

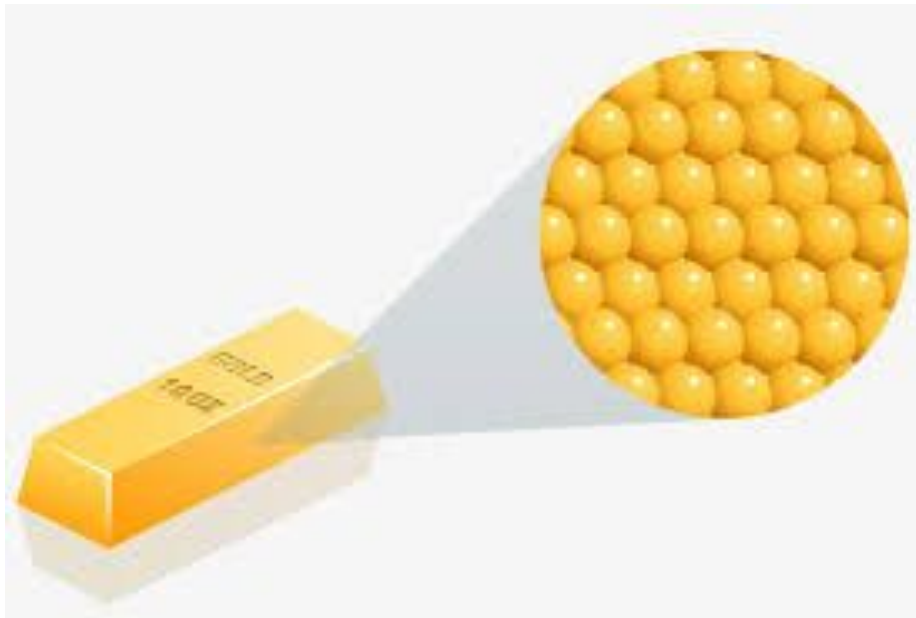
# Introduction to Chemistry

## Lesson 1

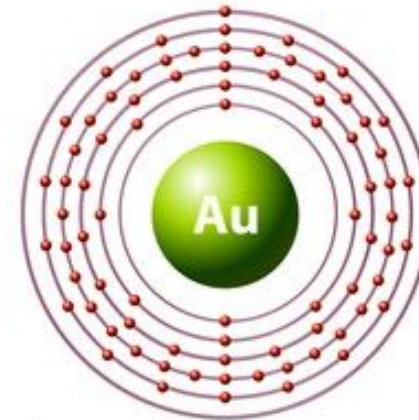
**A. Matter**—anything that has Mass and takes up space

