

## Atoms, elements, and compounds: Objectives and Vocabulary

By referring to the various handouts, notes, lab activities and homework covered during this unit, then at the end of this unit of study, each student should be able to:

1. Describe the basic structure of the atom, including the types of particles found in most atoms.
2. Use periodic table to determine basic information about elements, such as atomic number, atomic weight, mass number, and the numbers of each type of particle in the element.
3. Know what the arrangement of the periodic table is based on, and the person most responsible for the modern periodic table.
4. Know the names for specific groups of elements in the periodic table.
5. Explain what an isotope is and common uses for some isotopes. Also know the isotopes of hydrogen.
6. Understand and be able to explain differences between elements and compounds.
7. Identify selected elements and compounds by symbols and formulas . Know the uses for some of the more important elements.
8. Identify the metal in a soluble salt solution during a flame test.
9. Identify and describe the basic types of chemical bonds along with examples.
10. Use electron dot diagrams to represent chemical bonds.

### Vocabulary:

Atom	Deuterium	Transition elements
Molecule	Tritium	Iron Triad
Nucleus	Period	Coinage metals
Proton	Family	Metalloid
Electron	Group	Halogen
Neutron	Element	Nobel gas
Electron cloud	Symbol	Chemical Bond
atomic number	Compound	ion
atomic weight	Formula	ionic bond
mass number	Metal	covalent bond
periodic table	Non-metal	metallic bond
Dmitri Mendeleev	Alkali metal	polar
Isotope	Alkaline earth metal	non-polar

Learn names and symbols for elements 1-20, 26-29,47,51,79, 82,92,94

Atomic Number	Element Name	Element Symbol	Atomic Number	Element Name	Element Symbol
1	hydrogen	H	26	iron	Fe
2	helium	He	27	cobalt	Co
3	lithium	Li	28	nickel	Ni
4	beryllium	Be	29	copper	Cu
5	boron	B	47	silver	Ag
6	carbon	C	51	antimony	Sb
7	nitrogen	N	79	gold	Au
8	oxygen	O	82	lead	Pb
9	fluorine	F	92	uranium	U
10	neon	Ne	94	plutonium	Pu
11	sodium	Na			
12	magnesium	Mg			
13	aluminum	Al			
14	silicon	Si			
15	phosphorus	P			
16	sulfur	S			
17	chlorine	Cl			
18	argon	Ar			
19	potassium	K			
20	calcium	Ca			