

## Curriculum Mapping

**School:** Illini Bluffs High School

**School Year:** 2009-2010

**Course:** Chemistry

**Grade Level:** 10-12

<b>Month</b>	<b>ILS</b>	<b>Content</b>	<b>Skills</b>	<b>Assessments</b>	<b>Resources</b>
<b>August</b>	11.A.4a 13.A.4a	<b>Nature of Science</b> <b>Scientific Method</b>  <b>Significant Figures</b>  <b>Metric System</b>	<ul style="list-style-type: none"> <li>•Identifying parts of the scientific method</li> <li>•Apply the concept of significant figures to scientific calculations</li> <li>•Perform conversion within the metric system</li> </ul>	-Worksheets -Presentation	<i>Chemistry</i> Wilbraham, Staley, Matta, and Waterman Prentice Hall Publishing 2008
<b>September</b>	13.A.4b 13.A.4c 12.D.4a	<b>Chemistry</b>      <b>Laboratory Safety</b>      <b>Energy</b>      <b>Temperature</b>	<ul style="list-style-type: none"> <li>•Describe ways that chemistry effects your life</li> <li>•Explain how chemistry is used by professionals in different fields</li> <li>•List safety rules</li> <li>•Explain reasons for each rule</li> <li>•Understand differences in kinetic and potential energy</li> <li>•Identify different forms of energy</li> </ul>	-Worksheets -Quiz -Test -Lab	<i>Hands On Chemistry Activities with Real-Life Applications</i> Herr and Cunningham Center for Applied Research in Education 1999

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		<b>Matter and Change</b>	<ul style="list-style-type: none"><li>• Explain the law of conservation of energy</li><li>• Explain the basis for the Fahrenheit, Celsius, and Kelvin Temperature scales</li><li>• Calculate various temperature conversions</li> <li>• Identify basic properties of matter</li><li>• Describe the three phases of matter</li><li>• Identify ways in which matter can change phase</li><li>• Distinguish between physical and chemical changes in matter</li><li>• Understand the difference between elements and compounds</li><li>• Locate various materials on the</li></ul>		
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			<p>wavelength and frequency</p> <ul style="list-style-type: none"> <li>•Understand the regions of the electromagnetic spectrum</li> <li>•Explain what is meant by quantum energy</li> <li>•Explain Bohr's model of the atom, and how it incorporates Planck's idea of quantization</li> <li>•Compare the s, p, d, and f orbitals in terms of size shape and energy</li> <li>•Describe how electrons are organized in an atom</li> </ul>		
<b>November</b>	12.D.5a 12.C.5b	<b>Periodic Table</b>	<ul style="list-style-type: none"> <li>•Explain how elements are organized in a periodic table</li> <li>•Compare early and modern periodic tables</li> <li>•Classify elements</li> </ul>	<ul style="list-style-type: none"> <li>-Worksheets</li> <li>-Quiz</li> <li>-Lab</li> <li>-Test</li> </ul>	<i>Hands On Chemistry Activities with Real-Life Applications</i> Herr and

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			<p>based on electron configuration</p> <ul style="list-style-type: none"> <li>•Describe trends of elements, such as atomic size, ionization energy, and electronegativity</li> </ul>		<p>Cunningham Center for Applied Research in Education 1999</p>
<b>December</b>	12.D.4b	<b>Bonding</b>	<ul style="list-style-type: none"> <li>•Describe the characteristics of ionic bonds</li> <li>•Describe properties of ionic compounds</li> <li>•Define covalent bond</li> <li>•Explain differences in double, single, and triple covalent bonds</li> <li>•Compare between polar and nonpolar covalent bonds</li> <li>•Describe how to name ionic compounds and molecular compounds</li> <li>•Define the term acid and define how it is named</li> </ul>	<ul style="list-style-type: none"> <li>-Worksheets</li> <li>-Quiz</li> <li>-Lab</li> <li>-Test</li> </ul>	<p><i>Chemistry</i> Wilbraham, Staley, Matta, and Waterman Prentice Hall Publishing 2008</p>

