THE DEPARTMENT OF EDUCATION

GENERAL SCIENCE PACING GUIDE

2024 - 2025

GENERAL SCIENCE PACING GUIDE

GRADE 7

	UNIT	TOPIC	OBJECTIVES	LESSONS
TERM ONE		Introduction to Science	Definition of Science and Technology. Branches of Science. Jobs/ Careers related to science. Lab Safety. Lab apparatus - Identification and uses. Microscope - Parts and uses. S.I. Measurements. Length, Mass, Time, Volume, Temp Units and Apparatus. List and Describe seven characteristics of living things.	6 lessons
	Living Things	*Cells* *Gen. Sci. Curri. Pg. 41 -43*	Definition of cell. Describe observed features of a cell. Relate cell organelles to their functions. Distinguish between a typical plant cell and a typical animal cell. Make models of cells to show main features. Draw conclusions on the function of specialized cells based on the features of the cells. Explain how cells are organized to form tissues, organs, systems with examples. Demonstrate the relationships between cells, tissues, organs and systems. Classify samples as cells, tissues, organs or systems.	7 lessons
	Living Things	*Classification* *Gen. Sci. Curri. Pg. 41 -43*	Classify living things into six kingdoms (Monera, Fungi, virus, Protista, Plantae and Animalia) based on characteristics. Classify Invertebrates Arthropods, Cnidarians/Coelenterates, Echinoderms, Protozoa, Mollusca, Protozoa, Sponges and Worms. Use characteristics of the seven invertebrate groups to classify local organisms. Observe features of the four classes of arthropods. Demonstrate the relationship between phylum Arthropoda and its classes.	8 lessons
	Matter	*Changes in matter* *Gen. Sci. Curri. Pg. 41 -43*	Definition of Matter and Atoms. Draw and label a diagram of a typical atom showing their charges. States of Matter. Solid, Liquid and Gas. Demonstrate that matter has mass. State the kinetic theory of matter Show molecular arrangements. Relate the molecular arrangement of a substance to its state of matter. Make models to represent molecular arrangements in the three states of matter.	5 lessons

	Matter	*Changes of State/Matter* *Gen. Sci. Curri. Pg. 50 - 52*	Make a model diagram showing changes of states of matter and the processes involves in these changes. Changes of State: Evaporation, condensation, Freezing, Melting and sublimation. Physical Vs. Chemical Properties. Plan and Conduct an Investigation to show the properties of matter. Observe physical changes. Demonstrate physical changes. Observe and identify various changes in the states of water. Demonstrate Chemical changes. Observe chemical changes. Characterize any change as chemical or physical.	

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TERMS TWO & THREE	FORCES & ENERGY	Energy *Gen. Sci. Curri. Pg. 55 - 56*	Define energy, forces and work. Introduction to forms of Energy - Light, heat, sound, Magnetic, Solar, Nuclear, Mechanical, Chemical. Identify the sun as the main source of energy. Types of Energy - Potential and Kinetic Energy. Differentiate between kinetic and potential energy. Use a simple pendulum and/or elastic band to demonstrate potential and kinetic energy. Use the SI units for energy. Conduct an experiment to show energy transformation. Use transformation diagrams to demonstrate the law of conservation of energy. Demonstrate that energy is needed for work to be done. Calculate scientific work using the equation W = Fd. State the SI unit of work. Differentiate between renewable and non-renewable energy. Identify renewable energy sources that may be used in The Bahamas. Research new alternatives to reduce the use of non renewable energy sources.	6 lessons
	ECOLOGY	*Feeding Relationships* *Gen. Sci. Curri. Pg. 57 - 62*	Definitions: Ecology, Ecosystem, Population, habitat, producer, consumer, herbivore, carnivore, omnivore, decomposer, scavenger. Use feeding habits to classify organisms. Draw diagrams of food chains. Make models of food chains. Make a model of a simple food web. Identify the relationship between a food web and a food chain. Make an energy pyramid for a given food chain. Identify the relationship between organisms at successive trophic levels. Pyramid of Numbers. Predator - Prey relationships.	10 lessons
	LIVING THINGS	*Queen Conch* *Gen. Sci. Curri. Pg. 46- 49*	Observe the external features of the Queen Conch. Measure length width and weight of the conch. Observe differences in genders of Queen Conch. Describe life history of the Queen Conch. Examine the economic importance of the Queen Conch	8 lessons
	FORCES & ENERGY	*FORCES - Magnetism*	Introduction to the Five types of forces - Air pressure, Water Pressure, Gravity, Friction and Magnetism.	5 lessons

