

MINISTRY OF EDUCATION



INTEGRATED SCIENCE
TEACHER'S GUIDE

GRADE 8

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FOREWORD

It is acknowledged that thorough planning is essential for effective teaching and learning. Such planning is even more critical today when one considers the limited resources, both human and material, which are available.

The Ministry of Education, through the Secondary School Reform Project (SSRP), has developed curriculum materials that have been designed to improve the quality, equity and efficiency of secondary education. The curriculum materials include Levels 7-9 Curriculum Guides and Teacher's Guides for Language Arts, Mathematics, Science, Social Studies, Reading and Practical Activity Guides for Science. These materials have been tested in all secondary-aged schools nationwide and are considered useful in providing teachers with a common curriculum framework for planning, monitoring and evaluating the quality of teaching and learning. The curriculum materials also provide a basis for continuous student assessment leading to the National Third Form Examination (NTFE).

The initial draft curriculum materials have been subjected to evaluation, by respective Heads of Departments, from all ten Administrative Regions and Georgetown and they have been subsequently revised to reflect the views expressed by teachers.

The revised curriculum materials are now published as National Curriculum documents to provide consistency and support for teachers in the process of planning for an effective delivery of the curriculum. All secondary teachers must ensure that they make good use of these curriculum materials so that the quality of and learning can improved in all schools.

Ed Caesar
Chief Education Officer

PREFACE

The teaching of Science has shown sustained growth at the secondary school level in the past decade, and in order to maintain such growth, the Level 9 curriculum guide has been developed by a team of curriculum Science specialist.

The curriculum guide has objectives which are achievable targets of skills, knowledge, understanding and attitudes. The guide has also identified units, topics, content and strategies to be used, developed and reinforced.

It is the duty of the heads of department to prepare general schemes, which they can use to better inform the teachers in their departments in order to write a more detailed year/term plan.

There is no set format for the writing of schemes of work. This may vary from school to school and even teacher to teacher. However, the scheme of work for any academic year must be broken down into term schemes. Further, the term schemes can be broken up into a weekly outline, which identifies objectives to be completed each week.

In the curriculum process, feedback is a necessary condition for change and improvement, and I would urge all of our Science teachers to provide such feedback to the curriculum staff at NCERD and also as they visit to provide support that will enhance your classroom teaching.

Mohandatt Soobarran

Head

Curriculum Development and Implementation Unit

National Centre for Educational Resource Development

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UNIT: LIFE

Topic	Learning Objectives				Content	Activities/Materials Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
The microscope	Observe Manipulate apparatus Record Draw and label diagrams	The parts of the microscope The purpose of each part of the microscope. The purpose of the microscope		Recognize the need for taking care of the microscope	The microscope	Group Activity Discussion	Can students: -identify the parts of and use the microscope?	Language Reporting
Cells- Building blocks of life		The parts of a plant and an animal cell The function(s) of the nucleus, cell wall, cytoplasm, mitochondrion, vacuole, cell membrane, chloroplast	Explain the importance of cell organelles to their functions in the plant and /or animal cell	Appreciate that plant and animal cells are living units	Plant and animal cells		-make temporary slides of plant and animal cells? -identify the parts of plant and animal cell from a temporary slide?	Agriculture Science Plant and animal cells and tissues
		The types of plant tissue Tissues are groups of similar cells working together in unison	How specific tissues function		Animal and plant tissue		-identify plant and animal tissues from temporary slides?	Mathematics Measuring and drawing to scale

UNIT: LIFE

Topic	Learning Objectives				Content	Activities/Materials Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Storage Organs in plants	Manipulate Observe Record Hypothesise Predict Communicate	The parts of plants that store food The food nutrients found in specific plant storage organs	A storage organ can be tested for starch Plants need storage organs	Appreciate that these food storage organs are very important sources of food for humans	Storage organs in plants	Activity Laboratory report Discussion	Can students: -identify from tests, storage organs that contain starch?	Language Reporting Art Drawing Agriculture Science Plants
Energy from food	Experiment	Energy can be release at different rates: - quickly (combustion), slowly (digestion)	Explain how to measure release from a sample of food	Willingness to use equipment carefully	Energy in food		-identify how much energy is release from a sample of food?	Home Economics Food Agriculture Science Plants Language Reporting Mathematics Measuring

