

TOPIC	LEARNING OBJECTIVES				CONTENT	MATERIALS	METHOD/ STRATEGIES	EVALUATION	AREA(S) OF INTEGRATION
	SKILLS	KNOWLEDGE	UNDERSTANDING	ATTITUDE					
<b>Record Keeping/ Farm Records</b>	<p>Store and handle records carefully</p> <p>Record data of transaction as soon as they occur</p> <p>Present a written and an oral report of farm records</p>	<p>Definition of "farm record"</p> <p>Uses of farm records</p>	The importance of farm records	Appreciate keeping neat and accurate records	<p>Definition: A farm record is written information on inputs and outputs of the farm</p> <p>Reason for farm records: -Operations can be examined in each unit and the right decisions made for financial success</p>	<p>Text books Agricultural Science for Secondary Schools in Guyana Bk. 2 pp 96-99</p> <p>Agricultural Science by Elliot and Wolseg. Pp: 67-77</p> <p>Junior Secondary Agriculture for the Caribbean Bk. 3 pp 189-190.</p>	<p>Teacher led discussion and brainstorming on farm records</p> <p>Note taking and preparing reports</p> <p>Visiting farms and examining available records for accuracy and neatness</p>	<p>Assessment of each students' - definition of farm record</p> <p>-farm diary/practical notebook</p> <p>- explanation of importance of farm records</p>	<p><b>Language Arts</b></p> <p>Written and oral expression on the importance of farm records</p>

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Record Keeping/ Farm Records (cont'd)					<ul style="list-style-type: none"> <li>- A reliable reference for planning and budgeting</li> <li>-Help in the assessment of strengths and weaknesses</li> <li>-Useful for the acquisition of loans</li> </ul>				Language Arts

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<b>Record Keeping/ Farm Records (cont'd)</b>	Recognize farm records and use them correctly  Identify incorrect entries made on a given farm record	The different types of farm records  Farm situations which require keeping farm records  The need for keeping each type of farm record		Keeping of accurate records of each project/transaction	Types of farm records  Financial or Accounting records provide farmers with realistic information on the current financial status of the whole farm or individual units e.g. (a) Profit and Loss Accounts (b) An inventory	Samples of farm records.  Case studies  Resource persons  Work sheets	Observation of farm records for similarities and differences  Interviewing resource personnel  Identification of records from data given	Assessment on students' : - Identification of different types of farm records  - Matching the use with the types of record  - Using each farm record as a means of identification	

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<b>Record Keeping/ Farm Records (cont'd)</b>	<p>Analyse data recorded in a given record</p> <p>Use data recorded to prepare budgets</p> <p>Use data recorded to make predictions</p>				<p>Production Records: - crop production - livestock production (i) Breeding record of pigs (ii) Egg production</p> <p>Farm diary</p> <p>The budget and reasons for preparing it</p>	Specimens of budgets	Examination of budget records		

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<b>Record Keeping /Farm Records (cont'd)</b>	<p>Prepare simple farm records</p> <p>Prepare an inventory for the school farm</p> <p>Record transactions promptly in journals</p> <p>Combining component parts of farm records</p> <p>Predict the outcome of a farm enterprise from its records</p>	<p>The steps involved the preparation of each farm record</p> <p>The recommended format for specific farm records – e.g. the complete budget.</p> <p>The relevant data for preparing a budget</p>	<p>The calculation of profit and loss</p> <p>The correction of mistakes in a farm record</p> <p>The completion of farm records using simple data</p> <p>The use of relevant data from the journal and other records to prepare the budget</p>	<p>Willingness to prepare farm records</p> <p>Willingness to keep neat and accurate farm records</p> <p>Work effectively on individual or group presentations on record preparations on the preparation of farm records</p>	<p>Formats for preparation of:</p> <p>- profit and loss account</p> <p>- an inventory</p> <p>-production record</p> <p>- crop production</p> <p>-egg production</p> <p>A budget: Steps in</p> <p>Preparation 1. Start early – work out inputs needed</p>	<p>Samples of: - profit and loss accounts</p> <p>- school/farm inventories</p> <p>- textbooks with relevant information</p> <p>- specimens of the budget</p>	<p>Demonstrations in the preparation of:</p> <p>-the profit and loss account</p> <p>- school farm inventory and production records</p> <p>Demonstration on the preparation of a budget</p>	<p>Assessment of students':</p> <p>- Preparation of farm records</p> <p>- Making judgments about farm records and giving reasons</p>	<p><b>Mathematics</b></p> <p>Calculating profit and loss</p> <p>Predicting outcomes</p>

