

### STRUCTURE AND TRANSFORMATION OF MATTER

A basic understanding of matter is essential to the conceptual development of other big ideas in science. In the elementary years of conceptual development, students will be studying properties of matter and physical changes of matter at the macro level through direct observations, forming the foundation for subsequent learning. During the middle years, physical and chemical changes in matter are observed, and students begin to relate these changes to the smaller constituents of matter—namely, atoms and molecules. By high school, students will be dealing with evidence from both direct and indirect observations (microscopic level and smaller) to consider theories related to change and conservation of matter. The use of models (and an understanding of their scales and limitations) is an effective means of learning about the structure of matter. Looking for patterns in observation is also

<u>Standard Learning Objectives</u>	<u>Additional Learning Objectives</u>
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1. 3-5.PS.1 identify the basic forms of energy (kinetic, thermal, radiant, electrical and magnetic), recognize that energy is conserved, and recognize that energy is the ability to cause motion or create change.	Recognize that energy is the ability to cause motion or create change.
2. 3-5.PS.2 recognize that sound is produced by vibrating objects and requires a medium through which to travel. relate the rate of vibration to the pitch of sound.	2. 3-5.PS.1 Recognize that energy is the ability to cause motion or create change.
<u>Required Background Knowledge</u>	<u>Required Background Knowledge</u>
None	None