

# DALTON'S ATOMIC THEORY (1803)

- 1) All matter consists of tiny, indivisible particles called **atoms**.
- 2) Atoms of one element cannot be changed to atoms of a different element.
- 3) Atoms cannot be created or destroyed.
- 4) All atoms of the same element are identical in mass, size, and other properties.
- 5) Atoms of one element differ in mass, size and other properties from atoms of different elements.
- 6) Chemical change involves bond breaking, rearrangement of atoms, and bond making.

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John Dalton's theory explained other theories of the time, including:

Proust's **Law of Constant Composition**

*In a given compound, the relative number and kind of atoms are constant*

Lavoisier's **Law of Conservation of Matter**

*The total mass of the materials present in the products is the same as the total mass of the materials found in the reactants*

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John Dalton went on to propose the correct **Law of Multiple Proportions**

*If two elements form two different compounds, the mass ratio of the elements making up one compound is a whole number multiple of the mass ratio of the elements in the second compound. (see page 62 in the textbook)*