1. Matter is made up of tiny particles called Atoms.

2. Substances that contain only one type of atom are Elements.



79                      **Gold**                      Au

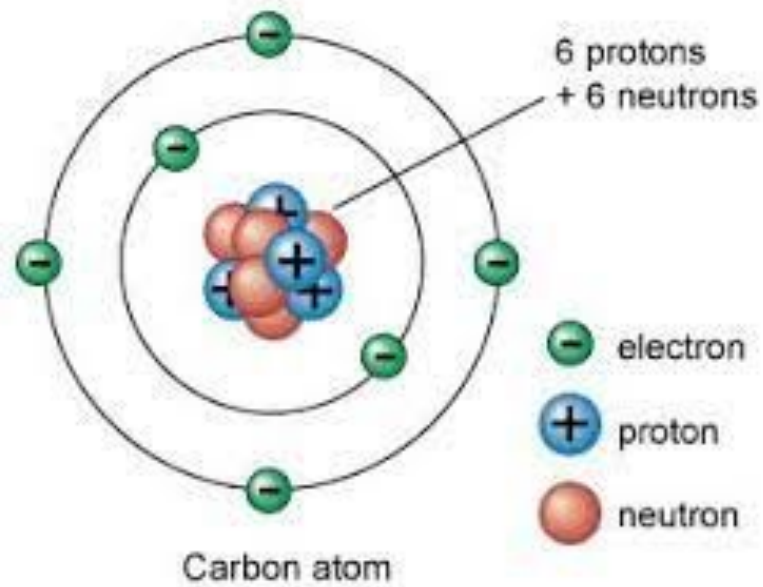


Atomic mass: 196.96

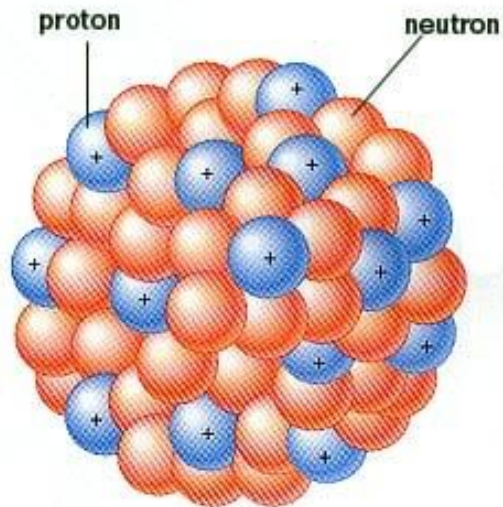
Electron configuration: 2, 8, 18, 32, 18, 1

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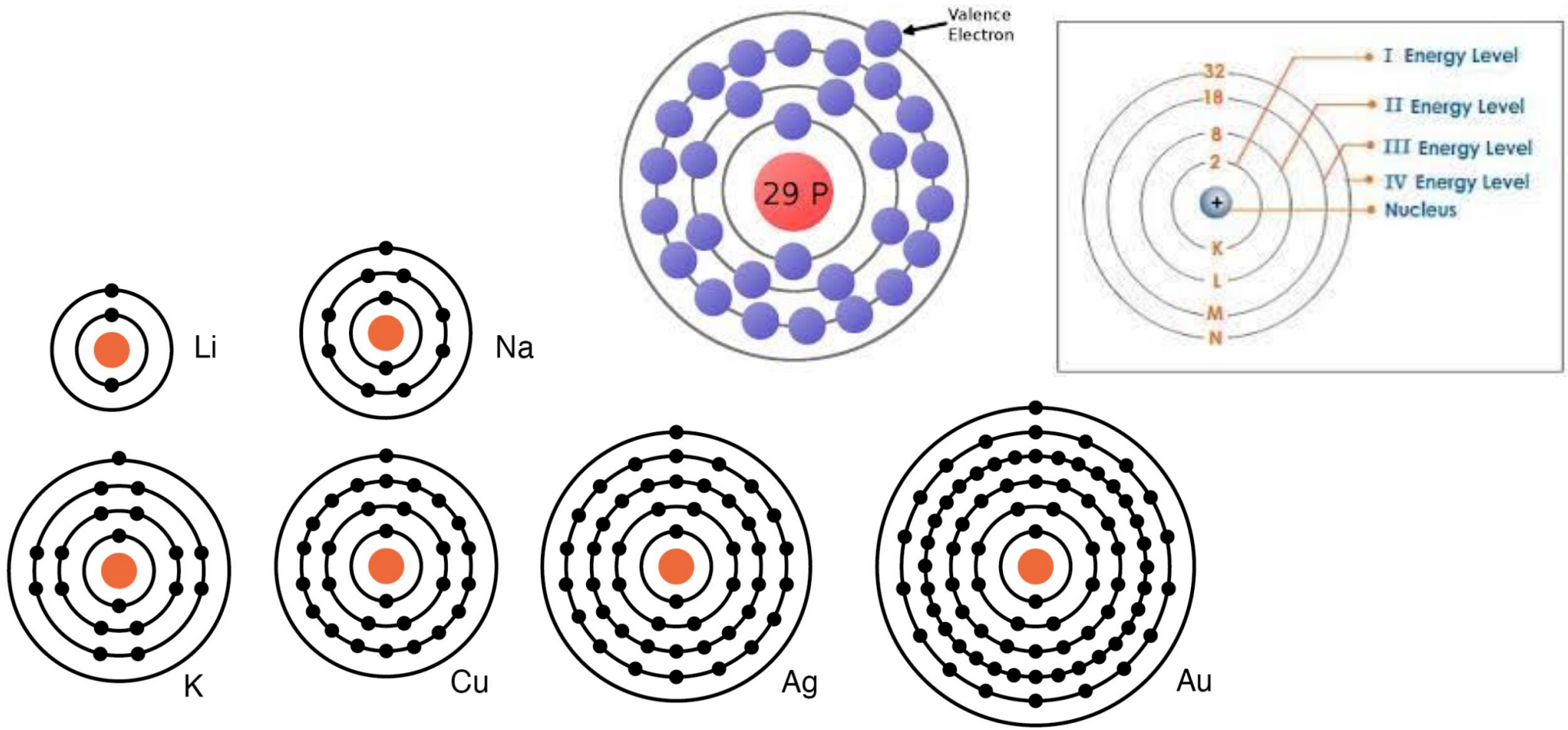
B. Three basic particles make up an atom: Proton, Neutron, and Electron.



