



Chemistry Curriculum Bundle # 2

Title	 	Suggested Dates
Matter & Change		9/13 -10/1 (14.5 days)

Big Idea/Enduring Understanding	Guiding Questions
Matter is neither created nor destroyed. It is configured and reconfigured. The physical and chemical properties of substances are determined by their atomic and molecular structures.	How do you identify the difference between physical and chemical changes?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See note above)
<p>4 Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:</p> <p>4A differentiate between physical and chemical changes and properties;</p> <p>4B identify extensive and intensive properties;</p>	<p>Know that physical and chemical properties can be used to describe and classify matter. CCRS</p> <p>a. Distinguish between physical properties (e.g., density, melting point) and chemical properties (e.g., ability to react, combustibility). Know that chemical changes create new substances (e.g., rusting), while physical changes do not (e.g., boiling).</p> <p>b. Understand that, as an intrinsic property, density does not change as sample size is changed, and be able to perform density calculations. CCRS</p> <p>Including</p> <ul style="list-style-type: none"> • Color • Reactivity • Texture • Malleability • Ductility • Density • Solubility • Conductivity • Extensive/intensive properties 	<p>Lab: Physical and Chemical Change See chemistry resource folder</p> <p>Activity-Physical/Chemical Properties/Changes See Chemistry resource folder</p> <p>Lab: Evidence of a Chemical Change See chemistry resource folder</p> <p>Lab: Identifying Chemical and Physical Changes See chemistry resource folder</p>

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<p>4C compare solids, liquids, and gases in terms of compressibility, structure, shape, and volume; and</p>	<p>Understand the behavior of matter in its various states: solid, liquid, gas. CCRS <i>a. Describe how gas pressure is affected by volume, temperature, and the addition of gas.</i> <i>b. Describe the behavior of solids, liquids, and gases under changes in pressure. CCRS</i></p> <p>Know properties of liquids and solids. CCRS <i>a. Describe the properties of liquids (e.g., surface tension, capillary action).</i> <i>b. Describe the structure of solids (e.g., crystal lattice structure, unit cell, amorphous solids). CCRS</i></p> <p>Including</p> <ul style="list-style-type: none"> • Compressibility • Structure and arrangement of particles • Motion of particles • Shape • Volume • Apply the energy of particles to motion, shape, and volume of solids, liquids, and gases • Use energy differences to explain the physical properties of solids, liquids, and gases • Use energy changes to explain phase changes • Compare densities between three phases and relate it to floating, sinking, or suspension 	<p>Lab: Density of an Unknown See chemistry resource folder</p> <p>Lab 2.1: Density Glencoe: Matter and Change</p> <p>Density Demo: Will It Float? http://facstaff.gpc.edu/~pgore/PhysicalScience/density-demo-cans.htm</p> <p>Animated picture of Solid, Liquids, and Gases http://www.chem.purdue.edu/gchelp/liquids/character.html</p>
<p>4D classify matter as pure substances or mixtures through investigation of their properties.</p>	<p>Recognize and classify pure substances (elements, compounds) and mixtures. CCRS <i>a. Describe separation techniques for both mixtures and compounds.</i> <i>b. Distinguish between homogeneous and heterogeneous mixtures.</i> <i>c. Understand that, as an intrinsic property, density does not change as sample volume is changed, and be able to perform density calculations. CCRS</i></p>	<p>Chromotography Lab http://www.science-house.org/learn/CountertopChem/</p> <p>Lab: Separating a Mixture with Physical Means See chemistry resource folder</p> <p>Science Activities (Physical and Chemical Changes) http://www.valdosta.edu/~lamartin/topic.html</p> <p>Lab: Separating a sand and salt mixture (Word Format 1 to 10 link) http://www.rsc.org/education/teachers/learnnet/classic_exp.htm</p> <p>Filtration animation http://www.scs.sk.ca/cyber/elem/learningcommunity/scie</p>

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	<p>Including</p> <ul style="list-style-type: none">• Describe difference in properties of mixtures vs. samples of pure substances• Determine if a sample is an element, compound, or mixture using techniques such as<ul style="list-style-type: none">• Filtration• Distillation• Chromatography• Crystallization• Magnetism	<p>nces/science10/curr_content/science10/unita/redon17.html</p> <p>Distillation animation http://www.yenka.com/freecontent/attachment.action?quick=ux&att=2216</p>
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