

## What is it we expect students to learn? Identifying Essential Standards

Grade Level: 6<sup>th</sup>

Subject: Science

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Standard/ Description	Evidence of Proficiency	Prior Skills Needed	Common Summative Assessment	When Taught?	Enrichment Standards
<b>ME2A</b> <b>TSW</b> Identify sources of visible light and describe evidence that visible light travels in a straight line.	The student will demonstrate knowledge of this by observing a laser light experiment.	Identify sources of light	Light Labs	March-April	
<b>ME2A</b> <b>TSW</b> Compare the reflection of visible light by using various surfaces and the refraction of light passing through different transparent and translucent materials	The student will demonstrate understanding of this by conducting a lab of various materials and classifying them into translucent, transparent, and opaque.	Identify light being transferred	Light Labs Light Assessment questions 5, 20, 21	March-April	
<b>ME2A</b> <b>TSW</b> Describe how sound energy is transferred by wave-like disturbances that spread away from the source through a medium. Predict how the properties of the medium affect the speed of different types of mechanical waves	The student will understand knowledge of this by performing and answering questions using the Doppler Effect Gizmo.	Identify different ways to change the pitch of sound and how the ear serves as a receiver of sound	Doppler Effect Lab Doppler Sound Gizmos Sound Study Island Sound Assessment pg 1 #6, pg 6 #2, pg 7 #1	January-February	
<b>ME1G</b> <b>TSW</b> Recognize and classify changes in matter as chemical and/or physical. Identify chemical changes in common objects as a result of interactions with sources of energy or other	The student will demonstrate understanding of this concept by conducting a lab of physical and chemical changes stations where they must identify which change is occurring.	First introduced at this level. Re-call personal examples when they have experienced these changes ex. Cooking, eating, molding etc.	Chemical/Physical Changes Labs Matter Assessment 10, 11, 12, 13	August-September-October	

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<p>matter that form new substances with different characteristic properties.</p>				
<p><b>LO2A</b>  <b>TSW Compare and contrast the following plant and animal cell structures: cell membrane, nucleus, cell wall, chloroplast, and cytoplasm. Recognize the chloroplast as the cell structure where food is produced in plants and some unicellular organisms.</b></p>	<p>The student will show understanding by making an Edible Cell Project.</p>	<p>Identify and relate the similarities and differences between plants and their offspring</p>	<p>Cell Project</p>	<p>April-May</p>
<p><b>EC1A;EC1B</b>  <b>TSW Identify the biotic and abiotic factors that make up an ecosystem. Identify populations within a community that are in competition with one another for resources. Recognize the factors that affect the number and types of organisms an ecosystem can support. Predict the possible effects of changes in the number and types of organisms in an ecosystem on the population of other organisms within that ecosystem</b></p>	<p>36. What are the differences between abiotic factors and biotic factors? Give examples of both.            38. Each year, more deer come to rest in one particular field/section. Their population grows on average of 25 deer per year for eight years. Then suddenly their population begins to decrease. Give your reasons why you think their population increased and then decreased.</p>	<p>Identify the ways a specific organism may interact with other organisms or with the environment</p>	<p>Nonliving Test Essay question 26            Interactions of Life Test question 38</p>	<p>November-December</p>

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<p><b>EC2A</b>  <b>TSW</b> Diagram and describe the transfer of energy in an aquatic food web and a land food web with reference to producers, consumers, decomposers, scavengers, and predator/prey relationships. Classify populations of unicellular and multicellular organisms as producers, consumers, and decomposers by the role they serve in the ecosystem</p>	<p>The student will show understanding of this by performing 3 tasks on a Choice Board.</p>	<p>Classify populations of organisms as producers or consumers by the role they serve in the ecosystem</p>	<p>Gizmos on Living/Nonliving Organisms Study Island Assessments Organism Assessment</p>	<p>November-December</p>
<p><b>EC3A</b>  <b>TSW</b> Identify fossils as evidence some types of organisms that once lived in the past and have since become extinct have similarities with and differences from organisms living today</p>	<p>The student will show an understanding of this by identifying various fossil samples.</p>	<p>Compare and contrast common fossils found in Missouri (i.e., trilobites, ferns, crinoids, gastropods, bivalves, fish, mastodons) to organisms present on Earth today</p>	<p>Fossils Identification Assessment</p>	<p>May</p>
<p><b>EC3A</b>  <b>TSW</b> Relate examples of adaptations with in a species to its ability to survive in a specific environment. Predict how certain adaptations such as behavior, body structure, or coloration, may offer a survival advantage to an organism in a particular environment</p>	<p>The student will show an understanding of this by performing and answering the Adaptations Gizmo.</p>	<p>Identify specialized structures and describe how they help plants survive in their environment</p>	<p>Gizmos on Adaptations Study Island Assessments Organism Assessment</p>	<p>November-December</p>

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<p><b>ES2A</b>  <b>TSW Make inferences about the formation of sedimentary rocks from their physical properties. Explain how the formation of sedimentary rocks depends on weathering and erosion</b></p>	<p>The student will show an understanding of this with a ticket out of class.</p>	<p>Compare the physical properties (i.e., size, shape, color, texture, layering, presence of fossils) of rocks (mixtures of different Earth materials</p>	<p>Rock Identification Assessment/Lab Weathering and Soil Assessment numbers 1, 2, 3, 9</p>	<p>May</p>
<p><b>ES2A</b>  <b>TSW Describe how the Earth's surface and surface materials can change abruptly through the activity of floods, rock/mudslides, or volcanoes</b></p>	<p>The student will show an understanding of this through journal entries and pictures.</p>	<p>Describe how erosion processes (i.e., action of gravity, waves, wind, rivers, glaciers) cause surface changes that create and/or change Earth's surface materials and/or landforms/ bodies of water</p>	<p>Weathering and Soil Assessment numbers 12, 38</p>	<p>May</p>
<p><b>IN1A</b>  <b>TSW Design and Conduct a valid experiment</b></p>	<p>The students will show their understanding by performing a series of Inquiry Labs.</p>	<p>Formulate testable questions and explanations (hypotheses)</p>	<p>Inquiry Labs</p>	<p>Throughout entire year</p>
<p><b>IN1B</b>  <b>TSW Use a variety of tools and equipment to gather data and take measurement with the metric system</b></p>	<p>The students will show their understanding by performing a series of Inquiry Labs.</p>	<p>Determine the appropriate tools and techniques to collect data          Use a variety of tools and equipment to gather data</p>	<p>Labs using variety of tools-graduated cylinders, balance scales, beakers</p>	<p>Throughout entire year</p>
<p><b>IN1D</b>  <b>TSW Communicate the procedures and results of investigations and</b></p>	<p>The students will show their understanding by performing a series of Inquiry Labs.</p>	<p>Communicate the procedures and results of investigations and explanations through: oral presentations</p>	<p>Labs and Inquiry Assessments questions 1, 2, 4, 5</p>	<p>Throughout entire year</p>

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explanations through (oral presentations, drawings and maps, data tables, graphs, and writings).

drawings and maps  
data tables  
graphs (bar, single line, pictograph)  
writings

1. Standard: What is the essential standard to be learned? Describe in student-friendly vocabulary
2. Example/ Rigor: What does the proficient student work look like? Provide an example and/or description.
3. Prior skills needed: What prior knowledge, skills, and/or vocabulary is needed for a student to master this standard?
4. Common Assessment: What assessments(s) will be used to measure the student mastery?
5. When will this standard be taught?
6. Enrichment: What supplementary standards/ skills enrich the essential standard?

Mattos, Buffum, Weber, 2010