

SCIENCE

Subject Code No. 141

A. GENERAL OBJECTIVES

The syllabus places emphasis on the assessment of facts, concepts and principles under three main objectives of the cognitive domain which are knowledge, understanding and application along with the acquisition of process skills. Objective skill under psychomotor domain will also be assessed. The broad assessment objectives are listed below. The examination will test the candidate's ability to:

1. recall facts and concepts related to his/her environment;
2. explain and interpret scientific concepts and principles related to his/her environment;
3. extract information from materials presented in the form of charts, graphs, diagrams, pictures, etc;
4. give reasons for the need to maintain good health habits and conserve natural resources;
5. apply knowledge of scientific concepts and principles to new situations;
6. draw and label a diagram related to the course content.

B. TOPICS

1. Water
2. Air
3. Living Things (Plants in the Environment, Animals in the Environment)
4. Materials in the Environment
5. Energy
6. Food, Health and Hygiene
7. The Human Body - Teeth

C. ASSESSMENT OBJECTIVES

Topics	Essential Learning Competencies	Desirable Learning Competencies
	Candidates should be able to:	Candidates should be able to:
1. WATER		
1.1 Sources of Water	- describe various sources of water (salt water, fresh water)	
1.2 Properties of Water	- name the three physical states of water	

Topics	Essential Learning Competencies	Desirable Learning Competencies
Properties of Water <i>(continued)</i>	<ul style="list-style-type: none"> - explain how water can be changed into ice, ice into water, water into steam, steam into water, water into water vapour and water vapour into water - state that the level of water is horizontal - interpret that water flows from a higher to a lower level - cite examples of common substances which dissolve in water - explain how salt is obtained by evaporation of sea water 	<ul style="list-style-type: none"> - infer that water exists as water vapour in the air
1.3 Uses of Water	<ul style="list-style-type: none"> - list four common uses of water - explain the importance of water for living things - cite examples of how to avoid wastage of water - explain the need to avoid wastage of water 	<ul style="list-style-type: none"> - infer that water is essential for living things
1.4 Water Pollution	<ul style="list-style-type: none"> - cite examples of how water can be polluted - mention the harmful effects of water pollution on humans and the environment 	<ul style="list-style-type: none"> - explain the causes of water pollution - infer causes and effects of water pollution from given data
2. AIR		
2.1 Existence of Air	<ul style="list-style-type: none"> - interpret the presence of air in the environment - state that wind is air in motion - list objects which depend on wind to move - state different uses of wind 	<ul style="list-style-type: none"> - conclude that air is present all around us, even in 'empty space'
2.2 Properties of Air	<ul style="list-style-type: none"> - state that air is a mixture of many gases such as oxygen, carbon dioxide and water vapour - explain that air expands on heating and contracts on cooling - name some common fuels - name items which easily catch fire - state that oxygen is used up during burning and carbon dioxide is given out - interpret that oxygen is necessary for burning - list some of the ways to extinguish different types of fires - list certain precautions to be taken to prevent fires 	<ul style="list-style-type: none"> - infer that air expands on heating and contracts on cooling

Topics	Essential Learning Competencies	Desirable Learning Competencies
2.3 Air is Essential for Life	- state that air is essential for living things	
2.4 Air Pollution	- state that polluted air contains toxic gases and small particles - explain the causes of air pollution - state the harmful effects of air pollution	- infer causes and effects of air pollution from given data - suggest ways of controlling air pollution
3. LIVING THINGS *		
3.1 Characteristics of a Living Thing	- list the characteristic features of a living thing - interpret given data to determine whether a plant/an animal is a living thing	- state the changes that living things bring to the composition of air
3.2 Differences between Plants and Animals	- list the differences between plants and animals	- compare the main characteristics of plants and animals
3.3 Parts of a Plant	- identify the main parts of a plant - draw and label the main parts of a plant - state functions of the main parts of a plant - list the conditions necessary for seed germination - state that plants need light and water to grow	- infer the importance of different parts of a plant
3.4 Importance of Plants	- explain the usefulness of plants to humans, animals and the environment	
3.5 Variety of Animals	- recognise animals from drawings/pictures - identify the main physical characteristics of a given animal - classify animals into various groups according to common characteristics - mention habitats of different animals - describe feeding habits of different animals found in Mauritius/Rodrigues - recognise and name some rare/exotic/ extinct birds in Mauritius/Rodrigues - list some steps taken to protect the rare birds - draw and label the various stages in the life cycle of a butterfly	- compare the main characteristics of different animals - give reasons why these birds (rare birds) have become rare

* This topic covers Units, 'Living Things', 'Plants in the Environment' and 'Animals in the Environment' given in the Ministry of Education & Human Resources/NCCRD Science textbooks for Standards V and VI.

