SCIENCE DEPARTMENT

SCOPE AND SEQUENCE

2012 -2013

INTRODUCTION

The Grades 7 and 8 scope and sequence are adapted from the Reform of Secondary Education (R.O.S.E.) National Curriculum Guide.

It is geared specifically to meet the needs of our students while preparing them for the CSEC syllabus which begins in Grade 9.

Scientific skills and attitude are developed and emphasized as these are applicable to everyday situations, and will also help the students in all other subject area.

INTEGRATED SCIENCE

GRADE 7

THEME 1:-EXPLORING THE ENVIRONMENT		
UNIT 1 **INTRODUCTION TO SCIENCE**		
SUB-UNITS/TOPICS	**OBJECTIVES** **Students should be able to:**	**NUMBER OF TEACHING SESSIONS**
1.1 Science in Everyday Life	1. Identify how science is involved in given situations at home, school, and community.	1
	2. Give examples of how science and technology are related in everyday life.	1
	3. Explain their understanding of science, technology, how science and technology are related.	1
	4. Make inferences about the nature of science.	1
1.2 Working Like a Scientist	1. Introduction to drawing skills and Laboratory Equipment	2
	2. Describe the work of a named Jamaican scientist.	1
	3. Identify the stages in the scientific investigation	1
	4. Carry out a given activity in a safe, clean, tidy and systematic way	2
	5. Write a report of a lab investigation	2
1.3 Safety Precautions In Exploring the Environment	1. Identify specific situations in the home and classroom which may be potentially dangerous.	½
	2. Describe ways in which potentially dangerous situations may be corrected.	1

	3. Formulate at least five safety rules for working conditions at home, community and school.	1
	4. Suggest consequences that may result from not following such rules.	½
1.4 Using Our Senses To Explore The Environment	1. Name and locate the sense organs in humans and other animals.	½
	2. Describe ways in which the sense organs help the animal to be aware of its environment	1
	3. Perform investigations on the sense organs in which at least one sense organ is suppressed.	1
1.5 Using Instruments and Equipment to Extend The Use Of The Senses	1. List quantities that are measured and their associated units	1
	2. Name some instruments that are used to extend the range of the senses, for measuring, magnifying amplifying, and detecting object.	1/2
	3. Conduct experiments to explore the limitations of the senses.	1/2
	4. Use scientific instruments to measure length, volume, mass and time.	7
	5. Use magnify/ amplifying and detecting instrument.	1
NOTES:		

THEME 2:-INVESTIGATING MATTER		
UNIT 2 **GROUPING THINGS**		
SUB-UNITS/TOPICS	**OBJECTIVES** **Students should be able to:**	**NUMBER OF TEACHING SESSIONS**
2.1 Why Things Are Grouped	1. Give reasons why it is useful to group things.	1
	2. Observe objects and classify them in a number of different ways giving reasons for each grouping.	
	3. Record the criterion used for a given grouping.	
2.2 Grouping things into Living and Non-Living	1. Observe living things and list their characteristics.	2
	2. Classify things as living or non- living and give reasons.	1
	3. Identify ways for caring for living or non- living in the school environment.	½
	4. List some examples of plant parts moving in response to external stimulus.	½
2.3 Grouping Living Things into Plants and Animals	1. Classify a group of living things as plant and animals, and give reasons	1
	2. Observe plants and animals and describe the main differences between them.	1
2.4 Grouping Plants	1. Classify plants into those that produce flowers and those that do not.	½

	2. Identify and list a variety of plants that bear flowers and fruits.	
	3. Classify flowering plants into monocotyledons and dicotyledons.	1
2.5 Grouping Animals	1. Classifying animals into vertebrates and invertebrates.	1/2
	2. Identify and describe the five sub-groups of vertebrates.	1 ½
	3. Identify and describe all the sub-groups of invertebrates.	2
2.6 Grouping Non-Living into Solids, Liquids and Gases	1. Describe the characteristics of solids, liquids and gases in terms of particle spacing, shape and volume and give examples.	2
	2. Classify living and non-living things (at room temperature) as solids, liquids and gases.	½
	3. Carry out demonstrations of changes of state.	1
	4. Observe and identify the changes in state of various substances	1
	5. Describe the processes involved in the water cycle	1
	6. Draw diagram to illustrate the water cycle.	Home work

