TOPIC	LEARNING OBJECTIVES				CONTENT	MATERIALS	METHOD/ STRATEGIES	EVALUATION	AREA(S) OF INTEGRATION
	SKILLS	KNOWLEDGE	UNDERSTANDING	ATTITUDE					
Flowering Plants External Parts of Flowering Plants	Identify parts of flowering plants Identify some common flowering plants found in Guyana Dissect flowers and identify parts Draw labeled line diagrams of parts Identify staminate and pistillate flowers on vine crops	The external parts of plants (flowering) The structure and function of each named part The parts of the flower, stem, roots and leaves The types of root, stem, leaves and flowers The two main systems of a plant (root systems and shoot system)	The importance of flowering plants in agriculture The relationship of the parts of the flower to fruit development The construction of a flow chart on fruit development The relationship between the structure and function of the components parts of the whole plant	Care and concern for the preservation of plants, that are useful, in the environment Appreciate the aesthetics of ornamental and landscaping plants Use plant products with care and an appreciation for the value of their contribution to life	Flowering plants are made up of two systems:- 1. Root System which consist of different types of roots, re-tap, fibrous and adventitious 2. Shoot system which includes the stem, leaf, flower and fruit.	Plant specimen - the whole plant - specimens of roots, flowers, fruits seeds and stems. Handlens and tiles, scalpel blades Old newspaper, cardboard Flow charts on fruits production Work sheets Textbooks	Investigations: Examples i) Examination of roots - collecting root specimens of plants to note the variations in taproot and the fibrous root systems. ii) Examination of stems and leave collecting shoots of small branches and noting position of buds and branches	Assessment on impromptu talks Assessment for accurate and relevant information on external parts of flowering plants Reporting on observations Class displays and exhibition Students composing songs and poems about the external parts of plants.	**Science** Parts of a flowering plant. **Art and Craft** Drawing and labelling diagrams Designing and constructing flowers from waste materials **Language Arts** Report writing Descriptive writing Poetry

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Flowering Plants External Parts of Flowering Plants (cont'd)	Cultivate at least two flowering plants for decorative purposes Explore parts of the flowering plants through questioning Report on findings/ observations Collect, sort and tabulate information	The parts that make up the two systems of a flowering plant The different types of roots, stems, leaves, fruits and seeds	The importance of plants to all living things		Part and shape of leaf blade Simple and compound leaves Primary and Secondary functions of leaves Structure of the flower as it relates to bisexual pistillate and staminate flowers	Agricultural Science for Secondary Schools in Guyana BK 1 Page 40-53 Agricultural Science for the Caribbean pp 19-29 BK. 1 R. Persaud Junior Secondary Agriculture for the Caribbean BK 1 pp 39-55 Science pp 10-21 Science pp 10-21	Recalling the meaning of axil, node and internode Recording the kind of leaf venation, arrangement of leaves and the position and appearance of buds Individual groups collect different parts of plants eg. seeds, fruits	Compilation of scrap book using illustration Assessment of pupils ability to identify, recognize and assemble component parts to make a whole flower, plant, seed, etc.	**Home Economics** Parts of the plant used for food cleaning and scrubbing etc **Industrial Arts** Uses of parts of a tree

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Flowering Plants External Parts of Flowering Plants (cont'd)					Pollination and fertilization Dry indehiscent fruits Dry dehiscent fruits Fleshy fruits Structure of the seed as it relates to monocots and dicots	Agricultural Science 1 by Eliot and Wolsey. Puzzles	Field trip to observe plants in community and school farms to identify different types of leaves, stems, flowers, fruits and seeds Display of chart on the external parts of flowering plants Teacher led discussions Dramatisation of the external parts of the leaves to show importance of each to the plant Demonstrating dissection		

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Flowering Plants External Structure of Monocotyledons and Dicotyledons	Identify monocotyledonous and dicotyledonous plants Draw labeled line diagrams of seed, flower and roots of dicots and monocots Dissect the seed and flower of monocots and dicots Identify patterns of flowers from observations	The two main classes of flowering plants The structure of a monocot and dicot seed, flower, leaves and root	The classification of plants based on their external features The relationship between types of flowers, seeds and root systems to crop plants Dicots and monocots with respect to their more important structural differences	Awareness of the importance of the two main classes of flowering plants	Definition of terms of the two main kinds of flowering plants; monocotyledons and dicotyledons These words are shortened to "monocots" and "dictos" Monocots have one seed leaf and dicots have two seed leaves cotyledons Other differences between mococots and dicots Moncots have: - petals grouped in three or multiples of three - parallel veined leaves	Chart of preserved specimens. School farms and the community. Scalpel blades Hand lens, Work sheets, paper, cardboard, textbooks Agricultural Science for Secondary Schools in Guyana Bk. 1 pp 40 Science 10 Pp 71-73 Modern Biology Pp 332-337	Individual/group collection and examination of (i) seeds to identify number of cotyledons (ii) roots to determine type of root system Group activity to compare diagrams with specimens Group presentations on observations made	Assessment on: Reports on observations Performance of practical activities in which pupils demonstrate skills of recognition, identification and labelling parts of monocots and dicots	**Science** Classification of plants

