المدرسة الأمريكية الدولية
American International School
kuwait

ELEMENTARY

International Baccalaureate®
Baccalauréat International
Bachillerato Internacional

SCIENCE SCOPE AND SEQUENCE
AY 24-25

	Cluster	1st	2nd	3rd	4th	5th
Physical Science	**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 • PS4.3.4: 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	• PS4.1.1: Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.			• 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.	

		• 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. •			• 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	**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	•	• 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.	• 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	•

		behavior of parents and offspring that help offspring survive.			different types of information through their senses, process the information in their brain, and respond to the information in different ways.	
	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.	• LS2.3.1: Construct an argument that some animals form groups that help members 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.		• 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. • LS3.3.2: Use evidence to support the explanation that traits can be influenced by the environment.		

	LS4 Biological Evolution: Unit and Diversity		• LS4.2.1: Make observations of plants and animals to compare the diversity of life in different habitats	• 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	**ESS1 Earth's Place in the Universe**	• 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.		• 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		• ESS2.2.1: 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.	• ESS2.3.1: 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.	• 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			• ESS3.3.1: Make a claim about the merit of a design solution that reduces the impacts of a	• ESS3.4.1: Obtain and combine information to describe that energy and fuels are derived from	

				weather-related hazard. •	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	**ED1 Engineering Design**	• ED1.K-2.1: 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. • 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.			• ED1.3-5.1: Define a simple design problem reflecting a need or a want that includes specified 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.	