

**NJCCCS Standards:**

**STANDARD 5.7 (PHYSICS) ALL STUDENTS WILL GAIN AN UNDERSTANDING OF NATURAL LAWS AS THEY APPLY TO MOTION, FORCES, AND ENERGY TRANSFORMATIONS.**

By the end of **Grade 8**, students will:

<p><b>A</b></p> <p><b>Motion and Forces</b></p>	<ol style="list-style-type: none"><li>1. Use quantitative data to show that when more than one force acts on an object at the same time, the forces can reinforce or cancel each other producing a net (unbalanced) force that will change speed and/or direction of the object.</li><li>2. Recognize that every object exerts a gravitational force on every other object, and that the force depends on how much mass the objects have and how far apart they are.</li></ol>
<p><b>B</b></p> <p><b>Energy Transformations</b></p>	<ol style="list-style-type: none"><li>1. Recognize that the sun is a major source of the Earth's energy and that solar energy includes visible, infrared and, ultraviolet radiation.</li><li>2. Describe the nature of various forms of energy, including heat, light, sound, chemical, mechanical, and electrical and trace energy transformations from one form to another.</li><li>3. Describe how heat can be conducted through materials or transferred across space by radiation and know that if the material is a fluid, convection currents may aid the transfer of heat.</li><li>4. Show that light is reflected, refracted, or absorbed when it interacts with matter and that colors may appear as a result of this interaction.</li></ol>

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