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Flowering Plants External Structure of Monocotyledons and Dicotyledons (Cont'd)	Sort and assemble parts of monocots and dictos to create a new plant Identify examples of monocot and dicot plants				- fibrous roots Dicots have: - two seed leaves - petals grouped in four or five -branched, net-veined leaves -tap roots	Agriculture Science 2 By Elliot and Walsey, Junior Secondary Agriculture p. 50 Audio and Video Cassettes	Demonstration on the preservation of specimens for scrapbook compilation: eg. Root systems, types of leaves and flowers Teacher lead discussions, Field Trips to observe plants in their environments, illustrative differentiation by names of diagrams	Assessment of student's explanation of the differences between monocots and dicots	

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Flowering Plants External Structure of Monocotyledons and Dicotyledons (Cont'd)	Preparation of seed box (filling seed box with potting soil) Determine the viability of seeds (germination tests) Sowing seeds Identify, observe, record and report on the following: - stages of germination - seedling emergency by broadcasting -seedling emergency by row sowing -select viable seeds	The different ways seeds are sown in seed; boxes The steps involved in sowing seeds in seed boxes The types of germination	Aspects of the possible contributing factors for abnormal seedling growth The need to cover seeds after sowing; irrigating the soil and leaving it under shade	Appreciate the use of viable seeds Appreciate the advantages of following certain procedures for proper germination and growth of seedlings	Viability test Disadvantages of not using viable seeds Broadcast sowing and Row sowing Advantages of row sowing over broadcast sowing Covering seeds after sowing, irrigating and providing shade Quality of seeds used as planting materials Advantages of sowing treated seeds	Seed, woolen cloth School Garden Farm diary Sample of treated seeds (display) Samples of planting materials -- viable seeds - seeds with physical defects	Observe demonstration by teacher Assist in sowing seeds Supervised practice sessions Discussions on content Debate: Crop farmers must produce their own planting materials for maximum yield	Assess students' performance in the field	**Science** Germination and seed viability

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Flowering Plants External Structure of Monocotyledons and Dicotyledons (Cont'd)	Discuss and analyse the reports on seedling growth Identify advantages and disadvantages of row sowing over broadcast sowing	The stages of germination The conditions necessary for germination of seeds The characteristics of viable seeds The appearance of poor seed samples	The disadvantages and advantages of sowing treated The differences in the growth of seedlings established by sowing the following: Good sample of seeds Poor sample of seeds			Teachers' Field Books for assessment of skills displayed Practical notebooks			

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Hand Tools	Identify tools used for specific purposes Working on the farm Draw labeled line diagrams to show parts of different tools Apply correct techniques to operates simple tools Use tools correctly to avoid injure to self/others and damage to tools and plants Select appropriate tools and apply relevant techniques needed to complete a given task.	Hand tools used for: -Land preparation, -Nursery management, - Irrigation - Plant production - harvesting Techniques (step by step) for the proper usage of each tool	Use of appropriate tools and equipment; Application of correct techniques for effective use tools Use tools correctly (with right holey posture) Care tools to prevent rusting sharpen tools for effective performance	Tools are used correctly for specific purposes Standard Agri. Practices are carried out with care and caution Care and maintenance procedures are always practiced	Hand tools used for: - land preparation - nursery/ seed box preparation - irrigation - trans-planting - inter crop cultivation - crop protection - harves-ting	School farm plots hand tools. Charts to show: - parts of tools - steps to take in the proper use of tools	- examine tools - observe demonstrations on farm/plots - practise using the proper tools for specific purposes. -assist in ongoing farm activities. - collect pictures of various hand tools - visit to farms where these tools are in use	Identification of specific tools used for various farm activities Draw line diagrams used for stated purposes. Assessment of students performance in the field	**Industrial Arts** Sharpening metal blades, fixing and repairing simple machines and tools Repairing wooden handles

