SCIENCE SCOPE AND SEQUENCE
AY 26-27

CLUSTER	GRADE 1	GRADE 2	GRADE 3	GRADE 4
PHYSICAL SCIENCE				
PHYSICAL SCIENCE	**PS4 WAVES AND THEIR APPLICATION IN TECHNOLOGIES FOR INFORMATION TRANSFER** **PS4.1.1** *Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.* **PS4.1.2** *Make observations to construct an evidence-based account that objects can be seen only when illuminated.* **PS4.1.3** *Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.* **PS4.1.4** *Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.*	**PS1 MATTER AND ITS INTERACTIONS** **PS1.2.1** *Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.* **PS1.2.2** *Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.* **PS1.2.3** *Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.* **PS1.2.4** *Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.*	**PS2 MOTION AND STABILITY: FORCES AND INTERACTION** **PS2.3.1** *Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.* **PS2.3.2** *Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.* **PS2.3.3** *Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.* **PS2.3.4** *Define a simple design problem that can be solved by applying scientific ideas about magnets.*	**PS3 ENERGY** **PS3.4.1** *Use evidence to construct an explanation relating the speed of an object to the energy of that object.* **PS3.4.2** *Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.* **PS3.4.3** *Ask questions and predict outcomes about the changes in energy that occur when objects collide.* **PS3.4.4** *Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.* **PS4 WAVES AND THEIR APPLICATION IN TECHNOLOGIES FOR INFORMATION TRANSFER** **PS4.4.1** *Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.*

CLUSTER	GRADE 1	GRADE 2	GRADE 3	GRADE 4
				PS4.4.2 *Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.* **PS4.4.3** *Generate and compare multiple solutions that use patterns to transfer information.*
LIFE SCIENCE				
LIFE SCIENCE	**LS1 FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES** **LS1.1.1** *Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.* **LS1.1.2** *Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.* **LS3 HEREDITY: INHERITANCE AND VARIATION OF TRAITS** **LS3.1.1** *Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.*	**LS2 ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS** **LS2.2.1** *Plan and conduct an investigation to determine if plants need sunlight and water to grow.* **LS2.2.2** *Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.* **LS4 BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY** **LS4.2.1** *Make observations of plants and animals to compare the diversity of life in different habitats.*	**LS1 FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES** **LS1.3.1** *Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.* **LS2 ECOSYSTEMS: INTERACTIONS, ENERGY, AND DYNAMICS** **LS2.3.1** *Construct an argument that some animals form groups that help members survive.* **LS3 HEREDITY: INHERITANCE AND VARIATION OF TRAITS** **LS3.3.1** *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.*	**LS1 FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES** **LS1.4.1** *Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.* **LS1.4.2** *Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.*

CLUSTER	GRADE 1	GRADE 2	GRADE 3	GRADE 4
			LS3.3.2 *Use evidence to support the explanation that traits can be influenced by the environment.* **LS4 BIOLOGICAL EVOLUTION: UNITY AND DIVERSITY** **LS4.3.1** *Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.* **LS4.3.2** *Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving.* **LS4.3.3** *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.* **LS4.3.4** *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.*	
EARTH AND SPACE SCIENCES				
EARTH AND SPACE SCIENCES	**ESS1 EARTH'S PLACE IN THE UNIVERSE**	**ESS1 EARTH'S PLACE IN THE UNIVERSE**	**ESS2 EARTH'S SYSTEMS** **ESS2.3.1**	**ESS1 EARTH'S PLACE IN THE UNIVERSE**

CLUSTER	GRADE 1	GRADE 2	GRADE 3	GRADE 4
	ESS1.1.1 *Use observations of the sun, moon, and stars to describe patterns that can be predicted.* **ESS1.1.2** *Make observations at different times of year to relate the amount of daylight to the time of year.*	**ESS1.2.1** *Make observations from media to construct an evidence-based account that Earth events can occur quickly or slowly.* **ESS2 EARTH'S SYSTEMS** **ESS2.2.1** *Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.* **ESS2.2.2** *Develop a model to represent the shapes and kinds of land and bodies of water in an area.* **ESS2.2.3** *Obtain information to identify where water is found on Earth and that it can be solid or liquid.*	*Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.* **ESS2.3.2** *Obtain and combine information to describe climates in different regions of the world.* **ESS3 EARTH AND HUMAN ACTIVITY** **ESS3.3.1** *Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.*	**ESS1.4.1** *Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.* **ESS2 EARTH'S SYSTEMS** **ESS2.4.1** *Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.* **ESS2.4.2** *Analyze and interpret data from maps to describe patterns of Earth's features.* **ESS3 EARTH AND HUMAN ACTIVITY** **ESS3.4.1** *Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.* **ESS3.4.2** *Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.*
ENGINEERING AND DESIGN				
ENGINEERING AND DESIGN	**ED1 ENGINEERING DESIGN** **ED1.K-2.1** *Ask questions, make observations, and gather information about a situation people want*		**ED1 ENGINEERING DESIGN** **ED1.3-5.1** *Define a simple design problem reflecting a need or a want that includes specified*	

CLUSTER	GRADE 1	GRADE 2	GRADE 3	GRADE 4
	to change to define a simple problem that can be solved through the development of a new or improved object or tool. **ED1.K-2.2** *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.* **ED1.K-2.3** *Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.*		*criteria for success and constraints on materials, time, or cost.* **ED1.3-5.2** *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.* **ED1.3-5.3** *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.*	