Topics	Essential Learning Competencies	Desirable Learning Competencies
LIVING THINGS <i>(continued)</i>		
3.6 Importance of Animals	- explain the importance of animals to humans and the environment	
4. MATERIALS IN THE ENVIRONMENT		
4.1 Natural Materials	<ul style="list-style-type: none"> - list some common useful materials in the environment and their uses - list advantages and disadvantages of some common materials - list materials which get wet and which do not get wet and their uses - state how soil is important to plants - state conditions that favour the growth of coral polyps - state the origin and uses of sand - list some common metals and their uses - list some materials obtained from plants and their uses - explain the advantages and disadvantages of cotton - list some materials obtained from animals and their uses 	<ul style="list-style-type: none"> - distinguish between natural and man-made materials in the environment - give reasons why too much sand should not be removed from the sea-bed
4.2 Man-Made Materials	<ul style="list-style-type: none"> - name objects made of plastic/glass - list some common uses of plastic/glass - explain the advantages and disadvantages of plastic/glass 	<ul style="list-style-type: none"> - state that plastic and glass are man-made materials
5. ENERGY *		
5.1 Forms of Energy	<ul style="list-style-type: none"> - list some common forms of energy - illustrate with examples how energy may be changed from one form to another 	
5.2 Electricity	<ul style="list-style-type: none"> - describe a complete electric circuit - identify some common electrical symbols - state that switches can be used to control the flow of electricity 	<ul style="list-style-type: none"> - infer that electricity can only flow in a complete circuit

* This topic covers Units, 'Energy', 'Light and Sound' and 'Electricity' given in the Ministry of Education & Human Resources/NCCRD Science textbooks for Standards V and VI.

Topics	Essential Learning Competencies	Desirable Learning Competencies
Electricity (<i>continued</i>)	<ul style="list-style-type: none"> - list some precautions that should be observed while using electrical appliances - differentiate between conductors and non-conductors of electricity 	
5.3 Sources of Energy	<ul style="list-style-type: none"> - list some common sources of energy - state that fossil fuels are not renewable - distinguish between sources of energy which cause pollution and which do not 	<ul style="list-style-type: none"> - distinguish between renewable and non-renewable sources of energy - explain the need for using non-polluting sources of energy
5.4 Uses and Conservation of Energy	<ul style="list-style-type: none"> - list some uses of energy in everyday life - list ways of conserving energy in everyday life 	<ul style="list-style-type: none"> - give reasons for conserving energy
5.5 Light	<ul style="list-style-type: none"> - name some sources of light - infer that light enables us to see - infer that light passes through transparent objects - give examples of transparent and opaque objects - infer that light travels in a straight line 	<ul style="list-style-type: none"> - infer that light cannot pass through certain objects and this results in the formation of shadows
5.6 Sound	<ul style="list-style-type: none"> - state that there are many kinds of sounds - state that there are many sources of sound 	<ul style="list-style-type: none"> - infer that a loud sound can be a source of noise pollution - infer that sound is produced by vibrating objects
6. FOOD, HEALTH AND HYGIENE		
6.1 Nutrition and Health	<ul style="list-style-type: none"> - mention the different food groups (nutrients) - list some common food items from each food group mentioned above - define the term 'balanced meal' and give some examples - generalise that good habits of personal hygiene, balanced meal, adequate rest and regular physical exercise are essential for maintaining good health - state that microbes are present all around us 	<ul style="list-style-type: none"> - classify foodstuffs based on their nutrient contents - give some advantages of taking a balanced meal

Topics	Essential Learning Competencies	Desirable Learning Competencies
Nutrition and Health <i>(continued)</i>	- state that some microbes may cause diseases	
	- state that microbes can contaminate our food	
6.2 Food Preservation	- list some ways of preserving food	- infer that microbes cause food spoilage
	- cite examples of different methods of preserving foods	- describe how preservation of food prevents microbes from spoiling the food
7. THE HUMAN BODY		
7.1 Teeth	- describe the dentition of a child and an adult	
	- give the importance of dental care	

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Prescribed Textbooks

Science, Standards V and VI textbooks - Ministry of Education & Human Resources/NCCRD

D. DESCRIPTION OF PAPER

The questions in this paper will test candidates':

- (i) knowledge with understanding in relation to science topics;
- (ii) ability to handle written/diagrammatical/graphical information in relation to science topics and everyday experiences.

SECTION A

Q1 (20 marks)

It will comprise 10 multiple-choice items.

Q2 (40 marks)

This question will consist of **two** parts:

Part A (20 marks)

Part B (20 marks)

Each part will comprise **two** or **more** very short and/or short-answer sub-questions.

The sub-questions may require candidates to complete tables, fill in the blanks in sentences and/or supply answers in simple sentences. Words may be provided for the blanks.

Candidates may also be required to draw/complete/label a simple diagram.

SECTION B

Q3 and Q4 (20 marks each)

Each question will comprise **two** or **more** sub-questions, which will aim at testing candidates' knowledge, understanding and the ability to apply the concepts and principles of science to solve problems.

The sub-questions may require candidates to draw/complete/label a simple diagram.