

# The Atom

Text	Unit Objectives:
4.1 4.2	1. The atom has two main components which are electrons and nucleons (protons and neutrons). You must know the location, comparative mass, and charge on subatomic particle Key Idea: There are over 100 different elements. What make these atoms different?
4.2 5.1	2. Develop understanding for the major breakthroughs that have lead to our understanding of the structure of the atom, and how our view of the atom has reflected these advancements.
5.3	3. Understand what causes emission and absorption spectra and how we are able to use this information.
4.3	4. Build understanding of the key ideas of atomic number, isotopes, mass number, and atomic mass (weight).
5.2	5. Understand two models of the atom, the Bohr Model and the Orbital Model. Understand how each looks at energy levels, quanta, spectral lines, and orbitals.
5.2	6. Become comfortable writing electron configurations. This includes filling orbital box diagrams and knowing what the diagrams tell us about the electrons location and the element represented.
10.1	7. Be able to make conversions for elements between grams, moles, and number of atoms.
6.3 7.1	8. Build understanding of what valence electrons are as well as ionization energy.

### Essential Vocabulary

Anion, Atomic Mass Unit, Atomic Number, Atomic Radius, Cation, Electron, Electron Cloud, Emission Spectra, Energy Level, Excited State, Gram-Atomic Mass, Ionization Energy, Isotopes, Kernel, Mass Number, Mole of an Element, Neutron, Nucleons, Orbital, Principal Energy Level, Proton, Quanta, Spectral Lines, Valence Electrons

### Announcements:

1. This is a large unit. Expect several quizzes and plan to study more for this test.
2. Come in after school if you want extra help.
3. This will be the last unit test for the first quarter. Using the tombstone project I will have 4 unit test grades.