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THEME 3:-LIVING SYSTEMS		
UNIT 3 **LIVING THINGS AND HOW THEY REPRODUCE**		
SUB-UNITS/TOPICS	**OBJECTIVES** **Students should be able to:**	**NUMBER OF TEACHING SESSIONS**
3.1 Gross Structure and Function of Flowering Plants	1. Identify the root, stem, leaf and flowers as the main parts of a flowering plant.	½
	2. State a main function for each part of the following plant.	1
	3. Draw and label a simple diagram of a flowering plant	½
	4. Suggest ways in which plants are important to the environment	1
3.2 Structure and Function of Floral parts	1. Name the parts of a flower	½
	2. Describe the function of each part of a flower	1
	3. Draw and label a diagram of a flower	½
3.3 Sexual Reproduction in Flowering Plants	1. Name the reproductive organs of a flowering plant and the function of each part	1½
	2. State that pollen contains the male cell of the flower and ovule has female cells.	½
	3. Describe the processes of pollination	1
	4. Explain fertilization	1
	5. State what is a seed and how fruits develop from ovary	½

	6. Explain why some fruits have one seed while others have many seeds	½
	7. Draw and label longitudinal section of a flower	2
3.4 Reproduction Without Seeds	1. Identify and list some plants that can reproduce without making seeds.	½
	2. Describe some ways in which new plants can be grown without seeds.	2
	3. Perform a simple activity to illustrate reproduction without seeds.	Home work
3.5 Seed Structure and Germination	1. Identify the main parts of a seed.	1
	2. Draw labelled diagrams to illustrate the internal and external feature.	2
	3. Classify seeds as monocotyledons and dicotyledons.	½
	4. Perform experiments to determine the conditions for a seed to germinate and grow into a seedling.	2
	5. Plan and design experiments to determine the conditions for a seed to germinate and grow into a seedling.	Home work
	6. Discuss the conditions for a seed to germinate and grow into a seedling.	1 ½
3.6 Sexual Maturity and Reproduction in Humans	1. Recognise that humans show changes in proportion as they grow.	½
	2. Differentiate between changes in male and female during early adolescence.	2
	3. Identify the main parts of the male and female reproductive systems.	1
	4. State the functions of the main parts of the male and female reproductive systems.	2

	5. Explain the process of sexual reproduction in humans.	1
	6. Define puberty and adolescence.	½
	7. List and explain the main changes that occur during the menstrual cycle and the importance of personal hygiene.	2
	8. Draw bar charts to represent data collected on height measurements.	Home work

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THEME 4:-HEALTHY LIVING		
UNIT 4 **RESPONSIBLE LIVING**		
SUB-UNITS/TOPICS	**OBJECTIVES** **Students should be able to:**	**NUMBER OF TEACHING SESSIONS**
4.1 Sexually Transmitted Diseases	1. Name some sexual transmitted diseases and their main symptoms.	2
	2. Discuss the importance of responsible sexual behaviour.	2
4.2 Drug – Use and Abuse	1. Distinguish between useful drug and harmful drugs.	1
	2. State that some useful drugs can have a harmful effect it used in excess.	2
	3. Cite examples of bad drugs habits.	1
	4. Discuss the effects of drugs abuse on the human body and on the society.	2

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THEME 5:-ENERGY AND LIFE		
UNIT 5 ENERGY		
SUB-UNITS/TOPICS	**OBJECTIVES Students should be able to:**	**NUMBER OF TEACHING SESSIONS**
5.1 Forms Of Energy and Energy Conversion	1. State what is meant by energy.	1
	2. State the forms of energy give an example and say how it is used.	2
	3. Observe and identify the energy conversions occurring in some simple devices and common activities.	2
	4. State that all energy conversion results in some of the energy being lost or wasted.	2
	5. Describe complex systems in which energy conversion occur.	2
	6. Distinguish different types of energy sources and classify these as renewable and non- renewable.	1
5.2 The Sun as the Source of Energy	1. List and discuss some other uses of the sun's energy.	1
	2. Discuss some harmful effects of the sun's energy.	1
5.3 Fuel and their Uses in Home, Community, Industry and Nation	1. Define fuel	1
	2. Classify various substances as fuels.	1
	3. Describe how petroleum was formed and how it is used.	2

5.4 Energy Conservation in the Home and Community	1. Identify several ways in which energy use can be reduced in the home and community.	1
THEME 6:-THE UNIVERSE AND THE EARTH'S RESOURCES		
UNIT 6 **OUR PLACE IN THE UNIVERSE**		
SUB-UNITS/TOPICS	**OBJECTIVES** **Students should be able to:**	**NUMBER OF TEACHING SESSIONS**
6.1 Our Place in the Universe	1. State that the universe contains millions of galaxies and that each of these contains millions of stars.	1
	2. State that some of these stars have associated planets that orbit them	1
	3. Distinguish amongst stars, planets and natural satellites	2
	4. Infer the relationship between the sun and the planets in this solar system.	2
6.2 Earth and the Solar System	1. List the planets that make up our solar system	1
	2. List and compare the major characteristics of the planets	1
	3. State that some stars have associated planets that orbit them.	1
	4. Relate the special characteristics of planet earth to its suitability for allowing living things to exist.	2
	5. Make models of the solar system	Home work