

2.1: Dalton's atomic theory

Atom

Atom is the smallest particle of an element that retains the element's characteristics.

For example, gold is an element. Magnifying a section of the gold surface large enough would look like a packing of atoms, as illustrated in Fig. 2.1.1.

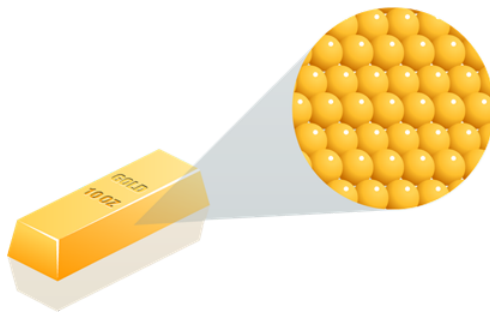


Figure 2.1.1: A piece of gold (right) is an element that is composed of particles called atoms, as shown in the model (left). Source: <https://www.hiclipart.com/free-trans...ghixq/download>.

Dalton's atomic theory was the first significant attempt to explain the basic knowledge of atoms gained over time. Postulates of Dalton's atomic theory are the following.

Postulates of Dalton's atomic theory

1. Elements are composed of tiny indivisible particles called atoms.
2. Atoms of an element are identical but different from atoms of any other element.
3. Atoms of different elements react with each other in a fixed whole numbers proportion to produce a compound.
4. Atoms in a compound can separate and recombine to give new substances. Still, the atoms are neither created nor destroyed in the reaction.

Dalton's atomic theory is the basis of the current atomic theory, though the atoms are no more considered 'indivisible.' According to the current knowledge, **subatomic particles** like electrons, protons, and neutrons compose the atoms. However, the subatomic particles do not represent the element.

This page titled [2.1: Dalton's atomic theory](#) is shared under a [Public Domain](#) license and was authored, remixed, and/or curated by [Muhammad Arif Malik](#).