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Hand Tools (cont'd)		The maintenance of tools and equipment for long life			Tools must always be used for specific purposes and applying the correct techniques step by step Tools must always be cleaned, dried oiled/greased and stored in a safe place after use	Tools and equipment used on the school farm. Store room materials eg. oil, rags, files, soft wovel, saw, plane, clamo	Demonstrations using tools. Supervised practise sessions Assist in caring tools and equipment	Assess students performance in efficient handling of tools in an orderly manner Assess students' performance in caring and storing tools	**Physical Education** Displaying correct posture **Industrial Arts** Science Oxidation reaction

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	SKILLS	KNOWLEDGE	UNDERSTANDING	ATTITUDE					
Seed boxes/containers and sowing seeds	Select seed boxes/containers which are suitable for growing seedlings Select and use seed boxes/containers which have the correct dimensions, depth etc	Features of a good seed box/container (cups, polythene bags)	The importance of each feature for the growth of seedlings The relationship of the features of seed box (depth, slits/holes at the bottom of seed box) to the growth of seedlings	Appre-ciation of the importance of a handy seed box/ container which can satisfy the needs of various types of seedlings	Seed boxes/ containers must make provision for: - easy transplanting - drainage of excess water - sufficient depth for roots - control of the loss of soil	Seed boxes containers, nursery beds Charts to show the: - features of a typical seed box - various types of containers for sowing seeds	Examine a standard seed box (35cm x 25cmx7cm) and compare it with other seed boxes Grouping seed boxes/containers based on similarities or differences and needs	Assessment of students' - drawing of line diagrams of standard seed box - construction and use a seed box	**Mathematics** Check on dimensions of seed boxes/containers **Industrial Arts** Construction of seed boxes

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Seed boxes/containers and sowing seeds (cont'd)	Identify and mix materials for seed box/container mixture Demonstrate the technique of mixing potting mixing components for seed boxes/containers Identify a sample of good potting soil Predict the behaviour of potting soil in response to the application of water	The materials that are needed for seed box/container mixture The steps involved in preparing seed box/container mixture The ratio of different components used for preparing a potting mixture	The importance of producing vigorous healthy seedlings by providing adequate nutrients, aeration and moisture	Appreciation of the need to follow guidelines carefully, step by step until assignments are completed	Components of seed box/ containers : - garden soil -well rotted pen manure -sand Steps in the process of mixing different components and filling seed box/containers with potting mixture and leveling it in seed box/containers	Seed box/ containers components: - garden soil -well rotted pen manure -sand -straw -press board -appropriate tools Chart to show: - ratio of soil - compon-ents needed to make potting soil	Discussions Demonstrations Assist in preparing seed box/container	Assessment of students performance in selecting the components of potting mixture in the right proportions, mixing it up and filling the seed box with the mixture	**Science** Action of bacteria in the decomposition of raw pen manure and raw materials used to make compost Nitrogen cycle Porosity Capillarity

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Care of Seedlings	Identify signs of poor care of seedlings Identify signs of proper care of seedlings Identify the needs for growing seedlings Take corrective measures for defects observed Use farm diaries to record observations Report on observations recorded	The treatments that need to be taken in growing seedlings in seed boxes/containers/nurseries after seeds are set (sown) and before they are transplanted to seed beds The differences and similarities in the treatment of seedlings that are sown in seed boxes/nursery and those that are sown in the field	Seedlings need special care when they are in seed boxes/nurseries/containers and those requirements need to be met as and when they arise	A positive attitude to the care and maintenance of seedlings so as to have vigorous growth which is free from pest and diseases	Care of Seedlings Seedlings, need to: -be free from weed competition - have adequate moisture - have adequate nutrients for good growth - be free from pests and diseases; - have necessary shade initially and be removed gradually close to transplanting time (hardening of seedlings)	Field plots fertilizers, chemicals, sprayers For display: - seed box with a good stand of vigorous seedlings in competition with weeds; - seed box with seedlings growing on poorly prepared potting soil; - relevant charts, table - farm diaries	Observe seedlings growing in a nursery/seed box containers Observe seedlings growing in a field Discussions based on observations Assist in caring plants Record activities in farm diary Field trips	Assessment of students' farm diaries Assessment of students' work in the field	**Language Arts** Explaining the different needs for growth of seedlings **Science** Effect of chemical substances on plant growth **Mathematics** Determine adequate spacing for proper growth

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Care of Seedlings (cont'd)					Thin out weak lanky seedlings in the nursery Thin out excess seedlings in the field at planting holes leaving only one (1) strong, vigorous and healthy seedling in each hole		Students to compare and justify the growth of seedlings in each of the given seed boxes on display		