UNIT: LIFE

Topic	Learning Objectives				Content	Activities/ Materials Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Feeding relationships in the ecosystem	Observe	What the term habitat means	Specific organisms are adapted to live in their habitat	Willingness to share ideas and information on preserving habitats	Habitats	Field trips	Can students : -Identify the types of habitat?	Agricultural Science Habitats
	Record	Types of habitats				Discussion	-explain how the organism is adapted to the habitat?	Social Studies Relationships
	Report	What the term community means	Organisms need to live together	Appreciate the interdependence of organisms in a community	Communities: - -Terrestrial -Aquatic		-Identify a community of organisms?	Social Studies Communities Language Reporting
	Estimate and calculate	Types of communities						
		What the term population means	A quadrat can be used to calculate % population.	Willingness to appreciate the importance of knowing the specific species population of an environment	Population		-Find the % population species in a quadrat?	Mathematics Calculating Social Studies Population
		The population of various types of vegetation can be identified using the quadrat						

UNIT: LIFE

Topic	Learning Objectives				Content	Activities/ Materials Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Feeding Relationships	Observe Classify Draw Record	What the terms: producer, primary secondary and tertiary consumers mean The names of the trophic levels.	Feeding relationships occur in various environments How organisms depend on each other for survival	Appreciate that organisms need each other in order to survive Willingness to accept that humans are involved in feeding relationships in their environment	Food chains and food webs	Field trips Discussion	Can the students -construct food chains and food webs? -name an organism and identify its trophic level? - classify organisms in trophic levels?	Language Reporting Agriculture Science Organisms Visual Arts Charts

UNIT: LIFE

Topic	Learning Objectives				Content	Activities/ Materials Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Respiration	Observe	What respiration, anaerobic and aerobic respiration and breathing mean	Respiration is important to living organisms	Appreciate the importance of respiration to living organisms	Respiration: -Aerobic and -anaerobic respiration	Activity Discussion	Can students: -compare anaerobic and aerobic respiration and write word equations for same?	Language Reporting
	Record							
	Hypothesise	The difference between breathing and respiration						Mathematics Measurements Calculations
	Measure	The similarities and differences of aerobic and anaerobic respiration						
Draw and label diagrams	The characteristics of respiratory surfaces	Surface area to volume ratio is important to living organisms	Use the surface area to volume ratio to solve simple problems	Respiratory surfaces		-solve problems using surface area to volume ratio		
Manipulate	The gases involved in the process of gaseous exchange	How gaseous exchange occurs in: -man -fish -insect -plant			Gaseous exchange in: -plants -animals		-demonstrate and explain gaseous exchange in man	
			Inhaled air differs from exhaled air	Show concern/interest for issues relating to atmospheric pollution			- compare inhaled and exhaled air?	

UNIT: LIFE

Topic	Learning Objectives				Content	Activities/ Materials Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Pollination	Classify Observe Investigate Interpret Draw Record Communicate Manipulate Design	Types of pollination (cross and self) Agents of pollination The advantages of cross and self pollination	Flowers are adapted to facilitate cross and self pollination	Appreciate the role of insects in pollination and the role of pollination in fruit production.	Types of pollination (cross and self)	Field trip Group activity Discussion Reporting Presentation	Can students: -compare cross and self pollinated flowers? -identify the advantages of cross and self pollination?	Agri. Science Language Art
Fertilisation		What the term fertilisation means Where fertilisation occurs Results of fertilisation	Explain: (i) how the male sex cells (gametes) move to meet the female sex cells (gametes) (ii) the process and site of fertilisation	Appreciate the role of fertilisation in food production	Fertilisation and development of seeds/fruits		-prepare temporary slides of pollen grains? -make drawings using hand lens, of the longitudinal section through the ovary of a flower? -use a chart to explain (i) how the male sex cells (gametes) move to meet the female sex cells (gametes) (ii) the process and site of fertilisation	