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<b>Record Keeping/ Farm Records (cont'd)</b>			-Use relevant data from the journal and other records to prepare the budget.	Appreciate the need to collect information for use in decision-making	<p>2. Estimating all costs and returns:</p> <p>(a) Write down the costs of inputs, estimate rather high than low</p> <p>(b) Write down all expected returns, estimate low rather than high</p> <p>Add up all estimated costs</p> <p>Total up the estimated returns</p> <p>3. Calculate the figures as accurately as possible and enter in budget format</p>				

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<b>Record Keeping/ Farm Records (cont'd)</b>	Post data recorded in journals to the correct record			Appreciate the importance of accuracy in recording data on farm records			Group presentation of questions and answers prepared by participants:  - teacher led discussion  - teacher observes students' at work	Assessment of group presentation of samples of farm records for exhibition in the classroom.	

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<b>Record Keeping – Basic Farm Records and their usefulness</b>	<p>Identify various types of records kept on the school farms or commercial agricultural entities</p> <p>Record and report in the farm diary using the recommended format</p> <p>Update existing farm inventories and make new inventories where applicable</p>	<p>The various types of records kept on a farm and agricultural enterprises</p> <p>Reviewing farm diary inventories as important farm records</p>	<p>The importance of farm records for present and future agricultural activities and investments</p> <p>The importance of using the correct format to produce various types of farm records</p>	<p>Appreciate the need to collect, record and present data neatly, accurately and in useful acceptable and correct formats</p>	<p>Basic farm records: <b>PRODCUTION RECORDS</b></p> <p>-Crop production - Plant propagation - Orchard crop record -Livestock production -Breeding record</p> <p>Farm outputs are measured in terms of yield: Quantity and quality. The production records of a farm help the farmer to determine the performance of his/her livestock or level of production on the crop farm</p>	<p>Agricultural Science for Secondary Schools in Guyana:</p> <p>Book 1 pp. 99 &amp; 100 Book 2 ch. 4 Book 3 ch. 10pp 208-212</p> <p>Caribbean Agricultural Science by A.I. Henry Book 2 second edition ch. 14 pp. 191-200</p> <p>Specimens of basic farm records</p>	<p>Visits to school farms, Practical Instruction Centers and Commercial farms</p> <p>Revision of record keeping lessons done in Level 7, i.e. on the importance of record keeping, farm diary and farm inventory</p> <p>Use knowledge on data collection, presentation of data and interpretation of data to make systematic day-to-day entries in a farm diary</p>	<p>Assessment of students' report outlining the importance of using farm records to determine the level of performance of an agricultural enterprise/farm as well as for making plans and predictions</p>	<p><b>Science</b></p> <p>- Scientific skills:</p> <p>Experimenting Observing Planning Recording Predicting Analyzing Discussing Reporting</p> <p><b>Social Studies</b></p> <p>Keeping diaries of important activities and events</p> <p><b>Home Economics</b></p> <p>Managing Money and budgeting</p>

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<b>Record Keeping – Basic Farm Records and their usefulness (cont’d)</b>	Categorize given farm records according to their respective groups  Interpret data based on observations recorded in the farm diary  Re-examine the farm inventories available and note stock changes	Examples of: -Vegetable production, -Broiler production -Income and expenditure records			<b>FINANCIAL OR ACCOUNTS RECORDS</b>  - Profit and Loss Account - Monthly cash flow - Cumulative cash flow - Sales -Complete budget - Partial budget  All farm resources must be organized and utilized in the best possible way to realize a profit	CXC’s recommended Farm Records formats found in “A Guide to School Based Assessment in Agricultural Science for CXC”  Agricultural Science for Caribbean 3 by Ralph Persad Ch. 14 The Business farms other Agricultural Text Book	Recording and reporting practical day-to-day activities on the school farm  Revision of work done on keeping of farm diary in Level 7  Inventorise tools and equipment in the agricultural department at your school  Inventorise other assets found on another school farm or Practical Agricultural Center		<b>Business Education</b>  - Assets - Inventory - Depreciation - Budgets

