

<b>DEPARTMENT: SCIENCE</b>	<b>COURSE TITLE: CHEMCOM</b> <b>COURSE NUMBER: 232</b>
<b>GRADE(S): 11</b>	<b>PRE-REQUISITES (IF ANY): NONE</b>

<b>UNIT</b>	<b>LENGTH</b>	<b>CONTENT</b>	<b>SKILLS</b>	<b>METHODS OF ASSESSMENT</b>	<b>FRAMEWORK STRAND(S) &amp; STANDARD(S)</b>
Water: Exploring Solutions	28 days	<ul style="list-style-type: none"> <li>Safety in the lab</li> <li>Metric system</li> <li>Unit analysis</li> <li>Direct and indirect water use</li> <li>Atomic nature of atom</li> <li>Elements ,compounds and mixtures</li> <li>Ionic bonds</li> <li>Formula writing</li> <li>Formula naming</li> <li>Symbols, formulas, equations</li> <li>pH</li> <li>Percent concentration</li> <li>Water purification</li> </ul>	<p>Students will:</p> <ul style="list-style-type: none"> <li>Construct and interpret graphs and tables.</li> <li>Use dimensional analysis to solve problems.</li> <li>Recognize unsafe laboratory situations.</li> <li>Understand the use of scientific notation.</li> <li>Analyze water use patterns.</li> <li>Purify water.</li> <li>Test water for contamination.</li> <li>Understand and write chemical equations and formulas.</li> <li>Evaluate and make decisions regarding water purification methods.</li> </ul>	<ul style="list-style-type: none"> <li>Unit Exam</li> <li>Math assignment sheets</li> <li>Daily homework</li> <li>Laboratory investigations</li> <li>Unit quizzes</li> <li>Oral presentations</li> <li>Notebook check</li> </ul>	<p>1: Properties of matter 1.1; 1.2; 1.3; 1.4</p> <p>2: Atomic Structure 2.2; 2.3</p> <p>3. Periodicity 3.1; 3.2; 3.3</p> <p>4. Chemical Bonding 4.1; 4.2; 4.6; 4.7</p> <p>7. Solutions 7.1</p>
Materials: Structure and Uses	20 days	<ul style="list-style-type: none"> <li>Physical and chemical properties</li> <li>Physical and chemical changes</li> <li>The Periodic Table</li> <li>Metals and nonmetals</li> <li>Periodic trends</li> <li>Metal reactivity</li> <li>Law of Conservation of Matter</li> <li>Ores</li> <li>Alloys</li> <li>The Mole Concept</li> <li>Renewable and nonrenewable resources</li> </ul>	<p>Students will:</p> <ul style="list-style-type: none"> <li>Classify elements.</li> <li>Predict properties using the periodic table.</li> <li>Predict formulas using the periodic table.</li> <li>Problem solve.</li> <li>Balance equations.</li> <li>Construct solubility curves.</li> <li>Using data, construct both line and bar graphs.</li> <li>Translate a chemical equation both quantitatively and qualitatively.</li> <li>Count by massing known materials.</li> </ul>	<ul style="list-style-type: none"> <li>Laboratory Investigations</li> <li>Daily homework</li> <li>Quizzes</li> <li>Notebook check</li> <li>Unit Exam</li> <li>Math assignment sheets</li> <li>Group presentations</li> </ul>	<p>1.Matter 1.1; 1.4</p> <p>2. Atomic Structure 2.2</p> <p>3. Periodicity 3.1; 3.2; 3.3; 3.4</p> <p>4. Chemical Bonding 4.6; 4.7</p> <p>5. Chemical Reaction 5.1; 5.4; 5.5</p>
Petroleum: Breaking and Making Bonds	22 days	<ul style="list-style-type: none"> <li>Nature of petroleum</li> <li>Distillation</li> <li>Molecular formulas</li> <li>Structural formulas</li> <li>Alkane hydrocarbons</li> <li>Alkene hydrocarbons</li> <li>Alkyne hydrocarbons</li> </ul>	<p>Students will:</p> <ul style="list-style-type: none"> <li>Model hydrocarbons.</li> <li>Construct Multi-bar graphs.</li> <li>Name organic compounds.</li> <li>Writing organic formulas.</li> <li>Interpret data on energy use.</li> <li>Understand decision making</li> </ul>	<ul style="list-style-type: none"> <li>Concept map</li> <li>Notebook check</li> <li>Grandparents interview</li> <li>laboratory reports</li> <li>Unit exams</li> <li>Unit quizzes</li> </ul>	<p>10. Thermochemistry 10.1; 10.2; 10.3</p> <p>5 Chemical Reactions 5.1; 5.2; 5.3; 5.6</p> <p>4. Chemical</p>

		<ul style="list-style-type: none"> <li>• Aromatic hydrocarbons</li> <li>• Functional groups</li> <li>• Isomers</li> <li>• Polarity and solubility</li> <li>• Combustion</li> <li>• Plastics and polymers</li> </ul>	<p>regarding energy use and building use.</p> <ul style="list-style-type: none"> <li>• Determine energy efficiency.</li> <li>• Model polymers.</li> <li>• Separate mixtures using distillation.</li> <li>• Gather information by interviews.</li> </ul>	<ul style="list-style-type: none"> <li>• Daily homework</li> </ul>	<p>Bonding 4.1; 4.2; 4.3; 4.4; 4.5; 4.7</p>
Air: Chemistry and the Atmosphere	24 days	<ul style="list-style-type: none"> <li>• Composition of the atmosphere</li> <li>• Kinetic Molecular Theory of Matter</li> <li>• The Gas Laws, Boyles, Charles and the Universal Gas Law</li> <li>• The electromagnetic spectrum</li> <li>• Greenhouse gases</li> <li>• Acids and bases</li> <li>• Acid rain</li> <li>• Neutralization reactions</li> <li>• Smog</li> <li>• Photochemical smog</li> <li>• Ozone</li> <li>• CFC's in the atmosphere</li> </ul>	<p>Students will:</p> <ul style="list-style-type: none"> <li>• Graph atmospheric data.</li> <li>• Practice multi-step problem solving using the gas laws.</li> <li>• Explore and model gases.</li> <li>• Use Avogadro's Principle to investigate gases.</li> <li>• Count molecules using the molar volume concept.</li> <li>• Predict trends using carbon dioxide data.</li> <li>• Develop possible solutions for greenhouse problems.</li> <li>• Explain ozone depletion.</li> <li>• Develop solutions for acid rain issues.</li> </ul>	<ul style="list-style-type: none"> <li>• Unit exams</li> <li>• Laboratory investigations</li> <li>• Oral presentations</li> <li>• Group projects</li> <li>• Daily homework</li> <li>• Quizzes</li> </ul>	<p>1. Properties of matter 1.2 5. Chemical Reactions 5.2; 5.3; 5.5 6. Gases 6.1; 6.2</p>