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Seed beds	Select a suitable site for seed beds Use compass to determine cardinal points	The conditions required in selecting a site for seed beds	The ideal conditions needed to locate a site for seed beds The suitability of various locations for constructing seed beds	Appreciate that suitable conditions are necessary for an ideal seed bed	Conditions necessary for locating a suitable site for preparation of seed beds are as follows: - High ground with well drained soil - Rich loamy soil - Soil free of obstacles - Soil free of pests and diseases - Site free from shade - Access to irrigation water		Observe of farm plots and other farms in the community to assess suitability of ideal location Discussions on the suitability of sites at various locations Demonstrations Physical participation by students	Assessment of group reports Assessment of student's performance in the field	**Ecology** Interaction of crops with soils, soil organisms, water etc

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Seed beds (cont'd)	Demonstrate the various steps involved in land preparation before establishing seed beds Measure and mark the length and width of seed beds with drains and pathways using measuring tapes, ruler, garden line and pegs Construct drains Incorporate well rotten pen manure	The various steps in land preparation before laying out seed beds The metric units for length The relationships between units of length The procedures involved in laying out a plot	The relationship between activities on land preparation to the growth of seedlings The importance of the right length and width of seed beds with emphasis on drainage in flat lands	Appreciation -That the proper initial growth of seedlings depends on the preparation of seed free soil with good crumb structure -For the layout and accurate measurement of seed beds -Of the importance of well rotten pen manure for the healthy growth of seedlings	Land preparation techniques: - weedling -forking/ ploughing - chipping/ harrowing - leveling Layout of seed beds using measuring tape, garden line and peg Importance of draining on flat lands	Field tools and equipment films, slides Measuring tape, garden line, pegs, shovel, rake A well prepared seed bed	Demonstration and discussion on the qualities of good seed beds Supervised group activities in the construction of seed beds	Assessment of students -Performance in land preparation -Calculation of the area of bed and number of seedlings, per bed	**Mathematics** Length, width and area

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Seed beds (cont'd)	Use a base-line to commence measuring activities Construct drains perpendicular to the baseline Estimating the number of seedlings to be transplanted on a given seed bed	The use of: - Standard measurements for the construction of seedbeds with drain - Initial fertilizer application on seedbeds Calculation of the number of seedlings required using area of seedbed and given spacing of seedlings	The comparison of the estimated number of seedlings with the calculated number of seedlings		Leveled seed beds incorporation of well rotted pen manure	Diagram to show the main aspects of a well prepared seed bed Teacher's field book for assessing students performance in the field	Demonstration on: The construction of drains with gradient The incorporation of pen manure The laying out seedbeds		

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Sowing/ Transplanting	Identify crops for which seeds are sown in seed boxes/nursery beds before being transplanted on seed beds Identify crops for which seeds are sown directly on seed beds Identify seedlings from plants that are in vegetative stage	Crops for which seeds are sown in seed boxes/nursery beds and later transplanted on seed beds Crops for which seeds are sown directly on seed boxes	Seeds of some crops need to be sown in seed boxes/nursery beds and then transplanted on seedbeds e.g. tomato, pak-choi, (small seeds) whereas seeds of other crops are sown directly on seedbeds e.g. corn, blackeye (large seeds)	Careful nurturing of small seedlings in seed boxes/nursery beds before transplanted onto seed beds	Definition of seedling Crops that should be sown in seed boxes/nursery beds and then transplanted on seedbeds Crops that are sown directly on seedbeds Reasons for sowing small seeds in seed boxes/nursery beds	Seed materials Seed boxes Nursery tools and equipment	Collecting crop seeds that should be sown on seed boxes/nursery beds Collecting crop seeds that are directly sown on seed beds Discussion on reasons for sowing seeds in seed boxes/nursery beds		**Science/Biology** External feature of a plant Physical structure of seeds

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Sowing/ Transplan-ting (cont'd)	Locate planting holes on seed beds based on recommended spacing Incorporate pen manure/fertilizer in planting holes Transplant seedling on seed beds Irrigate after transplanting Plant large seeds on seed beds	The steps involved in transplanting seedlings on seed beds and sowing/planting seeds on seed beds The importance of correct spacing The importance of safely uproot-ing seedlings from seed boxes/nursery beds for transplanting in the field	The need to identify accurately the planting holes The importance of plant nutrients for vigorous growth of seedlings	Careful uproot -ing of seedlings from seed boxes/nurser y beds for transplanting in the field Incorporates pen manure and composts to planting holes	Recommended spacing for different plants Incorporation of well rotten pen manure to planting holes/seed beds Uprooting seedlings from seed boxes/nursery beds and transplanting on seed beds Planting seeds directly on seed beds e.g. bora Row sowing seeds on seed beds e.g. carrots	School garden tools for sowing and transplanting	Observe demonstration of sowing and transplanting by teacher Students involvement in performing different skills Discussions on observations	Assessment of students' performance in sowing/ transplanting	**Mathematics** Spacing between plants and depth of planting seedling/sowi ng seeds

