

DRAFT SCIENCE ALTERNATE EXPECTATIONS: GRADE 3

Topic Bundle: Forces and Interactions

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
Michigan K-12 Science Content Standard: 3-PS2-1 . Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.			
EE.3-PS2-1: Participate in an investigation to provide evidence of how motion (starting, stopping or direction) of an object will change due to an outside force (a push or pull).	EE.3-PS2-H.1: Participate in an investigation to provide evidence of how motion (starting, stopping or direction) of an object will change due to an outside force (a push or pull).	EE.3-PS2-M.1: Use observations to compare how a change in outside forces (push or pull) will cause a change in motion (starting, stopping, or direction) of an object.	EE.3-PS2-L.1: After observing a force (push or pull), identify whether or not a change in motion occurred.

Topic Bundle: Forces and Interactions

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: 3-PS2-2: Make observations and/or measurements of an object’s motion to provide evidence that a pattern can be used to predict future motion.</p>			
<p>EE.3-PS2-2: Use observations and/or measurements of an object’s repeated motion to identify the pattern and use the pattern to predict the future motion of the object.</p>	<p>EE.3-PS2-H.2: Use observations and/or measurements of an object’s repeated motion to identify the pattern and use the pattern to predict the future motion of the object.</p>	<p>EE.3-PS2-M.2: Use observations and/or measurements of an object’s repeated motion to identify the pattern of the object’s motion.</p>	<p>EE.3-PS2-L.2: Use observations of a repeated motion of an object to match the pattern of motion to an object in motion or one that is not.</p>

Topic Bundle: Forces and Interactions

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standards: 3-PS2-3 and 3-PS2-4</p> <p>3-PS2-3. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.</p> <p>3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets.*</p>			
<p>EE.3-PS2-3-4: Identify a question to ask to determine cause and effect relationships of magnetic interactions between two objects not in contact with each other.</p>	<p>EE.3-PS2-H.3-4: Identify a question to ask to determine cause and effect relationships of magnetic interactions between two objects not in contact with each other.</p>	<p>EE.3-PS2-M.3-4: Use observations to identify cause and effect relationships of magnetic interactions between two objects not in contact with each other.</p>	<p>EE.3-PS2-L.3-4: Recognize magnetic attraction (pull) between two objects or a magnet and an object.</p>

Topic Bundle: Interdependent Relationships in Ecosystems

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: 3-LS2-1. Construct an argument that some animals form groups that help members survive.</p>			
<p>EE.3-LS2-1: Use evidence to explain how living in groups helps some animals survive. (e.g., obtain food, defend themselves, cope with environmental changes).</p>	<p>EE.3-LS2-H.1: Use evidence to explain how living in groups helps some animals survive (e.g., obtain food, defend themselves, cope with environmental changes).</p>	<p>EE.3-LS2-M.1: Identify the benefits of living in a group that help some animals survive (e.g., obtain food, defend themselves, cope with environmental changes).</p>	<p>EE.3-LS2-L.1: Given an animal group, identify one benefit of living in the group that helps some of the animals survive.</p>

Topic Bundle: Interdependent Relationships in Ecosystems

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: 3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.</p>			
<p>EE.3-LS4-1: Use observations to provide evidence that fossils represent plants, animals, and the environments where they lived long ago.</p>	<p>EE.3-LS4-H.1: Use observations to provide evidence that fossils represent plants, animals, and the environments where they lived long ago.</p>	<p>EE.3-LS4-M.1: Given examples of fossils, classify them as plants and animals or based on their environments where they lived long ago.</p>	<p>EE.3-LS4-L.1: Recognize a fossil is evidence of a plant or animal from long ago.</p>

Topic Bundle: Interdependent Relationships in Ecosystems

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.</p>			
<p>EE.3-LS4-3: Use evidence to determine that certain habitats meet the needs of plants and animals better than other habitats.</p>	<p>EE.3-LS4-H.3: Use evidence to determine that certain habitats meet the needs of plants and animals better than other habitats.</p>	<p>EE.3-LS4-M.3: Use evidence to identify which plants or animals would survive best in a given habitat.</p>	<p>EE.3-LS4-L.3: Match the appropriate plant or animal to the habitat that would best meet its needs for survival.</p>

Topic Bundle: Interdependent Relationships in Ecosystems

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.*</p>			
<p>EE.3-LS4-4: Use evidence to determine how a solution to a given environmental change or problem affects the types of plants and animals that live there.</p>	<p>EE.3-LS4-H.4: Use evidence to determine how a solution to a given environmental change or problem affects the types of plants and animals that live there.</p>	<p>EE.3-LS4-M.4: Identify what happens to plants and animals when a major environmental change occurs (e.g., forest fires, floods, deforestation).</p>	<p>EE.3-LS4-L.4: Distinguish between a minor and major change in an environment (e.g., campfire vs. a forest fire, a typical rainstorm vs. a flooding event).</p>

