

5th Grade

Unit 1: Structure and Properties of Matter:

Duration: 4-8 weeks

Desired Results		
Performance Expectations: 5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen. 3-5 ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 5-PS1-2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. 3-5 ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. 5-PS1-3 Make observations and measurements to identify materials based on their properties. 3-5 ETS1-3 Plan and carry out fair tests in	<i>Transfer</i>	
	Meaning ENDURING UNDERSTANDINGS: Crosscutting Concepts <i>Students will understand that...</i> • Natural objects exist from the very small to the immensely large. • Cause and effect relationships are routinely identified and used to explain change. • Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume. • Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume.	
	<i>Meaning</i>	
	Acquisition Disciplinary Core Ideas <i>Students will know...</i> • PS1-A Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model showing that gases are made from matter particles that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon and the effects of air on larger	Science and Engineering Practices <i>Students will be skilled at...</i> 1. Measure and graph quantities such as weight to address scientific and engineering questions and problems. 2. Use models to describe phenomena. 3. Make observations and measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon. 4. Conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are

which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. 5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in a new substance.	particles or objects. • The amount (weight) of matter is conserved when it changes form, even in transitions in which it seems to vanish. • No matter what reaction or change in properties occurs, the total weight of the substances does not change. (Boundary: Mass and weight are not distinguished at this grade level.) • Measurements of a variety of properties can be used to identify materials. (Boundary: At this grade level, mass and weight are not distinguished, and no attempt is made to define the unseen particles or explain the atomic-scale mechanism of evaporation and condensation.) • When two or more different substances are mixed, a new substance with different properties may be formed.	controlled and the number of trials considered.
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Evidence		
Evaluation Criteria	Assessment Evidence	
	PERFORMANCE TASK(S): McMillan McGraw-Hill Science, Gizmos, Mobymax	
	OTHER EVIDENCE: Unit assessment	
Learning Plan		
Summary of Key Learning Events and Instruction		