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Caring Plants – Weeding, watering (Irrigation), Mulching	Recognize weeds found on school farm, and in the community Identify, collect and press few common weeds and maintain a weed album Carry out control of weeds by: - hand pulling - use of cutlass/hoe - using much Demonstrate the different ways of watering plants Demonstrate how to remove excess surface water and water in soils with high water table	The differences in growth of crops on a field infested with weeds as against those fields free of weeds Reasons for removing weeds from seed beds and surrounding areas The common weeds found on school farm and in the community Ways of controlling weeds	Proper growth of crops depend on weed free conditions especially during early stages in crop growth	Taking care of plants by weeding, watering and mulching	Definition of the term weed Disadvantages of weeds Harbour pest and diseases Competition for water, nutrients, sunlight and space Decrease yield of crops and increase cost of cultivation Untidy appearance of weeds	Hand forks Press board Weed album	Naming some weeds and identifying their major features Collecting samples of weeds and pressing them on paper Techniques for weeding. Display of various types of weeds	Assessment of pressed specimens Assessment of students' performance on weeding	**Biology** Weeds, their external features and habitat

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Caring Plants – Weeding, watering (Irrigation), Mulching (cont'd)	Demonstrate different ways of watering plants Demonstrate how to remove excess surface water and water in soils with high water table	The need for irrigation Methods of watering plants The effects of inadequate water on plants The effects of surface water/soil with high water table on plants The advantages and disadvantages of irrigation and drainage	Inadequate water supply retards plant growth and excess water kills the plants		Definition of the terms: - irrigation - drainage Results of negative effects of inadequate water on plants: -stunted growth - nutrient uptake impeded - extreme condition result in wilting - decease in yield	Irrigation tools	Discussion Field trips Construct ion of drain to remove excess water	Assessment of practical demonstration on watering	**Mathematics** Gradient of drains

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Caring Plants – Weeding, watering (Irrigation), Mulching (cont'd)	Demonstrate mulching the plots using paddy husk/dried grass/dried leaves/paper Reading and reporting observation on the growth and yield with unmulched plot	The benefits of mulching Materials suitable for mulching Mulching has several advantages to the growth of plants	Mulching improves plant growth in many ways The importance of selecting the best mulching		Excess water results in water logging and eventually plant death Enhancing rainfall infiltration Preventing weed growth Reducing the soil temperature Reducing evaporation of water from soil Conserve moisture	Different types of mulches	Discuss and compare the growth and yield of crops from mulched plots	Assessment of practical demonstration of mulching	**Geography** Fertile soils **Social Studies** Enhancing the environment **Science** Decomposition of organic matter

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Caring Plants – Pest and Pest Control	Identify some insect pests of tomato, corn, black-eye, pak -choi & cassava found in your school garden Use hand lens to identify pests Identify some damages caused by those insects pests Carry out different control experiments to investigate the effects of pests Identify chemicals that could be used to control those pest	The major insects pests for each crop listed below: -corn - tomato - blackeye - cassava Physical and chemical control of insect pests and diseases Chemicals that can be used to control insect pests Haphazard use of chemicals on crop plants	Some insects are harmful while other are beneficial Harmful insects need to be controlled before they cause serious damage to crops The harmful effects of using chemicals to control pests Plant diseases can be identified by specific symptoms	Appreciates that rops free of pests produce a higher yield of unblemished produce compared with pests affected crops Cares crops while they are growing to keep pests away from them	Use of decomposed mulch to improve soil structure and increase availability of nutrients Definition of the term Pest Major insect pest of corn, tomato, blackeye, pak-choi and cassava Damage caused by those pests Symptoms by which to identify those pests	Hand lens growing crops in the field List of information on pests for plants	Careful observation of crops for pests in the field Demonstration to identify pests and use timely control measures Demonstration in carrying out control measures Discussion on pests and pest control	Assessment of students in the field and laboratory exercises	**Biology** External parts of an insect, its habits and habitants **Art** Drawing of insects **Language Arts** Essay on harmful effects of chemicals in pest control **Environmental Science** Pollution **Mathematics** Volume calibration

