

MI-Access Supported Independence Science Assessment

Physical Science - Grade 8 Performance Level Descriptors

Grade 8	EMERGING	ATTAINED	SURPASSED
Physical Science	Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who are emerging toward the performance standard , with or without assistance, are typically able to demonstrate a limited* ability to...	Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who attained the performance standard are typically able to independently* ...	Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who surpassed the performance standard are typically able to consistently** and independently* ...
TB: Structure and Properties of Matter	<ul style="list-style-type: none"> identify a given substance or material as a liquid or a solid, or identify a familiar object made by humans or identify the natural material the familiar object comes from, or recognize that when temperature is increased or decreased it can cause a change in state of a substance. 	<ul style="list-style-type: none"> identify given substances as a solid, liquid, or gas, and/or identify materials made by humans used to make an object used in the student’s daily life and/or identify the natural material(s) it comes from, and/or predict the resulting state of matter after heat is added or removed from a pure substance, during a demonstration. 	<ul style="list-style-type: none"> use a model to identify materials and substances as solids, liquids, or gases, and use information and concrete objects to identify materials made by humans and the natural materials they come from, and use a model to determine how substances can change state between liquid, solid, or gas when the temperature is increased and decreased.
TB: Chemical Reactions	<ul style="list-style-type: none"> recognize that a substance changed during a chemical reaction, or identify that a given substance releases heat through a chemical reaction. 	<ul style="list-style-type: none"> identify one physical property of a given substance that changed during a chemical reaction, and/or identify if a given substance absorbs or releases heat through a chemical reaction. 	<ul style="list-style-type: none"> participate in an investigation to identify one or more properties of substances that changed during a chemical reaction, and participate in an investigation to identify if substances release or absorb heat through a chemical reaction.

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TB: Forces & Interactions	<ul style="list-style-type: none"> • identify how an object responds after it collides with a stationary object, or • recognize that speed or direction of an object changes when a force is applied, or • compare the strength of two magnets, including the size of or the distance between the magnets, or • recognize that all objects are affected by a force called gravity. 	<ul style="list-style-type: none"> • use a model to identify the correct outcome to show how two objects will respond to an impact when the objects collide with each other, and/or • use a model to identify that speed and/or direction of a given object change when a force is applied, and/or • compare the strength of magnetic forces based on the size and/or distance between two magnets or the strength of electric forces based on size and/or distance between two charged objects, and/or • identify one piece of evidence that supports the claim that all objects are affected by the force of gravity. 	<ul style="list-style-type: none"> • participate in modeling a collision to predict how two objects respond after the objects collide, and • participate in an investigation to identify that speed and direction of objects change when a force is applied, and • participate in an investigation to compare the strength of magnetic forces based on the size and/or distance between two magnets and the strength of electric forces based on size and/or distance between two charged objects, and • participate in an investigation using evidence to support the claim that all objects are affected by the force of gravity.

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TB: Energy	<ul style="list-style-type: none"> recognize the speed of an object can be used to describe the kinetic energy of the object, or identify that an object has more potential energy the higher it is off the ground, or identify that kinetic energy is transferred between two familiar objects (during a collision). 	<ul style="list-style-type: none"> use a demonstration to compare the kinetic energy (speed) of two or more objects, and/or use a demonstration to identify that the higher or lower an object is from the ground, the more or less potential energy it has, and/or identify what type of energy (thermal or kinetic) is transferred between two or more objects. 	<ul style="list-style-type: none"> use data in a bar or picture graph to compare the kinetic energy (speed) of objects to determine the object with the greatest and least kinetic energy, and use one piece of evidence to show that the higher or lower an object is from the ground, the more or less potential energy it has, and participate in an investigation to identify what type of energy (thermal or kinetic) is transferred between two or more objects.
TB: Waves & Electromagnetic Radiation	<ul style="list-style-type: none"> recognize that two waves of different heights have different amounts of energy, or identify if light waves or sound waves are reflected or transmitted through different media. 	<ul style="list-style-type: none"> compare the energy of two or more different waves using wave height, and/or identify whether sound, light, or water waves are reflected, absorbed, or transmitted through different media. 	<ul style="list-style-type: none"> use data to compare the energy of multiple waves using wave height, and participate in an investigation to identify if sound, light, and water waves are reflected, absorbed, or transmitted through different media.
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MI-Access Supported Independence Science Assessment

