COMMONWEALTH OF THE BAHAMAS

MINISTRY OF EDUCATION

PRIMARY SCIENCE CURRICULUM
SCOPE AND SEQUENCE

GRADES 1-6

DEPARTMENT OF EDUCATION
JUNE 2010

PRIMARY SCIENCE CURRICULUM
SCOPE AND SEQUENCE

STRAND 1: LIFE SCIENCE **GRADES: 1-6**

Fundamental concepts and principles of life science include the study of living organisms, their structure and function, their behaviors and their relationships with the environment.

LIFE

Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Characteristics of Organisms	**Characteristics of Organisms**	**Characteristics of Organisms**	**Characteristics of Organisms**	**Characteristics of Organisms**	**Characteristics of Organisms**
1. A1 Observe human models and Identify body parts. (external only) 1. A2 Observe human models to identify sense organs. 1. A3 Experiment to describe functions of sense organs. 1. A4 Observe models and compare growth development in humans. 1. A5 Experiment with manipulatives to demonstrate habits which support good health. 1. A6 Infer results from poor health habits. 1. A7 Describe the basic needs of living things. (plants/animals) 1. A8 Investigate/explain the uses of plants and animals.	1. A1 Observe and conduct research about animals in the environment. 1. A2 Observe/explain what is a Habitat? 1. A3 Explore selected habitats to observe and examine a variety of animals. 1. A4 Compare body coverings of animals. 1. A5 Observe animal parts to predict how they function/move. 1. A6 Predict and infer what animals need for survival. 1. A7 Compare animal habitats using visuals/field areas.	1. A1 Observe a variety of organisms to determine which are vertebrates. 1. A2 Observe/investigate animals to classify them according to their characteristics. 1. A3 Observe organisms to describe the traits common to vertebrates. 1. A4 Observe a variety of organisms to describe and identify vertebrate vectors. 1. A5 Observe a variety of organisms to compare mammals to birds and reptiles to fish and amphibians. 1. A6 Infer how body parts and body coverings of vertebrates help them survive. 1. A7 Experiment with specimens of animal body coverings to determine their function. 1. A8 Experiment with materials which imitate mouth parts of animals to determine their diet.	1. A1 Compare Vertebrates and Invertebrates 1. A2 Investigate and record traits common to all invertebrates. 1. A3 Classify invertebrates based on body parts and covering. 1. A4 Observe the main traits of insects and spiders. 1. A5 Compare insects and spiders. 1. A6 Compare the life cycles of mosquitoes and cockroaches. 1. A7 Analyze how insects use mimicry and camouflage for survival.	1. A1 Examine traits common to all invertebrates using technology/pictures/ specimens. 1. A2 Observe a variety of invertebrates (models/ visuals) to identify their characteristics. (mollusks, crustaceans and stinging cell animals) 1. A3 Observe organisms (visuals/models) to identify vertebrate and invertebrate vectors. 1. A4 Analyze the impact of vectors on the society and infer ways to eliminate them. 1. A5 Investigate the behaviour of animals and infer their adaptive method.	1. A1 Observe and describe the structure of a cell in organisms (plant/animal). 1. A2 Compare plant and animal cells. 1. A3 Observe plant and animal cell parts and record their functions. 1. A4 Classify four types of fungi by their traits. 1. A5 Observe/investigate a variety of invertebrates and classify them as sponges, echinoderms and worms. 1. A6 Compare the traits of sponges, echinoderms and worms.

