



<u>Curriculum Standards/Learning Outcomes</u>	<u>Teaching Strategies</u>	<u>Resources</u>
<p data-bbox="178 315 659 380"><b><u>Topic One: Matter and Energy in the Biosphere</u></b></p> <p data-bbox="178 415 474 443">Students will be able to:</p> <ul data-bbox="233 483 720 1284" style="list-style-type: none"><li>• Describe the effects of different amounts of sunlight on plants</li><li>• Identify the colors of light absorbed and transmitted by green plants</li><li>• Identify the colors of pigments in leaves using chromatography</li><li>• Identify the components of plant and animal biomass</li><li>• Demonstrate that energy is stored in biomass</li><li>• Use systems analysis to describe a model of a producer</li><li>• Describe photosynthesis</li><li>• Use systems analysis diagrams to describe a model of a consumer</li><li>• Describe respiration</li><li>• Make compost from a variety of organic materials</li><li>• Describe decomposition</li><li>• Describe food chains and food webs</li><li>• Trace the flow of energy through the biosphere</li><li>• Trace the flow of matter through the biosphere</li></ul>		



# ISE GRADE EIGHT SCIENCE CURRICULUM STANDARDS / LEARNING OUTCOMES



<u>Curriculum Standards/Learning Outcomes</u>	<u>Teaching Strategies</u>	<u>Resources</u>
<p data-bbox="178 277 751 342"><b><u>Topic Two: Heat, Light, and Energy Transfer</u></b></p> <p data-bbox="178 378 472 407">Students will be able to:</p> <ul data-bbox="233 444 751 1279" style="list-style-type: none"><li>• Distinguish between heat and temperature</li><li>• Measure heat in calories</li><li>• Identify and distinguish between transparent and opaque objects</li><li>• Identify the colors of the solar system</li><li>• Distinguish between reflection, transmission, and absorption of light</li><li>• Explain reflection, refraction, and diffusion of light</li><li>• Distinguish the differences between light and heat</li><li>• Measure the solar constant</li><li>• Analyze substances by heating and by electrolysis</li><li>• Break down substances into their components by blow piping</li><li>• Synthesize substances from their components</li><li>• Draw systems analysis diagrams of analysis and synthesis of compounds</li><li>• Write word equations for analysis and synthesis</li><li>• Distinguish between elements and compounds</li></ul>		



<p><b>Topic Two: Heat, Light and Energy Transfer cont'd</b></p> <ul style="list-style-type: none"><li>• Describe essential elements of Dalton's atomic theory</li><li>• Identify elements and compounds by the physical and chemical properties</li><li>• Balance chemical equations</li><li>• Describe the kinetic molecular model of matter</li><li>• Use the kinetic molecular model of matter to explain chemical and physical phenomena</li></ul>		
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<p data-bbox="178 277 590 310"><b><u>Topic Three: Sunlight and Heat</u></b></p> <p data-bbox="178 345 474 378">Students will be able to:</p> <ul data-bbox="247 414 730 1182" style="list-style-type: none"><li>• State an operational definition of energy</li><li>• Relate area of illumination to energy available to different parts of the Earth</li><li>• relate reflection, refraction and diffusion of light to the scattering of incident solar energy to Earth</li><li>• use systems analysis diagrams to analyze complex systems</li><li>• formulate models to explain physical and/or ecological systems</li><li>• use decision theory to plan for planting gardens</li><li>• measure and trace the flow of matter and energy in a garden plot</li><li>• describe how to maximize biomass production in a garden plot</li><li>• identify some of the problems and limitations involved in world food production</li><li>• describe at least one country's needs for food and energy supplies</li></ul>		