		Gen. Sci. *Curri.* *Pg. 53 - 54*	Determines the types of materials that are magnetic or non-magnetic. List properties of magnets. Identify kinds of magnets as bar, horseshoe, ring, lodestone (natural). Classify magnetic and non-magnetic materials. Use bar magnets to demonstrate: attraction, repulsion, magnetic field, North and South Pole alignment. Explain the importance of the North and South Poles on magnets. Observe an electromagnet. Differentiate between electromagnet and permanent magnets. Draw lines to show force fields of magnets and define force field	
	Ecology	*Water* *Gen. Sci.* *Curri.* *Pg. 50 - 52*	Water: List uses and Properties of water. Formula and Test. Identify main sources of water as rain, surface or underground. Use a thermometer to measure the temp of boiling water. Observe changes in water as it changes state. Show filtration of water. Observe physical properties of water. Differentiate between hard and soft water. Use the formation of suds to classify water. Draw and label the Water Cycle. Describe stages in the water cycle: evaporation, condensation and precipitation. State the effects of deforestation on the Water Cycle.	6 lessons
	NUTRITION	*Classification of Foods* *Gen. Sci.* *Curri.* *Pg. 66- 74*	Nutrition: Define Food and Nutrients. Observe the signs of severe malnutrition and define the term nutrition and malnutrition List 4 basic food groups. List six essential food nutrients. Classify foods as starch, fat, simple sugars or fibre. Classify the three food nutrients that must be digested - Carbohydrates, proteins and fats. State the importance of minerals, water and vitamin in the diet Deficiency Diseases - Cause, symptoms and Treatment. List deficiency diseases. List diseases related to poor nutrition (diabetes, hypertension, elevated cholesterol). Define the term Balanced Diet. Food Tests: fats Carbohydrates Proteins Food Pyramids/Drums. Healthy Diets. Body Mass Indices.	8 lessons

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	UNIT	TOPIC	OBJECTIVES	LESSONS
TERM ONE	LIVING THINGS	CRAB *Gen. Sci. Curri. Pg. 80- 84*	Observe the characteristic markings of the crab. Identify organisms belonging to the crab family. Observe diagrams of the life history of the crab. Observe differences in gender of the Land Crab. Design a pen for land crab. Use features of the crab to determine if it's a juvenile. Make a model of a food web including the crab. State the relationship between the rainy season and spawning of crabs.	10 lessons
	LIVING THINGS	*Grouper* *Gen. Sci. Curri. Pg. 85- 90*	Observe characteristic markings of the Nassau Grouper. Observe diagrams showing the life history of the Nassau Grouper. Make a food chain including the grouper. Describe the effects of climate change on reefs and by extension grouper populations. Explain the benefits of a closed season for grouper. Explain the benefits of size restrictions for organisms	
	MATTER	*Periodic Table* *Gen. Sci. Curri. Pg. 91- 93*	Define an element. List names of the first twenty elements with their symbols. Classify elements as metals and non-metals. Make a diagram to show the electronic configuration of an atom. Classify elements into various groups on the periodic table. Observe trends among elements in a group on the periodic table. Classify elements into periods on the Periodic Table. Observe trends of elements in the same period on the periodic table. Identify the relationship between atomic structure and the position of the element in the periodic table. Define a compound and list common compounds. Give chemical names and formulae for these common compounds.	6 lessons
	Matter	*Mixtures and Solutions* *Gen. Sci. Curri.*	Define a mixture and list common mixtures aqueous, solubility solute and solvent solutions, colloids and suspensions. Determine the solubility of a substance.	7 lessons

		Pg. 95-	State how factors such as temperature and concentration can affect the solubility of a solute. Classify solutions as concentrated, dilute saturated and super saturated.	
		Separation of Mixtures *Gen. Sci. Curri. Pg. 66- 74*	Describe these simple processes to separate mixtures : evaporation, chromatography distillation magnetism. Draw and label simple diagrams to show the apparatus and materials used in the above. Observe sublimation of iodine crystals. Define diffusion describe simple experiment to investigate process.	6 lessons