UNIT: LIFE

Topic	Learning Objectives				Content	Activities/ Materials Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Human reproduction	Draw Observe Communicate	<p>The names of the structures of the male and female reproductive systems</p> <p>The normal site of fertilisation</p> <p>What the term puberty means</p> <p>The physical changes that occur at puberty</p> <p>What the menstrual cycle is</p>	<p>The structures of the reproductive system relate to their functions</p> <p>Physical changes occur at puberty</p> <p>The reasons for the occurrence of the menstrual cycle</p>	<p>Appreciate the need to control our sexual drives</p> <p>Appreciate the physical changes which occur at puberty as well as the fact that they occur at different periods in the lives of various individuals</p> <p>Appreciate the role of the menstrual cycle in a woman's reproductive life</p>	<p>Human reproductive systems: structure and function</p> <p>Physical characteristics of puberty</p> <p>Menstruation</p>	<p>Group activity</p> <p>Reporting</p> <p>Discussion</p>	<p>Can students -relate the structures of the male and female reproductive systems to their functions?</p> <p>-compare the changes in males and females, that occur at puberty?</p> <p>-use a diagram to explain the menstrual cycle</p>	<p>Health and family life</p> <p>Human reproduction</p>

UNIT: SIMPLE MECHANICS

Topic	Learning Objectives				Content	Activities/ Materials Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Forces and Motion	Manipulate Record Predict Hypothesise	The meanings of the terms force and acceleration due to gravity The SI unit of force The formula for calculating force ($F=mg$) Ways of reducing friction The advantages and disadvantages of friction	Friction can be reduced Mass can be converted to force	Appreciate that objects move when forces are applied to them Use the formula $F=mg$ to solve problems	Force and motion	Activity Discussion Demonstration	Can students solve problem using $F=mg$? - compare the force required to move an object along various surfaces? -explain ways of reducing friction?	Language Reporting Social Studies Forces Mathematics Equation

UNIT: SIMPLE MECHANICS

Topic	Learning Objectives				Content	Activities/ Materials/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Machines	Manipulate Observe Record Classify Predict	Examples of simple and complex machines and their uses First, second, and third class levers and examples of same Two different levers in the human body	A hammer could be used as a first, second and third class lever The incline plain can be compared to a screw Levers, pulleys and inclined planes make work easier	Appreciate the importance of pulleys in our daily life Willingness to participate in a group activity	Machines: i) Levers -First class -Second class -Third class -The incline plane -The Screw -The pulley i) single ii) block and tackle	Activity Discussion	Can students-: -name examples of simple and complex machines and state their uses? - explain how a hammer can be used as a first, second and third class lever? -demonstrate and explain how levers, pulleys, and inclined planes make work easier?	Mathematics Measuring Agriculture Science Use of Agricultural tools Industrial Arts Tools and machinery Physical Education Machinery

UNIT: MATTER

Topic	Learning Objectives				Content	Activities/ Materials/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
The composition of matter	Manipulate equipment	What the term matter means.		Willingness to question the particulate theory	The particulate theory of matter (Dalton's Theory)	Activity Discussion	Can students -explain the particulate theory of matter? -draw and describe the structure of an atom? -differentiate between a molecule and an atom?	
	Observe	The particulate theory of matter						
	Predict	The meaning of the terms atom, proton, neutron, electron and molecule.	How the parts of the atom are arranged	Show an interest in atoms and molecules				
	Infer	Examples of atoms and molecules	Atoms differ from molecules					
	Design and plan	The meanings of the terms element and compound	An element differs from a compound	Show curiosity in elements and compounds			-make models of named compounds and elements? -differentiate between an element and a compound?	
	Investigate	What a mixture is	There are differences in the physical properties of a mixture and a compound	Willingness to work in a clean and orderly manner	Mixtures and compounds		-compare the physical properties of a mixture with those of a compound and state reasons for the differences?	Home Ec. Food preparation Agri Science Animal feeds Agri. Chemicals
	Communicate	The names of elements in a mixture and a compound	Make oxides in the laboratory				-write word equations for a reaction between two or more elements?	
		Chemical reactions either give off or take in heat					-make oxides in the laboratory	
		Word equations can be written for chemical reactions						