STRAND 1: LIFE SCIENCE — GRADES: 1-6

LIFE

Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Structure and Functions in Living Systems	**Structure and Functions in Living Systems**	**Structure and Functions in Living Systems**	**Structure and Functions in Living Systems**	**Structure and Functions in Living Systems**	**Structure and Functions in Living Systems**
1. B1 Classify living and nonliving things. 1. B2 Classify plants and animals according to their traits/ characteristics. 1. B3 Compare traits/ characteristics of plants and animals.	1. B1 Observe skeletal model to identify the basic parts of the human skeleton. 1. B2 Communicate the importance of the skeleton using models/visuals. 1. B3 Compare skeletons of various animals. 1. B4 Observe and record a variety of muscles in the body using visuals/models. 1. B5 Infer and communicate the importance of muscles in the body. 1. B6 Infer how poor health habits affect personal and family health. 1. B7 Predict the basic needs of plants for survival. 1. B8 Observe a live plant to record its parts.	1. B1 Use visuals to observe/ identify the parts of the digestive system. 1. B2 Communicate the function of the digestive system. 1. B3 Experiment to explain how food is broken down as it passes through the digestive system. 1. B4 Infer how proper nutrition is related to good health. 1. B5 Observe/Predict appropriate exercises and food choice to develop a healthy lifestyle. 1. B6 Observe the six main food groups, and explain the nutrients found in each group. 1. B7 Identify health resources, and communicate their function. 1. B8 Observe plants to identify their parts.	1. B1 Observe the parts and explain the function of the respiratory system. 1. B2 Observe the main parts of the nervous system and communicate its importance. 1. B3 Identify the main parts and the importance of the nervous system. 1. B4 Infer risk factors to health and communicate how these risks may be reduced. 1. B5 Analyze safety procedures for natural disasters. 1. B6 Compare seed and non-seed plants. 1. B7 Classify plants with flowers and plants with cones according to their traits. 1. B8 Compare monocots and dicots. 1. B9 Experiment and describe seed germination.	1. B1 Observe models to identify parts of the skeletal system. 1. B2 Research to explain functions of the skeletal system. 1. B3 Predict and communicate the importance of the muscular system. 1. B4 Compare skeletal and muscular systems. 1. B5 Infer how poor eating habits affect health. 1. B6 Experiment to explain the process of photosynthesis. 1. B7 Classify and record indigenous plants of The Bahamas and their uses. 1. B8 Hypothesize/Investigate the medicinal value of plants. 1. B9 Predict ways to conserve plants.	1. B1 Observe parts of the circulatory system and communicate its function. 1. B2 Identify the four chambers of the heart and its function. 1. B3 Communicate the function and importance of the immune system. 1. B4 Infer how negative habits affect the immune system. 1. B5 Predict risk factors to health, and communicate how these risks may be reduced. 1. B6 Use specimen of flowers to observe and label the parts and explain their function. 1. B7 Research to communicate the life cycle of a flower. 1. B8 Compare the growth patterns of plants.

STRAND 1: LIFE SCIENCE — GRADES: 1-6

LIFE

Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Structure and Functions in Living Systems	**Structure and Functions in Living Systems**	**Structure and Functions in Living Systems**	**Structure and Functions in Living Systems**	**Structure and Functions in Living Systems**	**Structure and Functions in Living Systems**
	1. B9 Classify and compare a variety of fruit seeds.	1. B9 Examine plant parts and describe their functions. 1. B10 Experiment with seeds to communicate various growth pattern.	1. B10 Observe and describe indigenous flowering plants in The Bahamas.		1. B9 Observe a variety of plants to conclude their adaptive methods for survival. 1. B10 Experiment to discover the needs of plants for growth.
Organisms and the Environment	**Organisms and the Environment**	**Organisms and the Environment**	**Organisms and the Environment**	**Organisms and the Environment**	**Organisms and the Environment**
1. C1 Observe and infer where plants/animals live. 1. C2 Compare homes of animals. 1. C3 Research and predict ways in which plants and animals help each other. 1. C4 Observe environment to infer what are vectors, where they live, and their effect on humans.	1. C1 Observe pictures/ models to identify plant and animal habitats. Infer how these habitats help the animals and plants. 1. C2 Predict how habitats can be harmed and protected. 1. C3 Research to observe what are vectors. 1. C4 Predict where specific vectors live. 1. C5 Infer how vectors can be eliminated.	1. C1 Identify living and nonliving things in a garden (ecosystem). 1. C2 Observe a variety of gardens (pictures/real) to communicate and compare types of gardens. (e.g. vegetable/ flower) 1. C3 Experiment with seeds to create several containerized gardens. 1. C4 Use ruler/tape to measure growth of seedlings/ record growth development.	1. C1 Observe/Investigate food chains and food webs in ecosystems and communicate their function. 1. C2 Compare the relationship among producers, consumers and decomposers. 1. C3 Observe/Research plants and animals that live in the pine forests, coral reefs and mangroves. 1. C4 Hypothesize the effect on organisms when a pine forest is damaged. 1. C5 Observe/Investigate organisms in coral reefs and communicate its importance.	1. C1 Infer why plants, decomposers and animals (organisms) are found in ecosystems. 1. C2 Compare food chains and food webs. 1. C3 Communicate the relationship of predator, prey and scavenger. 1. C4 Predict/Research what are resources. 1. C5 Analyze why water, energy and electricity are resources. 1. C6 Infer ways to use resources wisely.	1. C1 Research to define “biomes”. 1. C2 Infer/Investigate why plants/animals live in certain biomes. 1. C3 Compare weather factors and organisms in several biomes. 1. C4 Predict the results of natural disasters on the environment. 1. C5 Analyze the effects of human activities on the environment.

