Grade 5 OSAS Science Achievement Level Descriptors

	Level 1	Level 2	Level 3	Level 4
Physical Science				
PS1 Matter and its Interactions	Limited to no demonstration of using a model to describe matter as made of tiny particles and make observations that mixing different types of matter can result in new substances.	Use a model to describe matter as made of tiny particles and make observations that mixing different types of matter can result in new substances.	Develop models that represent matter is made up of tiny particles and conduct an investigation to provide data that mixing different types of matter can result in new substances.	Evaluate and revise models that represent that matter is made of tiny particles and plan an investigation to provide data that mixing different types of matter can result in new substances.
PS2 Motion and Stability: Forces and Interactions	Limited to no demonstration of planning and conducting an investigation matter as made of tiny particles and make observations that mixing different types of matter can result in new substances.	Identify questions that can be investigated to provide evidence about the effects of balanced and unbalanced forces on the motions of objects.	Ask questions, and conduct an investigations to provide evidence about cause and effect relationships between balanced and unbalanced forces and objects' motions of objects.	Ask questions, plan, and conduct investigations to provide evidence that a pattern can be used to predict the future motion of objects caused by balanced and unbalanced forces.
PS3 Energy	Limited to no demonstration of using evidence to support an explanation about the relationship of an object's speed and its energy and predict how changes in energy will be observable when objects collide.	Use evidence to support an explanation about the relationship of an object's speed and its energy and predict how changes in energy will be observable when objects collide.	Use evidence to construct an explanation about the relationship of an object's speed and its energy and predict how changes in energy will be observable when objects collide.	Use evidence to compare and revise explanations describing the relationship of an object's speed and its energy and predict how changes in energy will be observable when objects collide.
PS4 Waves and their Applications in Technologies for Information Transfer	Limited or no demonstration to use a model to describe the patterns of wave properties and how reflected light from objects to the eye causes objects to be seen.	Use a model to describe the patterns of wave properties and how reflected light from objects to the eye causes objects to be seen.	Develop a model to describe the patterns of wave properties and how reflected light from objects to the eye and causes objects to be seen.	Evaluate and/or revise a model that describes the patterns of wave properties, and use the model to explain how reflected light from objects to the eye causes objects to be seen.
Life Science				
LS1 From Molecules to Organisms: Structure and Processes	Limited to no demonstration to use a model to identify stages in life cycles of organisms, and use evidence to support an argument that plants and animals need internal and external structures to live.	Use a model to identify stages in life cycles of organisms, and use evidence to support an argument that plants and animals need internal and external structures to live.	Develop a model that describes patterns in the life cycles of organisms, and use evidence to construct an argument that plants and animals need internal and external structures to live.	Evaluate and/or revise a model that describes patterns in the life cycles of organisms, and use evidence to construct an argument that explains how plant and animal structures need internal and external structures to live.

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Life Science (con't)				
LS2 Ecosystems: Interactions, Energy, and Dynamics	Limited or no demonstration to describe movement of matter through the interactions of the living and non- living components of an ecosystem.	Use a model to describe the movement of matter through the interactions of the living and non-living components of an ecosystem.	Develop a model that describes the movement of matter through the interactions of the living and non-living components of an ecosystem.	Evaluate and/or revise a model that describes the movement of matter through the interactions of the living and non-living components of an ecosystem.
LS3 Heridity: Inheritance nd Variation of Traits	Limited to no demonstration to identify patterns in data that provide evidence that plants and animals inherit traits and that traits can vary within a group of similar organisms.	Identify patterns in data that provide evidence that plants and animals inherit traits and that traits can vary within a group of similar organisms.	Interpret data and use patterns in the evidence to construct an explanation (cause and effect) that plants and animals inherit traits from their parents and that traits can vary within a group of similar organisms due to inheritance and the environment.	Interpret, analyze, and compare data and use patterns in sets of data to make predictions and construct an explanation that plants and animals inherit traits from parents and these traits can vary within a group of similar organisms due to inheritance and the environment.
LS4 Biological Evolution: Unity and Diversity	Limited to no demonstration to identify data from fossils to provide evidence of the effects of environmental changes on the characteristics of organisms that lived long ago, and use the data to support an argument that some organisms survive better than others in a particular habitat.	Identify data from fossils to provide evidence of the effects of environmental changes on the characteristics of organisms that lived long ago, and use the data to support an argument that some organisms survive better than others in a particular habitat.	Analyze and interpret data from fossils to provide evidence of the effects of environmental changes on the characteristics of organisms that lived long ago, and use the data to construct an argument that some organisms survive better than others in a particular habitat.	Interpret, analyze, and compare data from fossils to provide evidence of the effects of environmental changes on the characteristics of organisms that lived long ago, and use the data to evaluate an argument that some organisms survive better than others in a particular habitat.
Earth Science				
ESS1 Earth's Place in the Universe	Limited to no demonstration to use graphical displays of data to describe how movements of the Earth around the Sun result in daily and seasonal patterns in shadows, hours of daylight, and appearance of stars in the night sky.	Use graphical displays of data to describe how movements of the Earth around the Sun result in daily and seasonal patterns in shadows, hours of daylight, and appearance of stars in the night sky.	Develop graphical displays of data to use as evidence to describe how movements of the Earth around the Sun result in daily and seasonal patterns in shadows, hours of daylight, and appearance of stars in the night sky.	Compare and evaluate graphical displays of data to describe how movements of the Earth around the Sun result in daily and seasonal patterns in shadows, hours of daylight, and appearance of stars in the night sky.

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	Level 1	Level 2	Level 3	Level 4
Earth Science (con't)				
ESS2 Earth's Systems	Limited to no demonstration to use a model to describe how systems of geosphere, biosphere, hydrosphere, and/or atmosphere interact and graph the amounts of salt and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.	Use a model to describe how the systems of the geosphere, biosphere, hydrosphere, and/or atmosphere interact and graph the amounts of salt and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.	Develop a model to describe how the systems of the geosphere, biosphere, hydrosphere, and/or atmosphere interact and describe and graph the amounts of salt and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.	Evaluate and/ or revise a model to describe how the systems of the geosphere, biosphere, hydrosphere, and/or atmosphere interact and compare, describe and graph the amounts of salt and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.
ESS3 Earth and Human Activity	Limited to no demonstration to use evidence to support an argument about the merit of a design solution that reduces the impact of a weather-related hazard.	Construct an argument about the merit of a design solution that reduces the impact of a weather-related hazard.	Use evidence to support and construct an argument about the merit of a design solution that reduces the impact of a weather-related hazard.	Use evidence to support and construct and compare multiple arguments to consider the merits of multiple solutions to reduce the impacts of a weather-related hazard.