UNIT: MATTER

Topic	Learning Objectives				Content	Activities/ Materials/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
The composition of matter	Research	The kinetic theory of matter	The kinetic theory can be related to the physical properties of the three states of matter	Willingness to share ideas	The kinetic theory of matter	Activity Discussion	Can students -use the kinetic theory to explain the three states of matter? -relate the kinetic theory to the physical properties of the three states of matter?	Home Ec. The three phases of matter
	Communicate							
Interpret observations								
	Draw conclusions							

UNIT: ACIDS AND BASES

Topic	Learning Objectives				Content	Activities/ Materials/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Measuring acidity and alkalinity	Observe	The meaning of the terms indicator, universal indicator	To extract an indicator from flowers and use it	Willingness to cooperate with others	Indicators	Activity Discussion	Can students -extract an indicator from a flower and use it to test substances for acidity/alkalinity?	Home Ec. Food preparations
	Manipulate							
	Record	Litmus changes colour in acids/alkalis	To compare the strengths of acids/alkalis using the pH scale	Willingness to be critical of results obtained	pH scale		-identify the pH levels of various acids and alkalis?	Home Ec Foods Agri Sc. Soils
	Draw	Acidity and alkalinity are measured on a pH scale (0-14)						
	Predict	The meaning of the terms alkali and base	Why a named alkali is used in the home	Willingness to share and question ideas	Alkalis		-name house-hold alkalis and state what they are used for and why?	Home Ec. Chemicals in the home
	Communicate							
		The meaning of the terms acid	Why a named acid is used in the home		Acids		-name house-hold acids and state what they are used for and why?	
		What the term neutralisation reaction means	The products of neutralisation reactions can be compared		Neutralisation reactions		-name and compare the products of neutralisation reactions?	
		Acids can be neutralised by metals, alkalis/bases or carbonates						
	Word equations for neutralisation reactions	How to identify: CO ₂ , (g) O ₂ (g) H ₂ (g)	Show curiosity about gases Concern for safety	Tests for CO ₂ , O ₂ , and H ₂ ,		-write and explain word equations for neutralisation reactions?		
	The names of chemicals, materials and equipment necessary to test for CO ₂ , O ₂ , and H ₂ ,							
						-collect and identify the following gases: CO ₂ , O ₂ , and H ₂ ,		

UNIT DETECTING THE ENVIRONMENT

Topic	Learning Objectives				Content	Activities/ Methods/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
The eye	<p>Draw</p> <p>Manipulate equipment,</p> <p>Observe</p> <p>Record</p>	<p>The parts of the mammalian eye and their function</p> <p>The principle involved in seeing objects.</p>	<p>How the parts of the eye function</p> <p>The eye can be compared with a camera</p>	<p>Appreciate that the eyes are very important to organisms.</p> <p>Be willing to handle equipment carefully</p> <p>Appreciate that a series of processes are involved in being able to see objects</p> <p>Appreciate that the camera functions similarly to the eye.</p>	The mammalian eye	<p>Discussion</p> <p>Activity</p> <p>Demonstration</p>	<p>Can students: -identify the parts of the eye and describe their function?</p> <p>-dissect a mammalian eye?</p> <p>-explain the principle by which parts of the eye function?</p> <p>-experiment with lenses of varying thickness to explain accommodation?</p> <p>-make a model of the eye?</p> <p>-compare the eye with the camera?</p>	<p>Agri. Science</p> <p>Visual Arts</p> <p>Language</p> <p>Math</p> <p>Art and Craft</p>

