

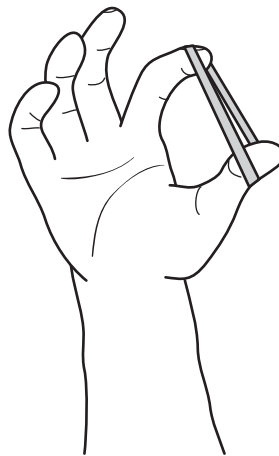
BENCHMARK SC.5.P.10.1

Reporting Category	Physical Science
Standard	Big Idea 10 Forms of Energy
Benchmark	SC.5.P.10.1 Investigate and describe some basic forms of energy, including light, heat, sound, electrical, chemical, and mechanical. (Also assesses SC.3.P.10.1, SC.3.P.10.3, SC.3.P.10.4, SC.3.P.11.1, SC.3.P.11.2, SC.4.P.10.1, and SC.4.P.10.3.)
Also Assesses	<p>SC.3.P.10.1 Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical.</p> <p>SC.3.P.10.3 Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another.</p> <p>SC.3.P.10.4 Demonstrate that light can be reflected, refracted, and absorbed.</p> <p>SC.3.P.11.1 Investigate, observe, and explain that things that give off light often also give off heat.</p> <p>SC.3.P.11.2 Investigate, observe, and explain that heat is produced when one object rubs against another, such as rubbing one's hands together.</p> <p>SC.4.P.10.1 Observe and describe some basic forms of energy, including light, heat, sound, electrical, and the energy of motion.</p> <p>SC.4.P.10.3 Investigate and explain that sound is produced by vibrating objects and that pitch depends on how fast or slow the object vibrates.</p>
Benchmark Clarifications	<p>Students will identify and/or describe some basic forms of energy.</p> <p>Students will describe that light travels in a straight line until it strikes an object or travels from one material to another.</p> <p>Students will explain that heat is produced when two objects are rubbed against each other.</p> <p>Students will explain that sound is produced by vibrations and/or that pitch depends on how fast or slow the object vibrates.</p>
Content Limits	<p>Items assessing basic forms of energy are limited to light, heat (thermal), sound, electrical, chemical, and mechanical energy.</p> <p>Items will not assess the transformation of energy from one form to another.</p> <p>Items assessing light reflection, refraction, or absorption should use the term <i>reflect</i>, <i>bend</i>, or <i>absorb</i> to describe light's behavior.</p>

Stimulus Attributes	The term <i>material</i> or <i>substance</i> should be used rather than the term <i>medium</i> or <i>media</i> . Scenarios referring to mechanical energy should not use the term <i>kinetic energy</i> or <i>potential energy</i> .
Response Attributes	None specified
Prior Knowledge	Items may require the student to apply science knowledge described in the NGSSS from lower grades. This benchmark requires prerequisite knowledge from SC.K.P.10.1 and SC.2.P.10.1.

Sample Item 15 **SC.4.P.10.3**

Jason stretches a rubber band between his fingers, as shown below. When he plucks the rubber band, it makes a sound.



Which of the following **best** explains why the rubber band makes a sound when Jason plucks it?

- A. It heats the air.
- ★ B. It vibrates the air.
- C. It absorbs energy from the air.
- D. It releases molecules into the air.