Life Science - Grade 8 Performance Level Descriptors

Grade 8	EMERGING	ATTAINED	SURPASSED
Life Science	Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who are emerging toward the performance standard , with or without assistance, are typically able to demonstrate a limited* ability to...	Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who attained the performance standard are typically able to independently* ...	Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who surpassed the performance standard are typically able to consistently** and independently* ...
TB: Structure, Function, & Information Processing	<ul style="list-style-type: none"> • compare a living and a non-living thing to identify the difference, or • identify one difference or one similarity between a plant and an animal, or • identify a major organ of a given body system or identify the function of a given system, or • identify one of the five senses used to collect information or identify that information collected through one of the five senses is sent to the brain. 	<ul style="list-style-type: none"> • compare living and non-living things to identify the differences, and/or • compare plants and animals to determine a similarity or a difference, and/or • use a model to identify that body systems are made of organs, and/or that organs form systems that work together to support life, and/or • identify that the five senses are used to collect information or that information collected through any of the five senses is sent to the brain to respond to the environment. 	<ul style="list-style-type: none"> • participate in an investigation to compare living and non-living things to identify differences, and • compare plants and animals to determine multiple similarities and differences, and • use models to determine that body systems are made of organs, and organs form systems that work together to support life, and • participate in an investigation to determine that information is collected through the five senses and that information is sent to the brain to respond to the environment.

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TB: Matter & Energy in Organisms & Ecosystems	<ul style="list-style-type: none"> • identify one thing that plants need (sunlight, water, or carbon dioxide) to produce their own food, or • identify that people or animals use energy from food to live and grow, or • identify how a given resource or a lack of the given resource can affect a given organism, or • identify that energy flows from plants to animals in an ecosystem, or 	<ul style="list-style-type: none"> • use a model to identify that plants need sunlight, water, and carbon dioxide to produce energy and oxygen, and/or • identify that people and/or animals use energy and nutrients from food to live and grow, and/or • use data to identify how the availability of resources and/or the lack of availability affects individuals and/or populations, and/or • use a simple food chain model to identify how energy transfers from one part to another in an ecosystem, and/or 	<ul style="list-style-type: none"> • use models, simulations, or observations to identify that plants need sunlight, water, and carbon dioxide to produce energy and oxygen, and • use a model to describe that people and animals use energy and nutrients from food to live and grow, and • participate in an investigation to identify how the availability of resources and the lack of availability affects individuals and populations, and • use a food web model to identify how energy transfers from one part to another in an ecosystem, and

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TB: Matter & Energy in Organisms & Ecosystems (continued)	<ul style="list-style-type: none"> identify an ecosystem that can support a larger population of a given organism or an ecosystem that is not able to support a larger population of a given organism. 	<ul style="list-style-type: none"> use images or videos of an ecosystem before and after physical changes occurred in the ecosystem to identify whether a physical change to an ecosystem can support a larger population of a given organism. 	<ul style="list-style-type: none"> use images or videos of an ecosystem before and after physical changes occurred in the ecosystem to describe which can support a larger population of a given organism.
TB: Interdependent Relationships in Ecosystems	<ul style="list-style-type: none"> use a picture to identify a predatory interaction between two familiar organisms, or identify if a given solution solves a problem or does not solve a problem in a given environment. 	<ul style="list-style-type: none"> use pictures of two different relationships within an ecosystem to identify competitive, predatory, or mutually beneficial interactions between organisms in an ecosystem, and/or identify which solutions help and/or do not help to solve a problem in a given environment. 	<ul style="list-style-type: none"> use pictures of more than two organisms within an ecosystem to describe competitive, predatory, and mutually beneficial interactions between organisms in an ecosystem, and use a given environment with a problem to identify which solutions help and which solutions do not help to keep the environment healthy.
TB: Growth, Development & Reproduction of Organisms	<ul style="list-style-type: none"> identify one characteristic of a familiar plant or animal that supports successful continuation of the species, or 	<ul style="list-style-type: none"> identify a characteristic of plants or animals that support successful continuation of the species, and/or 	<ul style="list-style-type: none"> use given information to identify characteristics of plants and/or animals that support successful continuation of the species, and

