

Energy Transfer

Learning Goals for Students and Teachers

Student and Teacher Learning Goals	Additional Teacher Learning Goals
<ol style="list-style-type: none"> 1. The production of heat, light, sound, or motion indicates that an object has energy. 2. When an object moves faster, it has more energy than when it's moving slower. 3. Energy can transfer from place to place or object to object. 4. Energy can transform into different forms. 5. Energy is transferred and transformed but is neither created nor destroyed. Energy is conserved. 	<p>2Ta. The energy of an object depends on the object's mass, velocity (if it's moving), and composition, orientation, or position relative to another object.</p> <ul style="list-style-type: none"> • <i>Kinetic energy</i> is the energy of motion. • <i>Potential energy</i> is the energy of orientation, position, or composition. <p>3Ta. <i>Thermal energy</i> is the energy of moving particles of matter. The energy in systems ultimately transforms into heat and spreads out into the environment. Ultimately, this heat energy either leaves Earth's system or is reflected back to Earth.</p> <ul style="list-style-type: none"> • <i>Heat</i> is the transfer of thermal energy from matter of a higher temperature to matter of lower temperature. • <i>Temperature</i> is the measure of the average kinetic energy of the particles of matter. <p>5Ta. No system is 100% efficient. Eventually, some of the energy in a system transforms into heat, which either escapes Earth's system or is reflected back to Earth.</p>