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	UNIT	TOPIC	OBJECTIVES	LESSONS
TERMS TWO & THREE	ENERGY AND FORCES	*Forces* *Gen. Sci. Curri. Pg. 102 -104*	Recall SI units for mass. Demonstrate forces as push or pull. Observe and identify forces as they affect motion of objects. Newton's three laws of motion. Make an instrument that measures force. Use apparatus to demonstrate pressure.	6 lessons
	Energy and Forces	*Simple Machines* *Gen. Sci. Curri. Pg. 105 - 106*	Describe the role as a machine. State the function of a simple machine. Identify the six simple machines with examples. Levers Pulleys, Inclined Plane, Screw, Wheel and Axle and Wedge. Distinguish between the three classes of levers. Observe differences between the three classes of levers. Classify examples of levers from given photographs/ diagrams. Identify the fulcrum/pivot load and effort on levers and pulleys. Identify moveable pulleys fixed pulleys and a block and tackle and give examples of how these pulleys are used	8 lessons
	ECOLOGY	*Endangered Species* *Gen. Sci. Curri. Pg. 109 - 112*	Define Community and Biodiversity. Define Biodiversity. Coral Reefs Identify local animal and plant endangered species. Make a presentation on two local endangered species. Name five endangered species e.g. Bahama Parrot Flamingo Iguana, Green Turtle, Hawksbill Turtle Loggerhead Turtle, whit Crown Pigeon. State ways in which humans have caused species to become endangered or extinct.	5 lessons
	Ecology	*Soil* *Gen. Sci. Curri. Pg. 125- 131*	Describe the formation of soil particles by weathering of the parent or bedrock. Erosion and Decomposition. Describe an experiment to investigate the components of soil. Types of soil - Loam Clay Silt Sandy. Uses and components. Use sieves to separate different size soil particles. Classify soils based on particle size. Compare drainage in different soils. Compare porosity of soil with the rate of drainage. Compare pH of soils. Demonstrate sedimentation. Describe the importance of soil as a habitat for various organisms.	8 lessons

			Distinguish between artificial and natural fertilizers. Explain why artificial and natural fertilizers are added to soil.	
	Ecology	*Air & Oxygen* *Gen. Sci. Curri.* *Pg. 120- 124*	List properties of air. Describe experiments to show that air is real air exerts pressure air has weight. State the importance of the gases found in air. Components & percentages. Use apparatus and materials for making and testing for Oxygen. Observe physical properties of oxygen. Observe chemical properties of oxygen. Relate common uses for oxygen to its properties. Classify substances as combustible or non-combustible. Classify substances as oxides. Explain the importance of the ozone layer.	7 lessons
	Ecology	*Carbon* *Gen. Sci. Curri.* *Pg. 113 - 119*	Explain differences between a blue and yellow flame. Observe soot. Graphite and diamond. Carbon Cycle. The importance of bacteria in the carbon cycle. Test for carbon dioxide in air. Make model of the carbon cycle. Relationship between emission of carbon dioxide and global warming. Physical properties of carbon dioxide. Observe chemical properties of carbon dioxide. Common uses of carbon dioxide.	10 lessons
	Digestive System	*Parts of the digestive System & Digestive Process* *Gen. Sci. Curri* *Pg 132 - 135*	Identify different parts of the digestive system. Define the term digestion. Explain what happens to food in the alimentary canal mouth stomach small intestines and large intestines. State the process of peristalsis. State where digestion begins and ends for these nutrients: fats proteins and carbohydrates. Explain how digestive enzymes affect the rate of chemical digestion. Name the enzymes present in the digestive juices found in the stomach and small intestines and the class of nutrients that they act on. Explain the relationship between the structures of the small intestines (villi) which aids absorption. Explain the functions of the liver and pancreas. List the end products of the chemical digestion of fats proteins and carbohydrates.	10 lessons