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Caring Plants – Pest and Pest Control (con't)	Identify pest other than insects Identify major diseases of crops in corn, tomato, blackeye, pak-choi and cassava	Harmful effects of haphazard use of chemicals on crop plants Pests of crops other than insects Major diseases of the following crops. corn, tomato, blackeye, pak-choi and cassava Symptoms by which diseases can be identified	Pest control measures need to be put in place at the earliest opportunity	Appreciate precautions for pest control Appreciate the importance of disease free plants Identifies disease symptoms early to avoid losses	Harmful effects caused by haphazard use of chemicals in pest control Chemicals which: - are toxic to animals and human beings -pollute the environment. - destroy pollinators, parasites and predators				

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Caring Plants – Pest and Pest Control (con't)					Definition of the term Disease Disease – affecting corn, tomato, blackeye, pak-choi and cassava Symptoms by which one could identify those diseases Methods of disease control Major diseases which affect the crops listed above				

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Cropping Systems	Identify cropping systems in use on farms Identify crops used in the cropping programmes Distinguish between systems which promote care of environment and those which do not	The different types of cropping systems The characteristic features of each cropping systems The advantages and disadvantages of the given cropping systems	The importance of cropping systems for the: - Care of the environment and - Control of pests and diseases	Supports efforts to implement systems which sustain the environment Question the use of systems which promote deterioration of the environment	Cropping systems Planting several crops Crop rotation Inter planting Planting one crop Monculture Monocropping Planting several crops at time results in better ; -control of weeds, pests and diseases - regulation of nutrients present in the soil	School/farm plot Farming in the community Word Puzzle	Observe school/farm plot and other farming enterprises in the community Discussion of cropping systems Completion of a word puzzle. Matching		**Science** -pollution -erosion -soil nutrients

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Cropping Systems (con't)					Reduction of surface run off water Planting only one-one crop makes greater demand on nutrients present in the soil and the control of pests and diseases is more difficult				

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Harvesting	Identify the part of the plant to be harvested Select appropriate tools Carry out harvesting procedures Apply simple post harvesting techniques	Names of crops to be harvested Harvesting procedures to be followed for each crop Post-harvesting techniques	Harvesting and post-harvesting techniques The relationship of the post harvest principal to the natural environment	Appreciate the need for timeliness in activities related to harvesting and post-harvesting	The harvesting process: -Selection of the correct equipment -Separate without damage to fruit or plant -Place gently in container. Different parts of plants that are harvested - roots - stems - leaves - fruits	Appropriate harvesting tools Containers	Examine crop to determine stage of growth Discuss the suitability of tools selected Observe demonstrations of harvesting Assist in harvesting activities	Assessment of students' -record of activities in their farm diaries Reports of observations	**Social Studies** Manual and mechanical methods of harvesting Technology/Distribution of manual labour **Science** Structure of Leaves Flowers Fruits Stems Roots

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Marketing	Perform tasks associated with marketing of the produce Report the findings from a marketing survey	Various activities which may be performed on a product before it reaches the consumer Improving the image of the products	Use available information to understand the principles of marketing. Compare marketing services and prices of selected agricultural products found in Supermarkets and open markets	Appreciate the need for improving and maintaining the quality of product available for the consumer	Use of colour and size can be used to indicate stage of maturity Marketing the produce to be seen as all the activities carried out on the produce until it reaches the consumer Involves: - handling - cleaning - grading - packing - storing - transporting - processing - selling	Marketing outlets Audio Video Cassettes Relevant newspaper clippings Resource Persons	Observing treatment of produce after harvesting Discussion with farmers on how they market their produce Participating in some of the activities carried out on school farms Small groups carry out a marketing survey	Assessment of student s' -Records of activities in farm diaries -Selection of a marketing outlet and preparation of a brief report	**Social Studies** Domestic markets Regional and International Markets Trade Budget

STRUCTURE

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Poultry In Guyana	Identify the different classes of poultry in Guyana Identify other birds in Guyana Explore the different classes of poultry found in Guyana	Definition of the term Poultry The different classes of poultry The features of the different classes of poultry Birds found in Guyana	The contrasting features among classes of poultry	Appreciate the need to make conditions suitable for sustaining the life of all kinds of birds	Poultry found in a) Fowls b) Ducks c) Geese d) Turkeys e) Guinea Fowls In relation to the animal kingdom poultry is being classified as bird Many other birds are found in Guyana, that have attracted the international market	Zoological garden Pictures Labels Tapes The community Resource materials Text Books Agricultural Science for Secondary School in Guyana BK. 1 Pages 14-115	Observe poultry Observation of birds in a zoological garden and the community Discussion on classes of poultry Interviews with farmers and wild life exporters	Assessment of students: -Research on a selected variety of birds found in Guyana -Report on observations after visits/field trips -Scrapbook on poultry in Guyana	**Language Arts** Description of poultry **Social Studies** Use of poultry in society