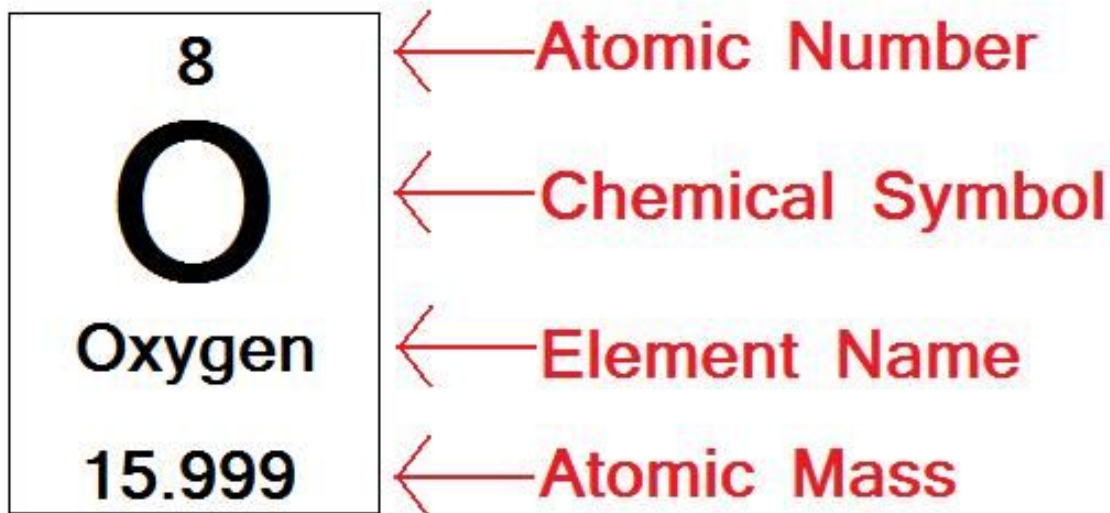
1. Protons and neutrons make up the Nucleus of an atom.
- a. **Protons**—particles that have positive electric charge
- b. **Neutrons**—particles that have No electrical charge
- c. The nucleus has a positive charge.



2. Electrons— Negatively charged particles that move around the nucleus



3. **Atomic number**—the number of Protons in an atom's nucleus
- a. All atoms of a specific element have the same Atomic Number.
- b. This number also equals the number of Electrons in the atom's electron cloud.



4. **Mass number**—the number of Protons and Neutrons making up an atom's nucleus

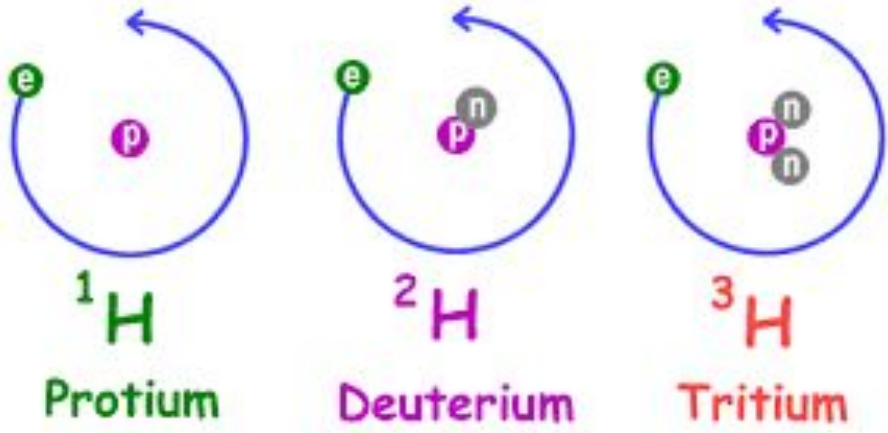


**Number of Neutrons** + **Number of Protons** = **Mass Number**



C. Isotopes—atoms of the same element that have different numbers of \_\_\_\_\_ neutrons

### Three Isotopes of Hydrogen



### Isotopes of Carbon