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	UNIT	TOPIC	OBJECTIVES	LESSONS
TERM ONE	Living Things	Plant Classification Gen. Sci Curri Pg 141- 147	Classify the phyla of the Plant Kingdom: algae Mosses and Liverworts Ferns, Gymnosperms and Angiosperms. Identify flowering plants with examples: trees, shrubs and herbs. Draw and label the main structures of a flowering plant. Describe functions of root, stem trunk leaf and flower. Review parts of flowering plants. Monocots and Dicots. Parts of a seed. Germination and condition required. Give functions of petal sepal stigma style ovary ovule anther pollen. Differentiate between pistil and stamen. Describe pollination. Define fertilization. Cross and Self pollination. Wind and Insect pollination. Describe the function of the hilum, testa, cotyledon, plumule, radical. Seed vs. spore.	8 lessons
	Matter	*Acidity Acids and Bases* *General Sci. Curri Pg 153 -155*	Describe properties of acids and bases/ alkali. Identify common acids bases/alkali and their uses. Differentiate between very weak acids/ base, weak acids/ base and very strong acids/ base. Write the chemical, symbolic name for common acids and bases. Explain the pH scale giving number for strong acids, strong bases and neutral substances. Describe laboratory safety measures when using heat and toxic chemicals.	7 lessons
	Forces and Energy	*Heat* *Gen. Sci Curri Pg 156 -*	Recall heat as a form of energy. Describe temperature in terms of hot and cold. Identify the thermometer as the instrument used to measure temperature. Name two temperature scales °C °F. State the value of the freezing and boiling points of pure water on both scales. Describe the three methods of heat transfer (conduction, radiation and convection). Draw and label diagrams to show the effect of heat on solid, liquids and gases. Distinguish between conductors and insulators of heat. Explain expansion, decomposition and change in state when heating solids liquids and gases. Name three conductors and insulators with examples from everyday use.	8 lessons

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	UNIT	TOPIC	OBJECTIVES	LESSONS
TERM 3 TWO & THREE	Living Things	Spiny Lobster *Gen. Sci . Curri* *Pg 147 - 151*	Use external features to identify the spiny Lobster. Measure various body parts of the lobster. Observe the diagrams of the life history of the spiny Lobster. Observe differences in gender. Use features to determine whether it is a juvenile. Habitat of the Lobster. Make a model of a food web including the spiny lobster. State the relationship between the closed season and the spawning lobster.	2 lessons
	Forces and Energy	*Light* *Gen. Sci . Curri* *Pg 160 -163*	Describe a wave. Label the parts of a transverse wave (crest, trough amplitude, wavelength) classify energy based on its wavelength. Observe components of white light. Differentiate between luminous and non-luminous objects. Describe an investigation to show that light travels in a straight line. Observe formation of shadows. Compare transparent, translucent and opaque materials in terms of what happens when light strikes them. Make a model of a pin hole camera. Use apparatus to demonstrate reflection of light State that light is reflected. State that light is refracted as it passes from one medium into another. Distinguish between three types of mirrors (plane convex and concave mirrors) and the images that are produced/reflected by them. State that lenses are curved pieces of glass which refracts light rays. Describe how prisms and water droplets disperse light to form a spectrum or rainbow.	6 lessons
	Forces and Energy	*Electricity* *Gen. Sci Curri* *Pg 164 - 166*	State the difference between static and current electricity. Classify materials as good or bad conductors of electricity. Describe static electricity as stationary positive and negative charges. State the law of electric charges.	8 lessons

			Describe current electricity as a flow of electrons through a conductor. Differentiate between an electrical conductor and an electrical insulator. Identify 3 basic parts of an electric circuit. Identify symbols for the components of a simple circuit. Describe the function of the switch. Explain how fuses and circuit breakers are used to prevent circuit overload. Identify the volt as the SI unit of current and the ammeter as the instrument used to measure current. Distinguish between series and parallel circuits. Explain electrical safety measures and state conservation actions.	
	Energy and Forces	*Sound* *Gen. Sci Curri* *Pg 107 - 108*	Identify vibration of matter as the cause of all sound. Describe three characteristics of sound (pitch loudness, quality) Explain how the variables of length and thickness affect the pitch of sound. State that sound wave needs a media in which to travel. Compare the speed of sound in solids, liquids and gases. Explain that echoes are produce when sound waves are reflected from a solid surface. Compare the speed of light with that of sound.	4 lessons
	Ecology	*Pollution* *Gen. Sci. Curri.* *Pg174 - 179*	Define pollution and name common air, land and water pollutants. Describe the harmful effects of pollution on coral reefs. Compare biodegradable and non-biodegradable materials.	4 lessons
	Human Reproduction	*Puberty, reproductive systems Pregnancy etc* *Pg. 180 -187*	Describe signs of puberty. Identify organs of the Male and female reproductive system. List functions of the male and female reproductive organs. Describe human fertilization. Explain the terms contraception and contraceptive. Explain methods of contraception. List common STIs and describe their symptoms and treatments	10 lessons
	Technology	*Technology* *Pg 188 - 191*	Relationship between science and technology	4 lessons
	Food and Technology	*Microbes & Food Preservation* *Gen. Sci Curri* *Pg 76 -77*	Microbiology harmful effects of micro organisms. How microbes are classified. Observe yeast cells under microscope. Observe fungi Food preservation	7 lessons