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Record Keeping – Basic Farm Records and their usefulness (cont'd)					Accounting and budgeting are essentials of a farmer's production program  Accounts or Financial records provide farm managers with realistic information on the current financial status of the whole farm and individual units				

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Record Keeping – Basic Farm Records and their usefulness (cont'd)					<p><b>LABOUR</b></p> <ul style="list-style-type: none"> <li>- wages</li> <li>- weekly time sheet</li> <li>- individual labour record</li> </ul> <p><b>-INVENTOR-IES</b></p> <p><b>- FARM DIARY OR FARM LOG BOOK</b></p> <p><b>BREEDING RECORD</b></p> <p>A breeding record is a special type of production record, which is kept on animals that are used for breeding</p>			<p>Reproduce correct formats for a vegetable production, crop production and income and expenses record</p> <p>Use data from the School farm or practical Instruction Center to make recordings in these formats</p>	

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<b>Swine: Terms and Definitions</b>	Identify the different types of swine  Recording and reporting observations of different types of swine	Terms used in swine production		Appreciate the need to use the correct terms and definitions that are used in swine production	Terms and definitions e.g. 1. Boar- male mature hog  2. Gilt female pig, which has not yet produced piglet etc.  3. Sow  4. Barrow  5. Piglets  6. Weavers  7. Fatteners	Photographs of different types of swine  Video-cassette with recorded information on swine activities  Questionnaires for conducting interviews with farmers	Observing photographs of the different types of swine  Discussion of observations  Video/T.V presentations  Collecting photograph and pictures  Compile scrapbook on different types of swine  Field trips to farms  Select the correct terms and definitions to complete the blank, which occur in sentences  Match terms associated with correct definitions	Assessment of students': -Report and record of observations	<b>Language Arts</b>  Description of different types of swine

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<b>Swine: The external parts of the pig</b>	<p>Identify swine</p> <p>Identify the external parts of a pig</p> <p>Identify body positions of a pig</p> <p>Draw and recognize the external parts of a pig</p>	<p>Definition of "swine"</p> <p>The external parts of the pig</p> <p>The functions of each external part of the pig</p> <p>The position in which each external part of the pig is located</p>	<p>The importance of each external part of the pig</p>	<p>Appreciate the need to give precise descriptions on the location of external parts of the pig</p>	<p>Definition of "swine"</p> <p>Draw and label the external parts of the pig</p> <p>Body positions: - dorsal - ventral - lateral - anterior - posterior</p>	<p>Places of interest e.g. zoo</p> <p>Pigsty in the community</p> <p>Video tapes</p> <p>T.V.</p> <p>Students compile a scrapbook on the pig</p> <p>Agricultural Science for Secondary Schools in Guyana BK 3</p> <p>Chart to show the basic body positions</p>	<p>Observation of swine</p> <p>Group discussion on observations</p> <p>Teachers presentation</p> <p>Report on observations and discussions</p>	<p>Assessment of students drawing and labelling of the external parts of the swine</p>	<p><b>Language Arts</b></p> <p>Description of the pig</p> <p><b>Social Studies</b></p> <p>Uses of the pig</p> <p><b>Art &amp; Craft</b></p> <p>Drawing and labelling</p>

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<b>Swine: The external parts of the pig (cont'd)</b>	Recording and reporting observations of swine  The use of pork product	The origin of swine  Domestication of swine in Guyana  Pork products on the market  The use of pork products	The advantages and disadvantages of rearing swine	Appreciate the importance of rearing swine in Guyana	Origin and domestication of swine production in Guyana  The proportion (about 20%) of the farming population of Guyana that rear swine for marketing purposes	Photographs of swine  Film strip and slides  Agricultural Science for the Caribbean Bk. 2 Page 100  Labels of pork products	Observation of pig farms  Viewing Audio- Visual cassette on pig farming  Discussion of observations  Handouts  Research  Field trip visits to the market/ supermarkets	Assessment of students': -Collections of photographs and contents  -Scrap books on "swine and pork products"	<b>Language Arts</b>  Written expression of advantages and disadvantages of swine  <b>Home Economics</b>  Use of pork products