STRAND 1: LIFE SCIENCE						GRADES: 1-6
	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
	Organisms and the Environment	**Organisms and the Environment**	**Organisms and the Environment**	**Organisms and the Environment**	**Organisms and the Environment**	**Organisms and the Environment**
L I F E			1. C5 Observe rocky and sandy shores to identify living and nonliving parts. 1. C6 Observe a variety of ecosystems to identify home of conch, grouper, lobster and hutia. 1. C7 Infer what threats affect endangered animals (e.g. grouper). 1. C8 Communicate the laws that protect endangered animals (e.g. grouper).	1. C6 Observe and investigate the four types of mangroves. 1. C7 Communicate the importance of mangroves to our Islands.	1. C7 Predict the importance of preserving National parks.	1. C6 Classify organisms (plants and animals) as endangered or extinct. 1. C7 Infer ways to avoid plants/animals from becoming endangered.

PRIMARY SCIENCE CURRICULUM
SCOPE AND SEQUENCE

STRAND 2: EARTH AND SPACE SCIENCE **GRADES: 1-6**

Fundamental concepts and principles of Earth and space science are related to the origin, Structure and physical phenomena of the Earth and the Universe.

EARTH AND SPACE

Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Properties and Structure of Earth's Systems	**Properties and Structure of Earth's Systems**	**Properties and Structure of Earth's Systems**	**Properties and Structure of Earth's Systems**	**Properties and Structure of Earth's Systems**	**Properties and Structure of Earth's Systems**
2. A1 Infer what the earth is made up of (e.g. land water and air). 2. A2 Observe/Explain land forms found on earth. (e.g. hills, mountains, valleys) 2. A3 Research and observe several bodies of water on Earth (e.g. ponds, lakes, oceans). 2. A4 Investigate appropriate ways to care for the earth. 2. A5 Experiment to explain how hills are formed.	2. A1 Observe rocks and minerals to identify their traits. 2. A2 Compare a variety of rocks. 2. A3 Compare rocks and minerals. 2. A4 Experiment to communicate some uses of rocks and minerals.	2. A1 Investigate to identify Earth's resources 2. A2 Observe Earth's natural resources and their uses. 2. A3 Infer the importance of natural resources to the survival of people. 2. A4 Experiment to show the various types of pollution. 2. A5 Analyze the sources of air, water, and land pollution. 2. A6 Infer ways to prevent pollution. 2. A7 Investigate the role of students as environmental stewards. 2. A8 Predict ways to care for Earth's resources.	2. A1 Identify and describe the three layers of the earth. 2. A2 Experiment to describe the effects of weathering and erosion on earth. 2. A3 Investigate to identify Ocean resources. 2. A4 Investigate the movement of the ocean water and how it is affected by the moon. 2. A5 Infer what is ocean pollution, examine its effect on organisms in the ocean.	2. A1 Predict resources found in the ocean. 2. A2 Predict which pollutants affect the ocean and how pollution affects marine life. 2. A3 Infer the importance of conserving the ocean. 2. A4 Infer what are fossils and compare types of fossils. 2. A5 Analyze the process of fossil formation. 2. A6 Hypothesize how scientists know which fossils are the oldest.	2. A1 Identify and compare the layers of the Earth. 2. A2 Infer what natural resources are and where they are located. 2. A3 Observe the environment to compare weathering and erosion. 2. A4 Observe the environment to distinguish between air, land and water pollution. 2. A5 Predict ways to prevent pollution. 2. A6 Classify resources as renewable or nonrenewable.