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TB: Growth, Development & Reproduction of Organisms (continued)	<ul style="list-style-type: none"> • identify whether the survival of a familiar organism is helped or harmed by placing it in a different environment, or • use a picture to identify a similarity or a difference between parents and offspring, or • identify a familiar organism with a given desired physical trait. 	<ul style="list-style-type: none"> • identify if the survival of a given organism is affected by either a change in a physical characteristic or the organism being placed in a different environment, and/or • use pictures to identify similarities and/or differences between parents and offspring, and/or • identify which of two organisms with a given desired trait should be selected to reproduce. 	<ul style="list-style-type: none"> • identify how changes in physical characteristics of a given organism and/or a change to a different environment affects the survival of the organism, and • use pictures to describe similarities and differences between parents and offspring, and • identify organisms with desired traits that should be selected to reproduce.
TB: Natural Selection & Adaptations	<ul style="list-style-type: none"> • use a picture to identify one similar or one different trait between a fossil of an ancestor and a modern descendant, or • identify one similarity between a picture of an embryo and a picture of a fully formed animal, or 	<ul style="list-style-type: none"> • use pictures of fossils of ancestors and their modern descendants to identify similarities or differences in their traits, and/or • identify two or more developmental similarities using pictures of an embryo and a fully formed animal or use pictures to identify a relationship between two animals, and/or 	<ul style="list-style-type: none"> • use pictures of fossils of ancestors and their modern descendants to identify similarities and differences in traits, and • use pictures of embryos and fully formed animals to identify similarities in the development of animals or to show relationships between more than two animals, and

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TB: Natural Selection & Adaptations (continued)	<ul style="list-style-type: none"> identify a beneficial trait that helps an organism to survive. 	<ul style="list-style-type: none"> identify an organism with a given beneficial trait that helps the organism to survive and reproduce. 	<ul style="list-style-type: none"> use given data about a beneficial trait to identify an organism that has this trait and is more likely to survive and reproduce.
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Earth & Space Sciences - Grade 8 Performance Level Descriptors

Grade 8	EMERGING	ATTAINED	SURPASSED
Earth & Space Sciences	Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who are emerging toward the performance standard , with or without assistance, are typically able to demonstrate a limited* ability to...	Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who attained the performance standard are typically able to independently* ...	Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who surpassed the performance standard are typically able to consistently** and independently* ...
TB: Space Systems	<ul style="list-style-type: none"> use a model to identify the monthly pattern of the moon's orbit around Earth, or use a model to recognize that the Sun holds the planets in orbit, or use a model to recognize that the Sun is larger than the planets. 	<ul style="list-style-type: none"> use a model to identify the monthly pattern of the moon's orbit around Earth and/or the yearly pattern of Earth's orbit around the Sun, and/or use models to identify the Sun as the center of the solar system (in which Earth is located) and/or that the Sun holds the planets in orbit, and/or use a model to identify there are differences in the size of objects in the solar system (in which Earth is located). 	<ul style="list-style-type: none"> use a model to identify the monthly pattern of the moon's orbit around Earth and the yearly pattern of Earth's orbit around the Sun, and use models to identify the Sun as the center of the solar system (in which Earth is located) and that the Sun holds the planets in orbit, and use scaled models of objects in the solar system (in which Earth is located) to show there are differences in size.
TB: History of Earth	<ul style="list-style-type: none"> use a model to recognize that Earth has layers of rock that formed over a long period of time, or 	<ul style="list-style-type: none"> use a model to identify that Earth has layers of rock and that older rock layers are found under younger layers, and/or 	<ul style="list-style-type: none"> participate in making or using models to show that Earth has layers of rock and older layers are found under younger layers, and