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<b>Draw and label the Pig</b>	<p>Identify the external parts of a pig</p> <p>Identify features of healthy animals</p> <p>Identify features of sick animals</p>	<p>The external parts of pig e.g. ear, poll, hind flank etc.,</p> <p>The features of: - healthy animals - sick animals</p>	<p>The relationship between:</p> <p>-The external parts of the pig and their functions</p> <p>-The external parts of the pig to their position on body e.g. the loin is dorsally positioned</p>	<p>Appreciate the need to name the external parts correctly</p>	<p>1. External parts of a pig:</p> <ol style="list-style-type: none"> <li>1. Ear</li> <li>2. Poll</li> <li>3. Neck</li> <li>4. Shoulder</li> <li>5. Back</li> <li>6. Loin</li> <li>7. Rump</li> <li>8. Ham</li> <li>9. Hind leg</li> <li>10. Side etc</li> </ol>	<p>Video cassettes on pigs.</p> <p>Drawing of pigs showing body positions: - dorsal - ventral - interior - posterior - anterior</p> <p>Charts showing other parts e.g. neck, flank etc.</p>	<p>Observation of external parts of a pig</p> <p>Discussion of observations</p> <p>Collection of features and clippings</p> <p>Interview with farmers</p> <p>Drawing and labelling the diagram of a pig</p>	<p>Assessment of students':</p> <p>- Labelling of the external parts of a pig</p> <p>-Matching the external parts of the pig to the position on the body</p>	<p><b>Language Arts</b></p> <p><b>Art</b></p> <p>Drawing and labelling</p>

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<b>Types of Swine</b>	<p>Identify the types of swine reared in Guyana and the Caribbean</p> <p>Recognise some of the differences and similarities in the external features of the types of swine reared in Guyana and the Caribbean</p>	<p>The different types of swine in Guyana and the Caribbean</p> <p>The features associated with each type of swine reared in Guyana and the Caribbean</p> <p>The differences and similarities in the external features of types of swine reared in Guyana and the Caribbean</p> <p>The need to select the appropriate type for the purpose reared</p>	<p>The differences and similarities of rearing swine in Guyana and in the Caribbean</p>	<p>Appreciate the diversity of swine reared in Guyana and the Caribbean</p>	<p>Types of swine in Guyana and Caribbean:</p> <p>Meat</p> <ol style="list-style-type: none"> <li>1. Hampshire</li> <li>2. Berkshire</li> <li>3. Duroc/ Jersey</li> <li>4. Poland chind Dual Purpose</li> </ol> <p>1. British Saddle back</p> <p>2. Large black</p> <p>3. Bacon</p> <p>4. Tamworth</p> <p>Landrace</p>	<p>Video Cassette</p> <p>School and community farms</p> <p>Resource persons from the local farms</p> <p>Agricultural Science for Secondary Schools in Guyana</p> <p>Pages 100 to 101</p>	<p>Observing swine on school and community farms</p> <p>Interview with resource persons</p> <p>Collect pictures on types of swine</p> <p>Compile a scrapbook of swine reared in Guyana</p>	<p>Assessment of students' reports on:</p> <p>The types of swine reared in Guyana and the Caribbean</p> <p>The differences and similarities of each type swine</p>	<p><b>Language Arts</b></p> <p>Report writing</p> <p><b>Social Studies</b></p> <p>Types and uses of swine in Guyana and the Caribbean</p>

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<b>Breeds of Swine Reared in Guyana and the Caribbean</b>	Identify breeds of swine reared in Guyana and the Caribbean	The breeds of swine reared in Guyana and the Caribbean  The characteristics of the different breeds found in Guyana and the Caribbean  The demand for the different breeds of swine reared in Guyana and the Caribbean	The differences of the different breeds of swine found in Guyana and the Caribbean	Appreciate the value and use of the different breeds of swine reared in Guyana and the Caribbean	Breeds refer to inherited characteristics which distinguish one animal from another of the same kind	School farm and farms in the community  Video cassettes  Resource persons  Agricultural Science for Secondary Schools in Guyana BK 2 page 100-103	Observation of Swine on farms  Group discussion about observations of swine  Video Cassettes  Collecting pictures  Interviews with farmers	Assessment on students' report on the breeds of swine in Guyana and the Caribbean	