UNIT DETECTING THE ENVIRONMENT

Topic	Learning Objectives				Content	Activities/ Methods/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Hearing Sounds	Draw and label diagram	The parts of the ear and their functions	How the parts of the ear function	Appreciate the need to care for the ear	The Ear	Demonstration	Can students: -make a model ear?	Art and Craft Language
	Manipulate equipment	Sound travels in waves Appliances that use sound • Microphone • Stethoscope	How sound is produced	Exhibit an awareness of the importance of sound	Sounds	Activity Discussion	-explain how the parts of the ear function? -demonstrate the transmission of sound through various media?	
Observe			The ear detects sound					
Record			How the microphone and stethoscope function					

UNIT DETECTING THE ENVIRONMENT

Topic	Learning Objectives				Content	Activities/ Methods/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Other senses: The Nose The Tongue	Observe Draw and label diagram Communicate	 The areas of the tongue which detect sweet, sour, salty and bitter tastes	How smell is detected Explain how tastes are detected	Appreciate that the nose must be cared for. Appreciate importance of the tongue	The olfactory organs The tongue	Activity Discussion	Can students: -explain how smell is detected? -describe smells? -explain taste is detected? -identify the areas of the tongue that detect various tastes? - describe tastes	Food and Nutrition Social Studies Language Food and Nutrition Visual Arts
The Skin		The functions of the skin	Sensitivity varies in parts of the skin. The skin aids in regulating body temperature How to care for our skin.	Willingness to care for the skin	The mammalian skin		-label parts and state the function of the skin?	

UNIT SOIL: THE BASIS OF AGRICULTURE

Topic	Learning Objectives				Content	Activities/ Methods/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Soil Composition	Manipulate equipment	The organic and inorganic components of soil		Appreciate the importance of soil to our daily lives	The composition of soil	Activity Discussion	Can students: -perform experiments to observe soil structure?	Agri.Science Social Studies Math
	Experiment Observe Record	The names of some soil organisms	How (i) soil organisms can be collected (ii) to test for the presence of air and water in soil	Show interest in promoting soil conservation	The physical properties of soil		-perform experiments to observe organic and inorganic components of soil?	
Soil Types		The properties that are important to plant growth	Humus influences plant growth		The importance of soil properties to plants		-perform experiments to explain the effects of humus on plant growth?	
		The three main types of soil			Types of soil: Sand, clay, silt/loam		-collect, name and identify the three main types of soil? - describe samples of soil in relation to their particle sizes?	
		The main physical properties of the three main soil types			The physical properties of the three main soil types		-identify and compare the physical properties of sand, silt and clay?	

UNIT SOIL: THE BASIS OF AGRICULTURE

Topic	Learning Objectives				Content	Activities/ Methods/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Comparing Soils: Sand, Clay Loam	Manipulate equipment	The physical properties of sand, clay and loam	The capillarity, permeability, air space and humus content, in sand, clay and loam can be compared	Appreciate that it is important to know about the properties of soils.	Comparing soils: sand, clay and loam	Activity Discussion	Can students: -perform experiments to compare capillarity, permeability, air space and humus content, in sand, clay and loam?	Agri.Science Social Studies Language Visual Arts Math
	Experiment							
Observe	The pH at which plants grow best.	Soil samples are prepared for testing their pH values	Appreciate that knowledge of soil pH helps farmers	Testing soil samples for pH values	-determine which soil type is most suitable for the plant growth? -design a chart to show the comparison of the three main soil types?			
Record							Soil pH can be improved	Appreciate that soil pH can be altered to improve their fertility
Draw	Soil pH can be improved	Appreciate that soil pH can be altered to improve their fertility	Improving soil pH	-add chemicals to soils to alter their pH?				

UNIT SOIL: THE BASIS OF AGRICULTURE

Topic	Learning Objectives				Content	Activities/ Methods/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Improving clayey soils	Research Manipulate equipment Observe Record	Ways of improving clayey soils The effects of lime on clayey soils	Explain the effects of the addition of the following on clayey soils: - sand - lime - ash	Appreciate the importance of humus in soil fertility Willingness to work co-operatively in groups to improve clayey soil	Improving clayey soil for increased production	Research Activity Discussion	Can students: -grow garden crops on original clayey soil and on improved clayey soil? -draw graphs to show comparison of plants' growth rate on original clayey soil and on improved clayey soil?	Language Math Agri. Science
Improving sandy soils		Ways of improving sandy soils The effects of lime on sandy soils	Explain the effects of the addition of the following on sandy soils: - clay - humus - fertilizers	Appreciate that soil fertility can be improved to improve production Willingness to work co-operatively in groups to improve sandy soil	Improving sandy soil for increased production		-grow garden crops on original sandy soil and on improved sandy soil? -draw graphs to show comparison of plants' growth rate on original sandy soil and on improved sandy soil?	

