

**Correlation of Florida Sunshine State Standards to:
Motion, Energy and Force Series**

Florida Sunshine State Standards	Video Title with Concepts and Vocabulary	Teacher's Guide Activities	Assessment Tools
<p><i>Motion:</i></p> <p>Force and Motion</p> <p>Standard 1:</p> <p>Benchmark SC.C.1.3.1</p> <p>The student knows that the motion of an object can be described by its position, direction of motion, and speed.</p>	<p><i>Motion Video:</i></p> <p>This video explores the principles of motion including the concepts of speed, velocity, time and distance, acceleration, and momentum. The calculations for speed and acceleration are emphasized.</p> <p>Concepts and vocabulary words include:</p> <p>Speed</p> <p>Momentum</p> <p>Velocity</p> <p>Acceleration</p> <p>Frame of reference</p>	<p><i>Motion Teacher's Guide:</i></p> <p>Calculating Speed and Velocity- page 23</p> <p>Graphing Speed- page 24 and 25</p> <p>Speed in Action- page 26 and 27</p>	<p><i>Motion Teacher's Guide:</i></p> <p>Preliminary Test- page 18 and 19</p> <p>Video review- page 20</p> <p>Post Test- page 21</p> <p>Calculating Speed and Velocity- page 23</p> <p>Graphing Speed- page 24 and 25</p> <p>Speed in Action- page 26 and 27</p> <p>Vocabulary of Motion- page 31</p>
<p><i>Force and Newton's Law</i></p> <p>Force and Motion</p> <p>Standard 2:</p> <p>Benchmark SC.C.2.3.3:</p> <p>The student knows that if more than one force acts on an object, then the forces can reinforce or cancel each other, depending on their direction and magnitude.</p> <p>Benchmark SC.C.2.3.5</p> <p>The student understands that an object in motion will continue at a constant speed and in a straight line until acted upon by a force and that an object at rest will remain at rest until acted upon by a force.</p> <p>Benchmark SC.C.2.3.6</p> <p>The student explains and shows the ways in which a net force (that is, the sum of all acting forces) can act on an object (e.g., speeding up an object traveling in the same direction as the net force, slowing down an object traveling in the direction opposite</p>	<p><i>Force and Newton's Laws Video:</i></p> <p>This program illustrates the principle of force and the application of Newton's Laws. Students will witness the effects of friction on force and will calculate force. Also discussed is gravity and its effect on falling objects.</p> <p>Concepts and vocabulary words include: Force, Friction, Newton's Three Laws of Motion, Weight, Mass, Gravitation</p>	<p><i>Force and Newton's Laws Teacher's Guide:</i></p> <p>The Force of Friction- page 24</p> <p>Constructing a Balloon Rocket- page 25</p> <p>Spinning Soda Can- page 26</p> <p>Calculating Force, Mass, and Acceleration- page 27</p> <p>Mass and Fall Rate- page 28</p>	<p><i>Force and Newton's Laws Teacher's Guide:</i></p> <p>Preliminary Test- page 19 and 20</p> <p>Video review- page 21</p> <p>Post Test- page 22 and 23</p> <p>Calculating Force, Mass, and Acceleration- page 27</p> <p>Mass and Fall Rate- page 28</p> <p>Vocabulary of Forces- page 30</p>

<p>of the net force).</p> <p>Benchmark SC.C.2.3.7</p> <p>The student knows that gravity is a universal force that every mass exerts on every other mass.</p>			
<p><i>Simple Machines:</i></p> <p>Force and Motion</p> <p>Standard 2</p> <p>Benchmark SC.C.2.3.4</p> <p>The student knows that simple machines can be used to change the direction or size of a force.</p>	<p><i>Simple Machines Video:</i></p> <p>This program identifies and describes simple machines and their effect on work and power. Students will learn how to calculate work as well as mechanical advantage and efficiency.</p> <p>Concepts and vocabulary include:</p> <p>work, power, joule, watt, efficiency, mechanical advantage, screw, inclined plane, wedge, lever, pulley, wheel and axle</p>	<p><i>Simple Machines Guide:</i></p> <p>Calculating Mechanical Advantage- pages 23-24</p> <p>Art of Mechanics- pages 25-26</p> <p>Calculating Work- page 27</p> <p>The Power of Pulleys- page 28</p> <p>A Lesson on Levers- page 29</p>	<p><i>Simple Machines Guide:</i></p> <p>Preliminary Test- pages 18-19</p> <p>Video Review- page 20</p> <p>Post Test- pages 21-22</p> <p>Vocabulary of <i>Simple Machines</i>- page 30</p>
<p><i>Energy:</i></p> <p>Energy</p> <p>Standard 1:</p> <p>Benchmark SC.B.1.3.1</p> <p>The student identifies forms of energy and explains that they can be measured and compared.</p> <p>Benchmark SC.B.1.3.2</p> <p>The student knows that energy cannot be created or destroyed, but only changed from one form to another.</p> <p>Standard 2</p> <p>Benchmark SC.B.2.3.2</p> <p>The student knows that most of the energy used today is derived from burning stored energy collected by organisms millions of years ago (e.g., nonrenewable fossil fuels).</p>	<p><i>Energy Video:</i></p> <p>This video explores the main forms of energy and how to differentiate between them. The concepts of potential energy and kinetic energy are highlighted as well as the calculations regarding energy transfer and transformation. Also discussed is the Law of Conservation of Energy and its implications.</p> <p>Concepts and vocabulary words include:</p> <p>Potential energy</p> <p>Kinetic energy</p> <p>Chemical energy</p> <p>Heat energy</p> <p>Mechanical energy</p> <p>Transference</p> <p>Law of Conservation of Energy</p>	<p><i>Energy Teacher's Guide:</i></p> <p>Calculating Kinetic Energy- page 23</p> <p>Reaching Your Potential- page 25</p> <p>A Perfect World- page 26</p> <p>Observing the Greenhouse Effect- page 27</p> <p>Pendulum Potential- page 28</p>	<p><i>Energy Teacher's Guide:</i></p> <p>Preliminary Test- page 18 and 19</p> <p>Video Review- page 20</p> <p>Post Test- page 21 and 22</p> <p>Calculating Kinetic Energy- page 23</p> <p>Reaching Your Potential- page 25</p> <p>Pendulum Potential- page 28</p> <p>Vocabulary of Energy- page 30</p>