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<b>Types of housing for swine</b>	<p>Recognise the characteristic features of swine houses</p> <p>Identify the different types of houses for swine</p>	<p>The characteristic features of a swine house</p> <p>The importance of these features in building houses for swine</p>	<p>The need for consideration to be given to the type of swine to be reared and the purpose for which they are reared when constructing houses for swine</p>	<p>Appreciate the change in landscape when buildings are erected</p>	<p>Factors to consider when constructing housing for swine:</p> <ul style="list-style-type: none"> <li>-Adequate warmth for pigs</li> <li>- Comfortable sleeping and resting quarters</li> <li>- Adequate space for field and water etc</li> <li>- Proper sanitation</li> <li>- Site on which the house is constructed etc</li> </ul>	<p>Swine pens at schools and in the community</p> <p>Resource persons in swine production</p> <p>Agricultural For Secondary Schools in Guyana Bk. 2 pages 105-107</p>	<p>Observations of swine houses on visits to farms</p> <p>Discussions of observations of swine houses</p> <p>Interviews with farmers</p> <p>Reporting on resource persons and persons interviewed</p> <p>Compiling and display of information on swine houses</p>	<p>Assessment on students' reports the:</p> <ul style="list-style-type: none"> <li>-Factors to consider when designing swine houses</li> <li>- Importance of these factors for building houses for swine</li> </ul>	<p><b>English Language</b></p> <p>Report writing</p> <p><b>Technical Drawing</b></p> <p>Design of Swine houses</p>

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<b>Management of Swine at different Stages</b>	Identify the different stages of swine management	<p>The management practices at every stage of swine management e.g. Farrowing</p> <p>The differences of management at every stage</p> <p>The types of feeds</p> <p>The nutrient content of each type</p>	<p>The important stages of swine management</p> <p>The importance of each type of feed in the ration</p>	Appreciate the need to treat animals according to their needs	<p>Management of swine</p> <p>(a) Farrowing</p> <p>(b) Weaning</p> <p>(c) Fattening</p> <p>(d) Breeding sows/gilt boar e.g.</p> <p>Management at farrowing</p> <p>1. Administering of error injection</p> <p>2. Brooding</p> <p>3. Cutting and disinfecting of manual cord</p> <p>Clipping of needle teeth</p>	<p>Video tapes</p> <p>Resource persons</p> <p>Interviews with farmers</p> <p>Agricultural Science for Secondary Schools in Guyana Pg. 114-119</p>	<p>Visits to community and school farms</p> <p>School and community farms.</p> <p>Discussion of observations</p> <p>Display scrapbook</p>	<p>Assessment of students' report on observations at each stage of swine management</p>	<p><b>Language Arts</b></p> <p><b>Reports Oral discussion</b></p>

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<b>Management Systems in Swine Production – Extensive, Intensive, Semi-Intensive</b>  <b>Management of Swine at different stages of growth</b>	Identify the different systems used to rear swine  Recognise the differences among the different systems used to rear swine  Recognize the features of each system	The variety of systems used to rear swine  The features of each system  The importance of the features of each system  The differences of the different systems used to rear swine  The areas for improvement of each system  The recommendations made for improvement to each system	The need to use the system appropriate for the farmer and type of swine reared  The differences among the systems and make comparisons	Appreciate the factors that influence the management of swine	Management of swine: (a) Extensive system  (b) Intensive system  (c) Semi-intensive system	School and community farms  Video cassettes  Resource persons  Agricultural Science for Secondary Schools in Guyana BK. 2 pp 103-104	Observation of Management System  Discussion of observations  Interviews with farmers  Displaying pictures of the different systems  Displaying scrapbooks	Assessment of students' report on the:  - Systems used in the management of swine  -Features of each system  - Differences deserved among the management system	<b>Language Arts</b>  <b>Description of features</b>

