

DRAFT SCIENCE ALTERNATE EXPECTATIONS: KINDERGARTEN

Topic Bundle: Forces and Interactions: Pushes and Pulls

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: K-PS2-1: Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.</p>			
<p>EE.K-PS2-1: Given options, choose elements of a plan to conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of a familiar object.</p>	<p>EE.K-PS2-H.1: Given options, choose elements of a plan to conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of a familiar object.</p>	<p>EE.K-PS2-M.1: Given observations of familiar objects and push-pull actions, identify that a push moves an object away and a pull moves an object toward.</p>	<p>EE.K-PS2-L.1: Given observations of familiar objects and push-pull actions, recognize that a familiar object moves when it is pulled or pushed.</p>

Topic Bundle: Forces and Interactions: Pushes and Pulls

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: K-PS2-2: Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or pull.</p>			
<p>EE.K-PS2-2: Using observational data, identify the outcome of a design solution intended to change the speed or direction of a familiar object with a push or pull.</p>	<p>EE.K-PS2-H.2: Using observational data, identify the outcome of a design solution intended to change the speed or direction of a familiar object with a push or pull.</p>	<p>EE.K-PS2-M.2: Given observations, identify the outcome of a design solution intended to change the speed of a familiar object with a push or pull.</p>	<p>EE.K-PS2-L2: Given observations, identify the outcome of a design solution intended to change the speed of a familiar object with a push force.</p>

Topic Bundle: Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: K-ESS2-2: Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.</p>			
<p>EE.K-ESS2-2: Use familiar text and/or real-life objects to identify examples that support a given claim that plants and animals (including humans) can change the environment to meet their needs.</p>	<p>EE.K-ESS2-H.2: Use familiar text and/or real-life objects to identify examples that support a given claim that plants and animals (including humans) can change the environment to meet their needs.</p>	<p>EE.K-ESS2-M.2: Given clearly different options (pictures, actions or objects), identify an action that can be done by animals (including humans) to meet an immediate need.</p>	<p>EE.K-ESS2-L.2: Given clearly different options (pictures, actions or objects), identify an action that can be done by an animal or human to meet an immediate need.</p>

Topic Bundle: Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: K-ESS3-1: Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.</p>			
<p>EE.K-ESS3-1: Identify models that show the relationship between the needs of different plants and animals (including humans) and the places they live.</p>	<p>EE.K-ESS3-H.1: Identify models that show the relationship between the needs of different plants and animals (including humans) and the places they live.</p>	<p>EE.K-ESS3-M.1: Given visual representations and/or real examples of animals accessing food in their environments, identify which environment meets an animal’s need for food.</p>	<p>EE.K-ESS3-L.1: Given vastly different environments, recognize that an animal lives in the place where it finds food.</p>

Topic Bundle: Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: K-ESS3-3: Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.</p>			
<p>EE.K-ESS3-3: Given options, communicate solutions that students can take to help the environment (land, water, air, and/or other living things in the local environment).</p>	<p>EE.K-ESS3-H.3: Given options, communicate solutions that students can take to help the environment (land, water, air, and/or other living things in the local environment).</p>	<p>EE.K-ESS3-M.3: Given vastly different options, identify examples of actions that students can take to help the environment (land, water, air, and/or other living things in the local environment).</p>	<p>EE.K-ESS3-L.3: Given vastly different options, identify an example of an action that students can take to help the environment (land, water, air, and/or other living things in the local environment).</p>

Topic Bundle: Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: K-LS1-1: Use observations to describe patterns of what plants and animals (including humans) need to survive.</p>			
<p>EE.K-LS1-1: Use observations to identify patterns of what plants and animals (including humans) need to live and/or grow.</p>	<p>EE.K-LS1-H.1: Use observations to identify patterns of what plants and animals (including humans) need to live and/or grow.</p>	<p>EE.K-LS1-M.1: Using familiar routines, identify what plants and/or animals (including humans) need to live and/or grow.</p>	<p>EE.K-LS1-L.1: Using familiar routines, identify what humans and/or animals need, such as food, water or light (at least one).</p>

Topic Bundle: Weather and Climate

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
Michigan K-12 Science Content Standard: K-ESS2-1: Use and share observations of local weather conditions to describe patterns over time.			
EE.K-ESS2-1: Record observations of local weather and use the observations to describe patterns over time.	EE.K-ESS2-H.1: Record observations of local weather and use the observations to describe patterns over time.	EE.K-ESS2-M.1: Use observations of local weather to determine patterns that inform decisions about how to dress/prepare for the weather.	EE.K-ESS2-L.1: Given short-term (one day) weather information, choose appropriate dress from given options.