STRAND 2: EARTH AND SPACE SCIENCE GRADES: 1-6

EARTH AND SPACE

Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Changes in the Earth and Sky	**Changes in the Earth and Sky**	**Changes in the Earth and Sky**	**Changes in the Earth and Sky**	**Changes in the Earth and Sky**	**Changes in the Earth and Sky**
2. B1 Explain how seasons affect weather. 2. B2 Predict and record weather conditions using basic weather instruments. 2. B3 Investigate career and service opportunities related to weather.	2. B1 Predict weather conditions by observing the sky. 2. B2 Observe the immediate environment and communicate the kinds of weather experienced in The Bahamas. 2. B3 Observe weather instruments and their uses. 2. B4 Hypothesize the different ways in which weather affects people.	2. B1 Experiment to explain the water cycle and its relationship to weather and climate. 2. B2 Interpret diagrams to explain the changes that occur at each phase of the water cycle. 2. B3 Experiment to describe how clouds are formed. 2. B4 Research and classify clouds according to their traits. 2. B5 Analyze weather conditions associated with different types of clouds.	2. B1 Predict "What is meteorology?" 2. B2 Observe layers in the earth's atmosphere. 2. B3 Experiment to show the properties of air. 2. B4 Predict and communicate the elements which contribute to weather. 2. B5 Compare weather and climate. 2. B6 Experiment with weather instruments to determine their use. (thermometer wind vane) 2. B7 Analyze the sun's effect on Earth.	2. B1 Research to define "atmosphere". 2. B2 Analyze layers of the atmosphere. 2. B3 Analyze conditions that contribute to weather/ climate change. 2. B4 Infer how changes in weather affect people. 2. B5 Experiment with weather instruments to describe their function. (rain gauge, wind sock, thermometer)	2. B1 Observe/Identify tools which measure weather conditions. 2. B2 Observe and describe factors that make up weather. 2. B3 Compare traits/ characteristics of storms/hurricanes. 2. B4 Measure weather conditions using a barometer, a hydrometer and an anemometer. 2. B5 Interpret and record weather data. 2. B6 Compare weather and climate.

STRAND 2: EARTH AND SPACE SCIENCE — GRADES: 1-6

EARTH AND SPACE

Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Universe and the Solar System	**Universe and the Solar System**	**Universe and the Solar System**	**Universe and the Solar System**	**Universe and the Solar System**	**Universe and the Solar System**
2. C1 Observe/Identify objects in the solar system. 2. C2 Distinguish between day and night.	2. C1 Describe the differences between the moon and Earth. 2. C2 Identify the source of moonlight. 2. C3 Analyze changes in the moon. 2. C4 Infer what is a constellation. 2. C5 Identify and compare common constellations.	2. C1 Experiment to explain the sun's position in relation to the Earth. 2. C2 Experiment to describe the motion of the Earth around the sun. 2. C3 Demonstrate to explain the terms orbit, revolve and rotate. 2. C4 Predict what causes seasons. 2. C5 Investigate to explain seasonal changes.	2. C1 Research to communicate the order of the eight planets. 2. C2 Research to classify the planets as inner and outer planets. 2. C3 Compare the inner planets and the outer planets. 2. C4 Explain a scale model of the distances between planets.	2. C1 Observe and communicate the make up of the Solar System. 2. C2 Investigate to compare planets. 2. C3 Compare rotation and revolution. 2. C4 Communicate how the sun benefits the earth and other planets. 2. C5 Compare and analyze objects in space. – asteroids, comets, meteors and meteoroids.	2. C1 Compare the atmosphere of the planets. 2. C2 Hypothesize which planets are susceptible to life. 2. C3 Observe equipment used to study objects in space. 2. C4 Analyze distances between planets. 2. C5 Analyze safety precautions for astronauts in space.

PRIMARY SCIENCE CURRICULUM
SCOPE AND SEQUENCE

STRAND 3: PHYSICAL SCIENCE **GRADES: 1-6**

Fundamental concepts and principles of physical science include the study and analysis of the nature and properties of living and non-living matter and energy.