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<b>Common Pest and Diseases – Piglet anemia, Souring, Hog cholera</b> <b>Common pest – External – Mites cause mange, Lice-cause scaly skin</b> <b>Internal: 1. Lungworms, 2. Round-worms</b>	Identify some common diseases of swine  Identify some pests of swine external internal	The methods of controlling diseases which affect swine  The methods of controlling pests, which affect swine externally and internally	The diseases which affect swine and state how they can be prevented/controlled  Discuss the effect of pests which affect swine and state how they can be controlled	Willingness to use preventative methods before attempting any other method	Common diseases of swine - Piglet anemia - Scouring - Hog - Cholera  Common pests - Mites - Lice - Lungworms - Round worms  Preven-tative Methods - Good sanitation - Nutrition - Good Management practices	School and community farms  Swine, which suffer from diseases and pest  Agricultural Science For Secondary Schools in Guyana Pg 121-124	Observation of swine affected by diseases and pests  Observation of preventative practices  Discussion of observations  Interviews with resource persons from local farms	Assessment of students'  -Reporting on observations  -Recording in farm drains  -Collection of pictures of infected swine  -Display of scrapbooks	<b>Language Arts</b>  Report writing  Written expression of observations

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<b>Selection of Crops</b>	Selection of four (4) crop types, a fruit, legume leaf and root crop suitable to the area where the school farm is located	Six (6) factors which influence crop selection	The importance of considering environmental factors before selecting different crop type for cultivation	Appreciate the need to consider environmental factors, which influence the selection of crops for cultivation	<p>The selection of crops suitable for a particular region or an area depends on :</p> <ul style="list-style-type: none"> <li>-Climate</li> <li>- Soil type</li> <li>- Labour and capital</li> <li>- Transportation and marketing facilities</li> <li>-Socio-economic factors</li> <li>- Definition and explanation of the factors that influence crop selection</li> </ul>	<p>Agricultural Science for Secondary Schools in Guyana Bk. 2 Ch. 1 pp 1 &amp; 2</p> <p>Caribbean Agricultural Science Bk. 2 by A. I Henry (2<sup>nd</sup> Edition)</p> <p>Agricultural Science for Secondary Schools in Guyana BK. 1 Chapter 3 P20</p>	<p>Discussion of the factors that influence crop selection</p> <p>Field trips to local farms</p> <p>Field trips to two (2) other administrative regions, e.g. (coastal plain and hinter land) to observe environmental factors as well as selection of crops</p>	<p>Assessment of students' selection and propagation of crops e.g legume, fruit, leaf and root</p>	<p><b>Social Studies</b></p> <ul style="list-style-type: none"> <li>- The local environment</li> <li>- The resources of Guyana</li> <li>- The natural regions of Guyana</li> </ul>

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<b>Land preparation</b>	<p>Perform land preparation activities for root, fruit, leaf and legume crops</p> <p>Construct beds and drains for an Agricultural plot</p> <p>Use correct implements and/or materials to perform tasks</p>	<p>The different activities involved in the process of land preparation</p> <p>Manual land clearing and mechanical land clearing activities</p> <p>The Selection of crops in relation to land clearing</p>	<p>The importance of land preparation in crop production</p>	<p>Willingness to carry out all land preparation activities systematically</p>	<p>The process of land preparation involves the following activities:</p> <ul style="list-style-type: none"> <li>- Land clearing</li> <li>- Laying out</li> <li>- Ploughing</li> <li>- Harrowing</li> <li>- Mulching</li> </ul> <p>-Construct-ing of beds and rains, or ridges and furrows</p> <p>-Mixing in manures</p> <p>-Applying pesticides</p> <p>Types of land clearing activities</p> <ul style="list-style-type: none"> <li>- Manual land clearing</li> </ul>	<p>Agricultural Science For Secondary Schools in Guyana Bk 2 pp 3-10</p> <p>Agricultural Plantations, Vegetable plots, school farm and Practical Instruction Centers</p> <p>Agricultural tools, machinery, equipment and material inputs</p> <p>A guide to School Based Assessment</p>	<p>Field trips to sugar plantations, rice fields and other crop farms</p> <p>Lecture/Discussions on land preparation</p> <p>Demonstration lessons</p> <p>Resource persons</p> <p>Observing and using tools, machinery equipment and material inputs</p>	<p>Assessment of students' report on the:</p> <p>(i) Types of land clearing</p> <p>(ii) Construc-tion of beds and drains and or ridges and furrows</p>	

