

Chemistry 11 – Unit 8—Atoms, Periodic Table and Bonding

Unit Outline

Topic	Activity
Historical Development of Atomic Models	<p>Brief class introduction to the models of the atom proposed by the ancient Greeks, Dalton, Thomson, Rutherford and Bohr. Read pages 139-144 in SW.</p> <p>Early Atomic Models Power Point</p>
Protons, Neutrons, and Electrons in Atoms and Ions	<p>Class explanation of nuclear notation of isotopes and how to determine the number of protons, neutrons and electrons given nuclear notation or nuclear notation given numbers of P's , N's and e⁻'s. See pages 144-148 in SW.</p> <p>Do Ex. 15(a-f), 16(a-e), 17(a-d), 19, 22(a-e) (change “Atomic Mass” to “Mass Number” in 19 & 22!) on pages 146-149 of SW.</p>
Isotope Abundances and Atomic Mass	<p>Class Explanation of how Atomic Mass is calculated given relative natural abundances of isotopes. See p. 150 in SW.</p> <p>Do Ex. 23(a-d) on page 150 of SW.</p>
Electronic Structure of the Atom	<p>Class Explanation of the Wave Mechanical or Quantum Mechanical Model of the Atom. See p. 151-158 in SW.</p> <p>Videos on Bohr-Rutherford Models and the Wave Mechanical Model.</p> <p>Do Hand-In Assignment # 12—Electronic Structure of the Atom. (You will also need pages 287-300 in Heath Chemistry Text to help you with this assignment.)</p> <p>Video on the Atom</p>
Early History of the Periodic Table	<p>Brief class introduction to early ordering of elements and Mendeleev's Periodic Table.</p> <p>Do Ex. 30 on page 160 of SW.</p>
The Modern Periodic Table	<p>Class Explanation of “Atomic Mass discrepancies” and how Atomic Number solved the problem.</p>

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The Modern Periodic Table	<p>Class Introduction to the Major Divisions within the Periodic Table. See pages 161-164 of SW.</p> <p>Do Ex. 31-39 on pages 162-164 of SW.</p>
Trends on the Periodic Table	<p>Do Experiment on Trends in Reactivity of Elements.</p> <p>Do In-Class Activity on Trends on the Periodic Table</p>
Noble Gas Stability and Ion Formation	<p>Do Hand-In Assignment #13—Electron Arrangement and Ion Formation</p>
Chemical Families	<p>Do In-Class “Web-Elements” Computer Activity.</p> <p>See Video on the Periodic Table</p>
Chemical Bonding	<p>Class Explanation of Valence Electrons and Electron-Dot Diagrams (Lewis Structures) for Atoms. Draw Electron Dot Structures for a variety of atoms.</p> <p>Class Explanation of Electronegativity and the nature of Ionic Bonding. See p. 172-175 of SW. Do Ex. 57 & 60-64 on p.172-175 of SW.</p> <p>Class Explanation of Covalent Bonding. See p. 176-179 of SW. Do Ex. 69-72 on p. 178-179 of SW. Class Explanation of Polar Covalent Bonding (like in a water molecule). Brief Class Explanation of London Forces. See p. 179-181 in SW.</p> <p>Class Explanation of Drawing Electron-Dot Diagrams for simple ionic and covalent compounds, including some with double and triple bonds.</p> <p>See Video on Chemical Bonding</p> <p>Do Hand-In Assignment #14—Chemical Bonding</p>
Summary and Test	<p>Do a Brief Class Review of Unit 8</p> <p>Test on Unit 8</p>