UNIT SOIL: THE BASIS OF AGRICULTURE

Topic	Learning Objectives				Content	Activities/ Methods/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Conserving and renewing soil fertility	Research	The methods used to improve and conserve soil fertility	Soil fertility can be conserved and renewed using various methods	Appreciate that techniques in soil conservation and renewal are very useful in making soil a permanent resource	Renewing soil fertility	Research	Can students: -describe the methods used to conserve and renew soil fertility? -compile in a booklet information on renewing and conserving soil fertility?	Language Math Agri. Science
	Manipulate equipment		It is important to conserve and renew soil fertility.			Activity		
Making compost	Observe	The components of compost	How compost is made	Promote public awareness of the importance of making compost in relation to waste management	Making compost	Discussion	-make compost from suitable waste materials and remains from plants and animals?	
	Record							
	Draw and label							

UNIT ENERGY

Topic	Learning Objectives				Content	Activities/ Methods/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Simple circuits	Draw Manipulate equipment Observe	The components of a simple electric circuit	Why the lamp lights in the circuit	Appreciate the importance of electricity in our daily lives	Simple circuits	Activity Discussion	Can students: -construct a simple circuit and use the appropriate symbols to draw a circuit diagram?	Language Visual Arts Math
Series and parallel circuits	Predict Communicate	What the terms series, parallel circuits, cell, battery, ammeter mean	How a series and a parallel circuit differ How a cell and a battery differ The brightness of the bulbs and ammeter readings differ for the series and parallel circuits	Appreciate the need to connect household electrical appliances in parallel	Series and parallel circuits		-construct series and parallel circuits? -draw series and parallel circuits using symbols? -compare the brightness of the bulbs and ammeter readings for the series and parallel circuits?	

UNIT ENERGY

Topic	Learning Objectives				Content	Activities/ Methods/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Making electricity	Manipulate equipment	Methods by which electricity is produced Some sources of electrical energy	Electricity can be produced by various methods e.g. electromagnetic induction Energy can be converted Electricity is used in every day activities	Appreciate the need to conserve resources that are used to produce electricity	Electricity production	Activity Discussion	Can students: -construct a simple voltaic cell? -name some sources of electricity? -produce electricity by employing various methods? e.g. - chemical action - electromagnetic induction - friction	Home Ec. Electricity in the home Industrial Arts
	Observe							
Electricity in the home	Record	The safety devices that are used in electrical appliances in the home What to do in a electrical emergency Some conductors and insulators that are found in the home	Electricity can be dangerous to humans Cables/wires are designed to ensure electrical safety	Appreciate the need to follow all precautions when handling wires, plugs and electrical appliances	Electricity in the home.		-wire a two pin fused / three pin plug according to the correct colour code?	
	Draw and label							
	Hypothesise							
	Predict							

UNIT ENERGY

Topic	Learning Objectives				Content	Activities/ Methods/ Strategies	Evaluation	Areas of Integration
	Skills	Knowledge	Understanding	Attitudes				
Electricity in the home	Manipulate equipment Predict Observe Record	What a fuse/circuit breaker is What a fuse looks like and where to find one in an electrical appliance Electricity can produce a heating effect that may be harmful or beneficial to man	A short circuit can be dangerous to humans Fuses or circuit breakers are useful in electrical safety	Willingness to exercise the necessary precautions when handling electrical appliances	Fuses	Activity Discussion	Can students: demonstrate the heating effect of electricity? e.g. using steel wool in a circuit	Home Ec. Electricity in the home Industrial Arts