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	SKILLS	KNOWLEDGE	UNDERSTANDING	ATTITUDE					
<b>Land Preparation (cont'd)</b>	<p>Perform the assignment with correct agricultural implements and/or materials as well as showing resourcefulness in their absence</p> <p>Identify the activities involved in the process of land preparation</p> <p>Operate simple tools and equipment used for land preparation</p>	<p>The activities involved in the process of land preparation</p> <p>The order of techniques involved in using simple tools and equipment for land preparation activities</p> <p>The need for the activities involved in land preparation</p>	<p>The processes involved in land preparation activities</p> <p>The consequences of poor land preparation techniques</p>	<p>Willingness to change, adopt or modify procedures to suit specific crops</p> <p>Willingness to carry out activities in the correct order</p>	<p>- Mechanical land clearing</p> <p>- Land preparation techniques</p>	<p>Agricultural Text book on land preparation activities</p> <p>Chart showing different activities</p> <p>Pictures of implement for ploughing example of manures, limestone, pesticides</p> <p>Video cassettes of activities associated with land preparation</p>	<p>Demonstrations on land clearing activities</p> <p>Field trip to farms where land clearing activities are carried out</p> <p>Students' involvement in land preparation activities</p>	<p>Assessment of Students' use of different land preparation activities in cultivating vegetable crops from the four groups; root, fruit, legume and leaf</p> <p>Assessment of students' performance of land clearing activities</p>	<p><b>Social Studies</b></p> <p>Land clearing and land utilization</p>

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<b>Propagation of crops - Sexual Reproduction</b>	<p>Identify the parts of monocotyledonous and dicotyledonous seeds</p> <p>Conduct viability test on selected seeds</p> <p>Prepare seed boxes for selected seeds which need to be first sown in a nursery</p> <p>Calculate germination percentage</p> <p>Carry out experiments to test the conditions necessary for germination</p>	<p>The definition of propagation</p> <p>The two types of plant propagation</p> <p>The procedures for plant propagation in seed boxes from preparation of seed box to transplanting of seedlings</p> <p>Sexual propagation</p> <p>The two groups of seeds/flowering plants</p> <p>The requirements for germination</p>	<p>There are characteristics of seeds which should be considered in the selection of good seeds for sowing</p>	<p>Willingness to apply scientific principles and practices to crop production</p>	<p>Propagation of plants is the growing of plants by using different plant materials. There are two basic types of plant propagation</p> <p>1. Asexual propagation</p> <p>2. Sexual reproduction which uses of seeds to produce new plants</p> <p>Two types of seeds</p> <p>1. Mono-cotyledonous e.g. corn seeds</p> <p>2. Dictoyledonous e.g. black-eye seeds</p>	<p>Agricultural Science for Secondary Schools Bk 2 pp 10-18</p> <p>Seeds of vegetable plants and ornamentals</p> <p>Petri dish, cotton wool etc. to carry out germination tests</p> <p>Seed boxes and nursery sheds</p>	<p>Laboratory work on the school farm</p> <p>Field trip to Government Agriculture Nursery and Practical Instruction Center</p>	<p>Assessment of students':</p> <p>-Use of ten corn seeds and ten bean seeds to conduct viability tests and their calculation of germination percentage</p> <p>-Construction of seed boxes according to specified dimensions</p> <p>Use of information from the unit to differentiate between monocot and dicot plants</p>	<p><b>IScience</b></p> <p>Sexual and Asexual reproduction</p> <p>The flowering plant</p> <p>Germination experiments</p> <p><b>Home Economics</b></p> <p>Vegetables i.e. types and classification</p> <p><b>Social Studies</b></p> <p>Care of the environment</p>

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Propagation of crops - Sexual Reproduction (cont'd)		Epigeal and hypogeal germination		Willingness to improve the school environment by propagating vegetable plants and flowers	Parts of a seed: - the testa - the cotyledons - the embryo - the plumule - the radicle - the endosperm  Selection of seeds:  -Healthy, mature, large, whole seeds free from damage should be selected from healthy, highly productive parent plants	Agricultural plots and school farms			

