

Correlations of Maryland Voluntary state Science Curriculum to:
Chemistry in Action Series
Visual Learning Company
1-800-453-8481

| Maryland State Learning Standards | Video Title with Concepts and Vocabulary | Teacher's Guide Activities | Assessment Tools |
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| <p>Grade 7 A. Structure of Matter</p> <p>1. Cite evidence to justify and support the fact that all matter is made up of atoms. a. Provide evidence from investigations and research to demonstrate that groups of elements have similar properties.</p> | <p>The Periodic Table Video:</p> <p>This program makes the Modern Periodic Table come alive to students. Numerous examples of elements are given. Specific patterns in the periodic table are highlighted.</p> <p>Concepts and vocabulary include: atomic structure, atomic number, atomic mass, periods, and families.</p> | <p>The Periodic Table Guide:</p> <p><i>Navigating the Periodic Table</i> pages 25-27</p> <p><i>Everyday Elements</i> pages 28-29</p> | <p>The Periodic Table Guide:</p> <p>Preliminary Test pages 20-21</p> <p>Video Review page 22</p> <p>Post Test pages 23-24</p> <p>Vocabulary of <i>The Periodic Table</i> - page 30</p> |
| <p>Grade 6 A. Structure of Matter</p> <p>1. Provide evidence to explain how compounds are produced. a. Investigate and describe what happens to the properties of substances when they react chemically with other substances.</p> | <p>Bonding Video:</p> <p>The process of chemical bonding is described and illustrated through live action footage and vivid animations. The role atomic structure plays in the process of bonding is described. Examples of chemical bonding including ionic bonds, covalent bonds, and metallic bonds are illustrated. Attention is given to describing how specific types of bonds affect the characteristics of matter.</p> <p>Concepts and vocabulary include: element, atomic structure, energy level, valence electrons, ionic bonds, crystal lattice, covalent bond, and metallic bond.</p> | <p>Bonding Guide:</p> <p><i>Covalent and Ionic Compounds</i> pages 25-27</p> <p><i>Diagramming Covalent Bonds</i> pages 28-29</p> | <p>Bonding Guide:</p> <p>Preliminary Test pages 20-21</p> <p>Video Review page 22</p> <p>Post Test pages 23-24</p> <p>Vocabulary of <i>Bonding</i> page 30</p> |

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| <p>Grade 8</p> <p>D. Physical and Chemical Changes</p> <p>3. Provide evidence to support the fact that common substances have the ability to change into new substances.</p> <p>a. Investigate and describe the occurrence of chemical reactions using the following evidence:</p> <ul style="list-style-type: none"> · Color changes · Formation of a precipitate or gas · Release of heat or light <p>b. Use evidence from observations to identify and describe factors that influence reaction rates.</p> <ul style="list-style-type: none"> · Change in temperature · Acidity <p>c. Identify the reactants and products involved in a chemical reaction given a symbolic equation, or a description of the reaction.</p> <p>d. Provide data from investigations to support the fact that energy is transformed during chemical reactions.</p> | <p>Reactions Video:</p> <p>Chemicals interacting with each other are one of the most fascinating topics in chemistry. Fireworks, burning flares and rusting all illustrate chemical reactions. The different types of reactions are described, as well as the process of balancing chemical equations.</p> <p>Concepts and vocabulary include: chemical equations, Law of Conservation of Mass, decomposition and synthesis reactions, replacement reactions, and reaction rates.</p> | <p>Reactions Guide:</p> <p><i>Reactions in Action</i> pages 25-27</p> <p><i>The Law of the Conservation of Mass</i> pages 28-29</p> | <p>Reactions Guide:</p> <p>Preliminary Test pages 20-21</p> <p>Video Review page 22</p> <p>Post Test pages 23-24</p> <p>Vocabulary of <i>Reactions</i> page 30</p> |

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| <p>e. Provide examples to explain the difference between a physical change and a chemical change.</p> <p>Grade 8 B. Conservation of Matter</p> <p>1. Provide evidence to support the fact that the idea of atoms explains conservation of matter.</p> <p>c. Cite evidence from investigations that the total mass of a system remains the same throughout a chemical reaction because the number of atoms of each element remains the same.</p> <p>d. Give reasons to justify the statement, "If the number of atoms stays the same no matter how the same atoms are rearranged, then their total mass stays the same."</p> | | | |
| <p>Grade 8 D. Physical and Chemical Changes</p> <p>2. Cite evidence and give examples of chemical properties of substances</p> <p>a. Based on data from investigations and research, identify and describe chemical properties of common</p> | <p>Compounds in Chemistry Video:</p> <p>In this program students will see how chemical compounds are placed into different types of groups so that they may be studied easier. Acids and bases are explored, emphasizing their nature and common everyday uses. Carbon compounds are also discussed.</p> | <p>Compounds in Chemistry Guide:</p> <p><i>Testing for pH</i> pages 25-27</p> <p><i>Electrolytes in Action</i> pages 28-29</p> | <p>Compounds in Chemistry Guide:</p> <p>Preliminary Test pages 20-21</p> <p>Video Review - page 22</p> <p>Post Test pages 23-24</p> <p>Vocabulary of <i>Compounds in Chemistry</i> page 30</p> |

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| <p>substances.</p> <ul style="list-style-type: none">· Reacts with oxygen (rusting/tarnishing and burning)· Reacts with acids· Reacts with bases <p>b. Use information gathered from investigations to classify materials as acidic, base, or neutral using the pH scale.</p> | <p>Concepts and vocabulary include: acid, base, pH, salt, carbon, organic, and hydrocarbon.</p> | | |
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