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TB: History of Earth (continued)	<ul style="list-style-type: none"> use a picture to recognize that Earth’s surface changes through volcanic eruptions or earthquakes. 	<ul style="list-style-type: none"> use a model to identify evidence that natural processes change Earth’s surface through weathering, erosion, volcanic eruptions, or earthquakes. 	<ul style="list-style-type: none"> use models to identify evidence that Earth’s surface changes through weathering, erosion, volcanic eruptions, and earthquakes.
TB: Earth’s Systems	<ul style="list-style-type: none"> recognize that rocks are formed by Earth’s processes, or use a model to identify a familiar change in the form of water (solid to liquid, or liquid to solid) in the water cycle, or identify one non-renewable natural resource or identify one familiar function when humans use a given non-renewable natural resource. 	<ul style="list-style-type: none"> identify a process that forms a given type of rock, and/or use a model to show or identify changes in the forms of water (solid, liquid, gas) in the water cycle during evaporation or precipitation, and/or identify a non-renewable natural resource used by humans (such as soil, minerals—iron, copper, salt, and/or fossil fuels—coal, gas) for a familiar function. 	<ul style="list-style-type: none"> use models to identify the processes that form different types of rocks, and use a model to identify a description of the changes in the forms of water (solid, liquid, gas) in the water cycle during evaporation and precipitation, and identify non-renewable natural resources and familiar functions when humans use non-renewable natural resources (such as soil, minerals—iron, copper, salt, and fossil fuels—coal, gas).
TB: Weather & Climate	<ul style="list-style-type: none"> recognize that two different locations can have different weather conditions on the same day, or 	<ul style="list-style-type: none"> compare local weather conditions to conditions at a different location occurring at the same time or day, and/or 	<ul style="list-style-type: none"> use data to compare local weather conditions to conditions at different locations occurring at the same time or day, and

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TB: Weather & Climate (continued)	<p>Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who are emerging toward the performance standard, with or without assistance, are typically able to demonstrate a limited* ability to...</p> <ul style="list-style-type: none"> identify areas of Earth that are warmer or areas that are colder. 	<p>Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who attained the performance standard are typically able to independently*...</p> <ul style="list-style-type: none"> use a picture to identify that areas near the equator have warmer climates than areas far from the equator. 	<p>Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who surpassed the performance standard are typically able to consistently** and independently*...</p> <ul style="list-style-type: none"> use models of Earth and the Sun to identify that areas near the equator have warmer climates than areas far from the equator.
TB: Human Impacts	<ul style="list-style-type: none"> recognize a characteristic of a given natural hazard (tornado, flood, blizzard), or identify a human behavior that has a harmful effect on one of Earth's resources (such as water, air, or land). 	<ul style="list-style-type: none"> identify one or more characteristics of a natural hazard (tornado, flood, blizzard, drought), and/or identify a harmful effect of human use of resources on Earth (including impacts to food, air, water, and/or land). 	<ul style="list-style-type: none"> identify two or more characteristics of different natural hazards, (tornado, flood, blizzard, drought, earthquake, landslide, volcanic eruption), and identify two or more harmful effects of human use of resources on Earth (including impacts to food, air, water, and/or land).
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ETS - Grade 8 Performance Level Descriptors

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Engineering, Technology, and Applications of Science	Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who are emerging toward the performance standard , with or without assistance, are typically able to demonstrate a limited* ability to...	Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who attained the performance standard are typically able to independently* ...	Based on the Essential Elements using the Medium level of the Michigan Range of Complexity, across all content expectations, students who surpassed the performance standard are typically able to consistently** and independently* ...
TB: Engineering Design	<ul style="list-style-type: none"> identify one appropriate material for a given solution to a design problem, or compare two solutions to identify the solution that best meets a specified desired result, or identify an engineering design product or identify a desired result, or recognize a modification to a model, tool, or object that meets a specified criterion. 	<ul style="list-style-type: none"> identify appropriate materials for a given solution to a design problem, and/or compare multiple solutions to a given simple problem to identify the solution that meets specified desired results, and/or determine whether or not an engineering design product meets the desired results, and/or identify which of two given modification options to a model, tool, or object shows the better result for a specified criterion. 	<ul style="list-style-type: none"> identify appropriate materials for proposed solutions to a design problem, and compare multiple solutions to a simple given problem to identify two possible solutions that meet specified desired results, and determine whether or not an engineering design product meets the desired results, and participate in testing two or more given modification options to a model, tool, or object to identify the option that shows the best result for a specified criterion.
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