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External Parts of a Bird	Drawing the external parts of a Bird Label the external parts of a Bird Note taking Predict the outcome if any given part is deformed or absent	The external parts of the bird The functions of the external parts of the Bird	The importance of each external part on the normal life of the Bird	Appreciate the need to know: the external part of the bird by its correct name	Name and function of the external parts of the bird e.g. neck, shank, etc	Visit place of interest e.g. zoological garden Pictures Audio-video cassettes Visits to Poultry Farms in the community School Poultry Farms Prepared poultry specimens	Observation Discussion of structure and function of external parts of the bird Collection of Pictures Laboratory demonstration	Assessment of students' drawings and labelling of the external part of the bird	**Art & Craft** Drawing and labelling **Language Arts** Description of the external parts of the bird

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Classes of Poultry in Guyana	Identif **the** most popular class of birds which is being sold at the market Observation and discussion on poultry rearing in the community	Name the most popular class of bird which is being sold at the market	The different features of poultry in Guyana	Appreciate the importance of the different classes of poultry found in Guyana	Classes of Poultry in Guyana -chicken - ducks - geese - turkeys - guinea fowlers Agricultural Science for Secondary School in Guyana. Pages 114-115.	Visits to places of interest e.g. Zoological gardens	Observation of poultry in Guyana. Community Zoological garden Discussion of Audio-Video cassettes Interviews with Farmers Interview with Wildlife Traders	Assessment of students': -Research on the classes of birds found in Guyana -Report on visits -Scrap books on birds found in Guyana	**Language Arts** Written description of classes of birds found in Guyana

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Breed of Fowls	Recognise breeds of fowls reared in Guyana Identify some of the birds used in the wild life trade	The breeds of fowls reared in Guyana The characteristics of different types of fowls The characteristics of some birds found in the interior	Some human activities contribute to the extinction of various species of Birds	Appreciate the contribution of different breeds to the diversity in the population of Birds	Breeds of fowls refer to inherited characteristics which distinguish one fowl from another Breeds of fowls include: -Dual Purpose - Creole - Rhode Island Red Breeds for the Wild Life Trade include: - Parrots and Macaw	School farm/poultry pen School farm/poultry pen Farms in the community Audio-Video Cassettes Television Resource persons	Observations of fowls and animals on farms in the community Visits to the zoo Discussion and reporting on observations after visits	Assessment of students' reports on observations and discussions Scrap book. On breeds of fowls Report on interviews with farmers	**Language Arts** Description of observations Reports of interviews

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Systems of Rearing Poultry	Identify each system for rearing poultry Sketch each system and explain how each functions	The three (3) systems used to rear poultry in Guyana The function of each system	Why poultry is reared in various systems	Appreciate the methods use to rear poultry in Guyana	Systems of rearing poultry in Guyana: - free range extension system - intensive system - semi-intensive system	Chicken farms in the community Other school children's farm Audio-Video cassettes Pictures of the systems used to rear poultry Agriculture Science for Secondary School in Guyana BK 1 p 116-116	Observation of system used for rearing poultry Discussion of systems used for rearing poultry Reporting Interviews with farmers	Assessing students' -Description of the systems of rearing poultry in Guyana Drawing of the systems used for caring poultry in Guyana	**Language Arts** Description of the systems used to rear poultry in Guyana Description of why people rear poultry **Art & Craft** Sketch systems used for rearing poultry

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Data Collection	Identify the different types of inventory seen on the farm Analyse various farmer records Examine the inventory and note stock changes	The various assets found on the school farm: - tools - feeds - crops - livestock, etc Reasons for keeping records Movable and immovable assets located on the farm	Farmers and managers use of records to make judgements and predictions	Appreciate the importance of keeping records on tools, feeds, livestock etc	Records provide information which the farmer uses for making sound decisions about management The inventory: The inventory is a record of assets held: - tools - chemicals - feeds - crops - buildings etc	Textbooks, inventory forms, samples of records School farm/plots A guide to School Based Assessment in Agricultural Science	Examining records Interviewing farmers Demonstration of analysis of records	Assessment of students': -Record of selected assets found on the school farm. Report on the importance of records to farmers and managers	**Language Arts** Records and reports of farming inventory

