

Name: _____

Period: _____

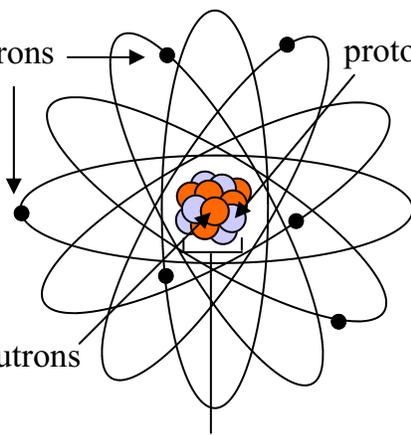
The Atom

Everything is made of **atoms**. Atoms are the smallest part of matter.
Atoms are made up of 3 subatomic particles (particles smaller than the atom): **electrons, protons, and neutrons**.

On the following diagram of an atom define the parts of the atom.

Negatively charged particles; outside the nucleus; can be gained or lost to and from other atoms; very small mass: 1/2000th of a proton

electrons →



protons

Positively charged particles; in the nucleus; determine what element an atom is.

This model of the atom looks a lot like a solar system. The nucleus, which contain the protons and neutrons, in the center would be the sun. The **electrons** are the planets spinning around the nucleus.

Neutral particles in the nucleus; give mass to the atom, but not charge.

neutrons

nucleus

Center of the atom; contains protons and neutrons.

Count the protons to tell what element this is:
of Protons: _____ Element: _____

John Dalton in 1808 published a theory of the atom that had these important points:

- All atoms of a particular element are the same.
- Atoms of different elements have different properties, mass, and chemical reactivity.
- Atoms are not changed by chemical reactions, just rearranged in order or number.

Atoms, Molecules, and Compounds

Atoms combine into **molecules**.
O is an atom; O₂ is a molecule: both are oxygen.

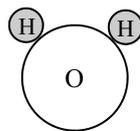
Molecules are made up of two or more atoms.

If two different atoms combine they make **compounds**:
H₂O is a compound; O₂ is a molecule.

Compounds are made up of two or more elements.

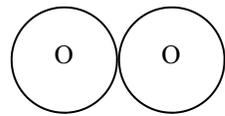
Water molecule—
a compound (H₂O)

2 hydrogens



1 oxygen

Oxygen molecule—
an element (O₂)



2 oxygens

Atom, molecule or compound?

NaCl — _____

Cl₂ — _____

Na — _____

What elements are these?

Na — _____

Cl — _____