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		<b>Molecular Shape</b>	<ul style="list-style-type: none"> <li>•Define VSEPR theory and its effects relationship to molecular shape</li> <li>•Name and describe the five basic shapes of common molecules</li> <li>•Define hybrid orbitals</li> <li>•Explain trends in bond lengths</li> <li>•Explain how shapes of molecules determines properties</li> </ul>		
<b>January</b>	12.C.4b	<b>Naming chemical Compounds</b>	<ul style="list-style-type: none"> <li>•Define polyatomic ions and write the names and formulas of the most common ions</li> <li>•Apply the rules for naming ionic compounds with and without polyatomic ions</li> <li>•Interpret the prefixes in the names of molecular compounds</li> </ul>	<ul style="list-style-type: none"> <li>-Worksheets</li> <li>-Quiz</li> <li>-Lab</li> <li>-Test</li> </ul>	<i>Hands On Chemistry Activities with Real-Life Applications</i> Herr and Cunningham Center for Applied Research in Education

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			<ul style="list-style-type: none"> <li>•Apply the rules for writing formulas for molecular compounds</li> <li>•Apply the rules for identifying and naming acids and bases</li> </ul>		1999
<b>February</b>	12.D.4b	<b>Chemical Quantities</b>	<ul style="list-style-type: none"> <li>•Explain the meaning of Avogadro's number</li> <li>•Explain how molar mass relates to the number of particles of a substance to the mass of the substance</li> <li>•Perform conversions among the number of particles, moles, mass, and volume of given substances</li> <li>•Determine the empirical and molecular formulas of unknown compounds</li> </ul>	<ul style="list-style-type: none"> <li>-Worksheets</li> <li>-Quiz</li> <li>-Test</li> <li>-Lab</li> </ul>	<i>Chemistry</i> Wilbraham, Staley, Matta, and Waterman Prentice Hall Publishing 2008
<b>March</b>	12.D.4b	<b>Chemical Reactions and Equations</b>	<ul style="list-style-type: none"> <li>•Describe the characteristics of a</li> </ul>	<ul style="list-style-type: none"> <li>-Worksheets</li> <li>-Quiz</li> </ul>	<i>Hands On Chemistry</i>

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			<p>chemical reaction</p> <ul style="list-style-type: none"> <li>•Distinguish between reactants and products</li> <li>•Explain how a balanced chemical equation illustrates the law of conservation of matter</li> <li>•Name the four general types of chemical reactions</li> <li>•Describe each of the four types of chemical reactions</li> </ul>	<p>-Lab -Test</p>	<p><i>Activities with Real-Life Applications</i> Herr and Cunningham Center for Applied Research in Education 1999</p>
<b>April</b>	12.F.4a	<b>Mathematics of Chemical Equations</b>	<ul style="list-style-type: none"> <li>•Describe Stoichiometry and describe its significance</li> <li>•Balance chemical equations</li> <li>•Calculate Stoichiometric Problems</li> <li>•Define limiting reactant</li> </ul>	<p>-Worksheets -Quiz -Test -Lab</p>	<p><i>Hands On Chemistry</i> <i>Activities with Real-Life Applications</i> Herr and Cunningham Center for Applied Research in Education</p>

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			<ul style="list-style-type: none"> <li>•Explain how quantities of products are determined</li> <li>•Calculate the percent yield of a chemical</li> </ul>		1999
<b>May</b>	12.F.5a	<b>Behavior of Gases</b>	<ul style="list-style-type: none"> <li>•Describe the nature of gases (pressure, mass, compression, volume, and diffusion)</li> <li>•Define atmospheric pressure and the units in which it is measured</li> <li>•Explain how pressure is measured</li> <li>•Explain the relationships between Boyle's Law, Charles's law, and Avogadro's Law(temperature, volume, and pressure)</li> <li>•State the ideal gas law equation and explain each of its variables</li> <li>•Relate molar mass</li> </ul>	<ul style="list-style-type: none"> <li>-Worksheets</li> <li>-Quiz</li> <li>-Test</li> <li>-Lab</li> </ul>	<i>Chemistry</i> Wilbraham, Staley, Matta, and Waterman Prentice Hall Publishing 2008

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