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: K-ESS3-2: Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.</p>			
<p>EE.K-ESS3-2: Identify sources and gather information about weather from multiple sources (newspapers, phones, computers and looking outside).</p>	<p>EE.K-ESS3-H.2: Identify sources and gather information about weather from multiple sources.</p>	<p>EE.K-ESS3-M.2: Select the source used to gather information about the weather from different sources.</p>	<p>EE.K-ESS3-L.2: Given two vastly different options, identify the source of weather information using supportive technology.</p>

Topic Bundle: Weather and Climate

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
Michigan K-12 Science Content Standard: K-PS3-1: Make observations to determine the effect of sunlight on Earth's surface.			
EE.K-PS3-1: Use Make observations to identify the effect of sunlight on objects on Earth.	EE.K-PS3-H.1: Make observations to identify the effect of sunlight on objects on Earth.	EE.K-PS3-M.1: Using facilitated observations, identify the pattern that objects in sunlight are warmer than those not in sunlight.	EE.K-PS3-L.1: Using facilitated observations of objects in the sun and shade, differentiate between an object that is warmer and another which is colder.

Topic Bundle: Weather and Climate

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
Michigan K-12 Science Content Standard: K-PS3-2: Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.			
EE.K-PS3-2: Given an example and a partially built structure that will reduce the warming effect of sunlight on an object, select the material needed to complete the structure.	EE.K-PS3-H.2: Given an example and a partially built structure that will reduce the warming effect of sunlight on an object, select the material needed to complete the structure.	EE.K-PS3-M.2: Given specific tools, select the tool that will reduce the warming effect of sunlight on an object.	EE.K-PS3-L.2: Given an experience of being in the sun and being asked where to go to get cooler, recognize that moving to a shaded area is a solution.

Topic Bundle: Engineering Design

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
Michigan K-12 Science Content Standard: K-2-ETS1-1 . Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.			
EE.K-2-ETS1-1a: Demonstrate and use emerging awareness about a situation people want to change or a problem that needs to be solved.	EE.K-2-ETS1-H.1a: Demonstrate and use emerging awareness about a situation people want to change or a problem that needs to be solved.	EE.K-2-ETS1-M.1a: Demonstrate and use emerging awareness about a situation people want to change or a problem that needs to be solved.	EE.K-2-ETS1-L.1a: Demonstrate and use emerging awareness about a situation people want to change or a problem that needs to be solved.
EE.K-2-ETS1-1b: Given a menu of options, select appropriate questions about a situation people want to change or a problem that needs to be solved.	EE.K-2-ETS1-H.1b: Given a menu of options, select appropriate questions about a situation people want to change or a problem that needs to be solved.	EE.K-2-ETS1-M.1b: With guidance and support, ask an appropriate question about a situation people want to change or a problem that needs to be solved.	EE.K-2-ETS1-L.1b: Given a scenario of a problem solved, identify the solution when presented with a choice of two solutions.
EE.K-2-ETS1-1c: Given clearly different options, choose a tool or object that can be used to solve a problem.	EE.K-2-ETS1-H.1c: Given clearly different options, choose a tool or object that can be used to solve a problem.	EE.K-2-ETS1-M.1c: Given clearly different options, choose a tool or object that can be used to solve a problem.	EE.K-2-ETS1-L.1c: Given two vastly different options, identify a tool or object that can be used to solve a problem.

Topic Bundle: Engineering Design

Target Alternate Expectation	Michigan Range of Complexity		
	High Range	Medium Range	Low Range
<p>Michigan K-12 Science Content Standard: K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p>			
<p>K-2-ETS1-2.a: When presented with a problem and a collection of tools, materials, or objects that are significantly different shapes, choose the tool, material, or object that will help solve the problem.</p>	<p>K-2-ETS1-H.2.a: When presented with a problem and a collection of tools, materials, or objects that are significantly different shapes, choose the tool, material, or object that will help solve the problem.</p>	<p>K-2-ETS1-M.2.a: When presented with a problem and a collection of tools, materials, or objects that are significantly different shapes, choose the tool, material, or object that will help solve the problem.</p>	<p>K-2-ETS1-L.2: When presented with a problem and tools, choose the tool that will help solve the problem.</p>
<p>K-2-ETS1-2.b: Demonstrate how the shape of a tool, material, or object helps solve the problem.</p>	<p>K-2-ETS1-H.2.b: Demonstrate how the shape of a tool, material, or object helps solve the problem.</p>	<p>K-2-ETS1-M.2.b: Identify that the shape of a tool, material, or object helps solve the problem.</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: K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p>			
<p>EE.K-2-ETS1-3: Use observational data from tests of two objects designed to solve the same problem to compare how two tools, materials, or objects do or do not solve the same problem.</p>	<p>EE.K-2-ETS1-H.3: Use observational data from tests of two objects designed to solve the same problem to compare how two tools, materials, or objects do or do not solve the same problem.</p>	<p>EE.K-2-ETS1-M.3: Use observational data from tests of two vastly different objects designed to solve the same problem to compare how two tools, materials, or objects do or do not solve the same problem.</p>	<p>EE.K-2-ETS1-L.3: Given a familiar problem and two vastly different objects, materials or tools, identify which one solves the problem.</p>