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Plant Propagation Records	Identify propagation records Keep simple records of selected crops propagated on the school farm/plot Examine various plant propagation records to determine if they can be used to make predictions and judgements	The purposes for keeping a record of crops prograted on the farm: - in the field - in the nursery	The importance of plant propagation records used on the school, farm, nursery crop, farm or estate	Appreciate the need to collect information for use in making decisions on the farm	Propagation record show all the activities undertaken by the farmer in propagating crops and include information on: - name of crop - type of crop - variety - date sown - date germinated - date transplanted - number of beds sown - cultural treatments - chemical treatments - remarks	Samples of records Plant propagation nurseries Examples of formats for plant propagation records approved by CXC (See a Guide to School Based Assessment in Agricultural Science)	Examination of sample of records Visits to plant propagation nurseries Collecting information from records	Assessment of students' design of a format for a propagation record and its use to gather information on a selected crop	**Science** Scientific principles of observing, recording, reporting and evaluating

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Farm Diary	Record entries in a farm diary, using the acceptable format Predict the level of farming activities based on information obtained from farm diaries		The importance of a farm diary in recording practical agricultural activities	Appreciate the need to collect information for use in planning and decision making	Farm diary The personal day to day record of farming activities in which students are involved, coupled with pertinent comments in relation to these activities Entries in the farm diary include: - livestock activities; - crop and soil activities; - field trip; - laboratory work; - observations and comments	School farm/plot Places of agricultural interest Agricultural text books Samples of Farm Diaries A Guide to School Base Assessment in Agricultural Science	Field trips to farms and places where agricultural related activities are performed Lecture/demonstration Discussions Group work	Assessment of students': -Farm diary using the given format Recording in the farm diary (at least once per week) Attention to: - data collection; - presentation; - interpretation	**Social Studies** Keeping diaries of important activities and events **Science** Scientific principles of experimenting, observing, recording, Reporting and evaluating **Language Arts** Description of a farm diary

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History of Agriculture	Recognise activities which are harmful to the environment Select pictures portraying activities which are harmful and those which are friendly to the environment Arrange pictures to show the stages of agricultural development	The History of Agriculture in Guyana Agricultural activities which are harmful to environment and those which are useful	The history of agriculture, in view of present and technological development in the world	Appreciate the need to promote environmentally safe practices	History of Agriculture Hunting and gathering Shifting cultivation and nomadic farming Domestication of animals and cash-crop production	School farms/plots enterprises, etc. - audio cassette - pictures - posters -video cassettes - slide projectors	Visits to places of interest. Listening audio visual cassettes. Collect information from the following: - television programmes on related topics - radio programmes - relevant clippings - group discussion - panel discussion	Assessment of students' Drawing of a flow chart with accompanying pictures Scrap boom using clippings collected (group work)	**Social Studies** Nomadic farming **Geography** Map to show where agriculture started **Science** Animals and plants **Language Arts** Description on the History of Agriculture in Guyana

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History of Agriculture (cont'd)	Identify activities which are safe for the environment Explore information on Commercial Agriculture and the modern inventions that influence their activities	The events which led to the present level of development of Agriculture in Guyana Modern inventions associated with Commercial Agricultural activities	The contribution of technology to the changes in agricultural practices	Appreciates the historical development of Agriculture in Guyana	Commercial Agriculture and introduction of: - mechanical power - chemical fertilizer s and pesticides - pest management - biological control of pests - improved varieties of crops - improved breeds				

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Importance of Agriculture	Observe and record signs of a deteriorating environment Observe and record signs of caring for the environment Observe and record practices which lead to deterioration of the environment	Definition of agriculture The contributions made by agriculture to the development of Guyana A deteriorating environment A perfect environment Substances that can contribute to deterioration of the environment	How agriculture contributes to a better life How the use of some substances contributes to the deterioration of the environment	Support efforts to maintain a healthy and attractive surrounding Demonstrate concern for deteriorating environments Demonstrate willingness to reduce/eliminate practices which lead to deterioration of the environment	The effects of Agriculture: - Satisfy basic needs - Earn foreign exchange - Satisfies some employment needs -Contribute to the deterioration of environment -Enhances the natural environment	Picture chart Scrap book Newspaper clippings, etc. Local community (school)	Discussion on scrapbooks Newspaper clippings, picture charts, etc Observe agriculture activities in the community Field Trips	Assessment of students' research on: How Agriculture contribute to the life of your family and others in the community	**Social Studies** -Pollution - Erosion - Deforestation **Science** Destruction of the eco-system Introduction of new species of plants and animals **Geography** Land uses **Language Arts** Essay writing on importance of Agriculture