	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
PHYSICAL	**Properties and Changes in Matter**	**Properties and Changes in Matter**	**Properties and Changes in Matter**	**Properties and Changes in Matter**	**Properties and Changes in Matter**	**Properties and Changes in Matter**
	3. A1 Classify objects according to their physical properties such as size, color and shape. 3. A2 Experiment to identify how matter changes state: size, color and shape. 3. A3 Compare physical changes in matter.	3. A1 Analyze forms and properties of matter. 3. A2 Observe tools used to measure matter. 3. A3 Experiment to determine what is volume. 3. A4 Experiment with a variety of solids to communicate which is lighter or heavier. 3. A5 Compare the weights of solids using a balance/scale.	3. A1 Experiment with materials to identify matter as solids, liquids and gases. 3. A2 Compare characteristics of solids, liquids and gases to classify them. 3. A3 Investigate how matter changes from one form to another. 3. A4 Examine objects to communicate the physical properties of matter. 3. A5 Compare forms and properties of matter using measuring utensils. 3. A6 Experiment to discover the length volume and mass of objects using metric units.	3. A1 Investigate, using a variety of materials to identify properties of matter. 3. A2 Investigate physical changes in matter. 3. A3 Compare physical properties and physical changes in matter. 3. A4 Use a balance to measure and record the mass of objects. 3. A5 Experiment with measuring instruments (graduates or measuring cups) to measure the volume of matter (varied materials).	3. A1 Classify matter as a substance or a mixture. 3. A2 Compare substances and mixtures. 3. A3 Experiment to explain how mixtures can be separated. 3. A4 Experiment to explain what is a solution. 3. A5 Compare solutes and solvent. 3. A6 Experiment to separate solutes. 3. A7 Compare mixtures and solutions.	3. A1 Analyze physical properties in matter. 3. A2 Experiment to explain physical changes in materials. 3. A3 Experiment and record chemical changes in substances. 3. A4 Measure and graph physical properties of matter. 3. A5 Experiment to observe chemical changes in matter. 3. A6 Compare physical and chemical changes in matter.

STRAND 3: PHYSICAL SCIENCE GRADES: 1-6

PHYSICAL

Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Forces and Energy	**Forces and Energy**	**Forces and Energy**	**Forces and Energy**	**Forces and Energy**	**Forces and Energy**
3. B1 Compare pushes and pulls. 3. B2 Experiment to identify poles of a magnet. 3. B3 Experiment to find out which objects (materials) a magnet will attract/repel.	3. B1 Infer why the sun is the greatest source of energy on Earth. 3. B2 Identify other sources of light besides the sun. 3. B3 Investigate traits of the sun and communicate its importance. 3. B4 Infer, why water is a source of energy/ explain its use. 3. B5 Experiment to explain the wind as a source of energy. 3. B6 Predict what would happen if there was no water on Earth. 3. B7 Hypothesize ways in which we can conserve water. 3. B8 Experiment with magnets and explain what they do. 3. B9 Classify materials according to their magnetic force.	3. B1 Experiment to discover the sources of energy. 3. B2 Experiment to define fuels. 3. B3 Experiment to communicate how fossil fuels are formed. 3. B4 Analyze the uses of energy from fossil fuels. 3. B5 Predict which materials will transfer electricity. 3. B6 Experiment with magnets to observe the properties of varied materials. 3. B7 Investigate the term conservation and explain its importance. 3. B8 Analyze and share ways to conserve energy.	3. B1 Experiment with materials to conclude what is force, work and motion. 3. B2 Measure and record pulls using a spring scale. 3. B3 Use charts to interpret data recorded on pushes and pulls. 3. B4 Analyze work and infer how (work) it is related to force. 3. B5 Experiment to explain what a simple machine is. 3. B6 Identify objects as wedges or inclined planes. 3. B7 Communicate what is energy conservation.	3. B1 Investigate Energy and compare various forms of Energy. 3. B2 Experiment to explain what is work. 3. B3 Compare potential and kinetic energy. 3. B4 Infer how heat affects temperature. 3. B5 Investigate how energy changes. 3. B6 Analyze the impact of technology on forms of energy. 3. B7 Investigate compound/ complex machines that use the lever and screw to help us do work 3. B8 Communicate the importance of conserving energy.	3. B1 Experiment with magnets to Abate the poles and the magnetic field. 3. B2 Experiment to record the relationships between motion, speed and direction. 3. B3 Experiment to show how a simple circuit works. 3. B4 Observe objects and materials to discover the effects of friction on them. 3. B5 Experiment to identify pulleys, wheels and axels. 3. B6 Analyze how forces affect everyday living. 3. B7 Experiment to conclude how pulleys, wheels and axels make work easier.