounds!

Na_3P

Type of Atoms	# of Atoms
Sodium	3
Phosphorus	1
Total	4

Count the atoms in these Compounds!

Na_2CO_3

Type of Atoms	# of Atoms
Sodium	2
Carbon	1
Oxygen	3
Total	6

Count the atoms in these Compounds!

$Fe\ SO_4$

Type of Atoms	# of Atoms
Iron	1
Sulfur	1
Oxygen	4
Total	6

Count the atoms in these Compounds!

3 NaOH

Type of Atoms	# of Atoms
Sodium	3
Oxygen	3
Hydrogen	3
Total	9

Count the atoms in these Compounds!

$Cu(NO_3)_2$

Type of Atoms	# of Atoms
Copper	1
Nitrogen	2
Oxygen	6
Total	9

Count the atoms in these Compounds!

3 K_2SO_4

Type of Atoms	# of Atoms
Potassium	6
Sulfur	3
Oxygen	12
Total	21

Count the atoms in these Compounds!

$3\ Al_2(SO_4)_3$

2×3 Al

$1 \times 3 \times 3$ S

$4 \times 3 \times 3$ O

Type of Atoms	# of Atoms
Aluminum	6
Sulfur	9
Oxygen	36
Total	51