Topic Bundle: Inheritance and Variation of Traits: Life Cycles and Traits

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: 3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.</p>			
<p>EE.3-LS1-1: Participate in developing a model to describe or compare the pattern of life cycles in organisms.</p>	<p>EE.3-LS1-H.1: Participate in developing a model to describe or compare the pattern of life cycles in organisms.</p>	<p>EE.3-LS1-M.1: Use a life cycle model to identify the next stage in an organism’s life cycle when given a particular stage.</p>	<p>EE.3-LS1-L.1: Use a life cycle model to differentiate between the infant/baby and adult stage of the life cycle of an organism.</p>

Topic Bundle: Inheritance and Variation of Traits: Life Cycles and Traits

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: 3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.</p>			
<p>EE.3-LS3-1: Analyze and classify evidence that plants and animals have traits similar to their parents and siblings.</p>	<p>EE.3-LS3-H.1: Analyze and classify evidence that plants and animals have traits similar to their parents and siblings.</p>	<p>EE.3-LS3-M.1: Use evidence to show how offspring have similar physical traits to their parents.</p>	<p>EE.3-LS3-L.1: Match the parents and offspring to one another.</p>

Topic Bundle: Inheritance and Variation of Traits: Life Cycles and Traits

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standards: 3-LS3-2 and 3-LS4-2</p> <p>3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.</p> <p>3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.</p>			
<p>EE.3-LS3-2-4-2: Use evidence to determine how an organism's observable traits can be affected or changed by the environment.</p>	<p>EE.3-LS3-H.2-4-2: Use evidence to determine how an organism's observable traits can be affected or changed by the environment.</p>	<p>EE.3-LS3-M.2-4-2: Identify environmental factors that would influence a specified trait of an organism.</p>	<p>EE.3-LS3-L.2-4-2: Identify the environmental factor that influenced the observable change in an organism's trait.</p>

Topic Bundle: Weather and Climate

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: 3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.</p>			
<p>EE.3-ESS2-1: Create a graphical representation to organize typical weather conditions expected during a particular season in Michigan. (...their local area.)</p>	<p>EE.3-ESS2-H.1: Create a graphical representation to organize typical weather conditions expected during a particular season in Michigan. (...their local area.)</p>	<p>EE.3-ESS2-M.1: Use graphical representations to identify typical weather conditions expected during a particular season in Michigan.</p>	<p>EE.3-ESS2-L.1: Identify a typical weather condition expected during a given season in Michigan.</p>

Topic Bundle: Weather and Climate

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: 3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.</p>			
<p>EE.3-ESS2-2: With guidance and support, obtain information to describe characteristics of climates in different regions of the world.</p>	<p>EE.3-ESS2-H.2: With guidance and support, obtain information to describe characteristics of climates in different regions of the world.</p>	<p>EE.3-ESS2-M.2: Given information, compare typical characteristics between two climates.</p>	<p>EE.3-ESS2-L.2: Match a characteristic that is typical to a specific climate.</p>

Topic Bundle: Weather and Climate

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: 3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.*</p>			
<p>EE.3-ESS3-1: Use evidence to determine the effectiveness of a solution that reduces the impact of a weather-related safety hazard.</p>	<p>EE.3-ESS3-H.1: Use evidence to determine the effectiveness of a solution that reduces the impact of a weather-related safety hazard.</p>	<p>EE.3-ESS3-M.1: Identify an appropriate solution to a weather-related hazard.</p>	<p>EE.3-ESS3-L.1: Recognize/or identify weather-related hazards.</p>

Topic Bundle: Engineering Design

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
Michigan K-12 Science Content Standard: 3-5-ETS1-1 . Define a simple design problem reflecting a need or a want that includes a specified criteria for success and constraints on materials, time, or cost.			
EE.3-5-ETS1-1: Determine a simple solution to a design problem that reflects a need or want.	EE.3-5-ETS1-H.1: Determine a simple solution to a design problem that reflects a need or want.	EE.3-5-ETS1-M.1: Identify appropriate materials for a given solution to a design problem.	EE.3-5-ETS1-L.1: Participate in activities that demonstrate finding a solution to a simple design problem (in order) to identify one action/material.

Topic Bundle: Engineering Design

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: 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.</p>			
<p>EE.3-5-ETS1-2: Given a simple problem generate and/or compare possible solutions to the problem based on how well each solution is likely to meet the specified desired results.</p>	<p>EE.3-5-ETS1-H.2: Given a simple problem generate and/or compare possible solutions to the problem based on how well each solution is likely to meet specified desired results.</p>	<p>EE.3-5-ETS1-M.2: Given a simple problem, compare multiple solutions to identify the solution that meets specified desired results.</p>	<p>EE.3-5-ETS1-L.2: Participate in testing and comparing two solutions to a simple problem to identify the solution that best meets specified desired results.</p>

Topic Bundle: Engineering Design

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: 3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.</p>			
<p>EE.3-5-ETS1-3: Describe changes needed to a given design to improve the design's ability to meet the desired results.</p>	<p>EE.3-5-ETS1-H.3: Describe changes needed to a given design to improve the design's ability to meet the desired results.</p>	<p>EE.3-5-ETS1-M.3: Determine whether or not an engineering design product meets the desired results.</p>	<p>EE.3-5-ETS1-L.3: Identify whether a specific product is working (broken) or not.</p>