

# Physical Science (Types of Potential Energy)

Grade 8 Science    Grade 8 Science

Start Date: March 31, 2014

End Date : April 18, 2014

<p>Unit Overview</p> <p>This topic focuses on forces and motion within, on and around the Earth and within the universe.</p>	<p>Content Elaborations</p> <p>Gravitational potential energy is associated with reference point (e.g., above ground level, above object is evidence that the gravitational potential energy has changed.</p> <p>Elastic potential energy is associated with how much an object is compressed and how difficult such a compression or stretch of an elastic object is evidenced by a change in length.</p> <p>Chemical potential energy is associated with the energy stored within substances. Rearranging atoms into new substances (e.g., a chemical reaction) is evidence that the chemical potential energy has been transferred when a chemical system undergoes a change.</p> <p>Electrical potential energy is associated with the position of electrical charges. The amount of charge they have. A change in the position of charges results in a change in electrical potential energy.</p>	<p>Unit Resources</p> <p>Textbook: Chapter 9</p> <p>Gizmo Lab: <b>Potential Energy on Shelves</b></p> <p>Lab Activity: <b>Elastic Energy Lab</b></p> <p>Gizmo Lab: <b>Energy of a Pendulum</b></p>
<p>Unit Vocabulary</p> <p>Energy</p> <p>Kinetic Energy</p> <p>Potential Energy</p> <p>Mechanical Energy</p> <p>Chemical Energy</p> <p>Elastic Energy</p> <p>Electrical Energy</p> <p>Mechanical Energy</p> <p>Energy Conversion</p>	<p>Enduring Understandings (Big Ideas)</p> <p><b>There are different types of potential energy.</b></p> <p>Gravitational potential energy changes in a system as the masses or relative positions of objects are changed.</p> <p>Objects can have elastic potential energy due to their shape.</p>	<p>Connections</p>

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<p>Friction Law of Conservation of Energy</p>	<p>to their compression or chemical potential energy due to the nature and arrangement of the atoms that make up the object.</p>	
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### Standards

#### **OH Academic Content Standards - Science (2011) - Grade 8**

Strand PS Physical Science

Topic PS.1 This topic focuses on forces and motion within, on and around the Earth and within the universe.

Content Statement PS.1.3 There are different types of potential energy.

PS.1.3.a Gravitational potential energy changes in a system as the masses or relative positions of objects are changed.

PS.1.3.b Objects can have elastic potential energy due to their compression or chemical potential energy due to the nature and arrangement of the atoms that make up the object.

<p>Student Assessment Chapter 9 Test Study Island Assessments Gizmo Assessments</p>	<p>Unit Reflection</p>
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### Potential Energy Types

<b>Content</b>	<b>Skills</b>	<b>Assessment</b>
<p>A. Potential Energy Types</p>	<p>A. Potential Energy Types</p> <ol style="list-style-type: none"> <li>1. Compare kinetic and potential energy</li> <li>2. Describe the different forms of energy</li> <li>3. Explain the relationship between energy and work</li> <li>4. Describe an energy conversion</li> <li>5. Give examples of energy conversions for the different forms of energy</li> <li>6. Explain how energy conversions make energy useful</li> <li>7. Explain the role of machines in energy conversions</li> <li>8. Explain how energy is conserved within a closed system</li> <li>9. Explain the law of conservation of energy</li> </ol>	

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|  | <ol style="list-style-type: none"><li>10. Give examples of how thermal energy is always a result of energy conversion</li><li>11. Explain why perpetual motion is impossible</li></ol> |  |
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