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Propagation of crops - Sexual Reproduction (cont'd)					Requirements of germination - Moisture - Temperature - Air - Light  Conducting viability test  Epigeal germination hypogeal germination  The Nursery as a place where seeds are sown until they germinate and develop into mature seedlings				

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	SKILLS	KNOWLEDGE	UNDERSTANDING	ATTITUDE					
Propagation of crops - Sexual Reproduction (cont'd)					Seed boxes Preparation of seed box for sowing:  - Sowing seeds in seed boxes  - Seed germination  - Post germination care  - Hardening off				

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<b>Propagation of crops - Asexual Reproduction</b>	<p>Perform budding operations at school or at an orchard crop nursery</p> <p>Identify various food storage (modified organs) used for propagation</p> <p>Plant an ornamental plant</p> <p>Propagate plants by layering</p>	<p>Asexual reproduction</p> <p>The two types of vegetative reproduction</p> <p>The various types of grafting</p> <p>Examples of modified organs that are propagated</p> <p>Definition of the term layering</p>	<p>The differences between natural and artificial vegetative reproduction</p> <p>The benefits of vegetative reproduction compared to planting by seeds</p> <p>Plants are propagated for life as well as to beautify the environment</p>	<p>Appreciate the value of using vegetative reproduction to maintain desirable characteristics of flowering plants</p>	<p>Vegetative reproduction is the production of new plant by and ways other than by planting of seeds</p> <p>The two types of vegetative reproduction are:</p> <ul style="list-style-type: none"> <li>- Natural reproduction</li> <li>- Artificial vegetative reproduction</li> </ul>	<p>Agricultural Science for Secondary Schools Bk. 2 pp. 18-24.</p> <p>Agricultural Science for Secondary Schools by Ralph P Persaud ch. 10 pp. 65-68.</p> <p>Potted plants, knife, tap secateurs, bud wood and other grafting and budding materials</p>	<p>Observations of vegetative reproduction</p> <p>Visit to a plant nursery and flower plant shop</p> <p>List and discuss the plant propagation methods used</p> <p>Visit a NARI plant nursery for demonstration of one hard plant propagation then carry out budding and grafting exercises at the nursery or school farm</p>	<p>Assessment of students' reports of their observations/visits to nursery</p>	<p><b>Science</b></p> <p>Vegetative organs</p> <p><b>Home Economics</b></p> <p>Vegetables i.e. types and classifications</p> <p><b>Social Studies</b></p> <p>Care of the environment</p>

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Propagation of crops - Asexual Reproduction (cont'd)					<p>Natural vegetative reproduction is unaided by man</p> <p>Techniques of layering</p> <p>Above ground or underground: - leaves, stems or roots are all capable of natural vegetative parts that may be modified organs</p> <p>Examples are: - tubers, corns, bulbs, rhizomes and suckers</p>	<p>Agricultural Nurseries and Plots</p> <p>Practical Instruction Centers (PIC)</p> <p>A guide to School Based Assessment</p>	<p>Assessment of students' on the school farm of PIC cultivate one crop type using tubers, corns, bulbs, rhizomes or suckers</p> <p>Prepare container and soil mixture and pot an ornamental plant</p>	<p>Assessment of students' reports on budding of citrus and grafting of mangoes in Guyana</p>	

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	SKILLS	KNOWLEDGE	UNDERSTANDING	ATTITUDE					
Propagation of crops - Asexual Reproduction (cont'd)			Budding and grafting is carried out between makes of closely related spews		<p>Types of artificial vegetative reproduction:</p> <ul style="list-style-type: none"> <li>-Budding e.g. citrus plants</li> <li>-Grafting e.g. mango plants</li> </ul> <p>Budding and grafting must be done between members of closely related species, which have the desirable characteristics</p>				

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Propagation of crops - Asexual Reproduction (cont'd)					Preparation of the root stock budding operation  Types of grafting: -Cleft of terminal grafting -Veneer grafting -Grafting by approach -Layering and air layering -Simple layering				

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	SKILLS	KNOWLEDGE	UNDERSTANDING	ATTITUDE					
<b>Care and Maintenance of Crops</b>	Apply fertilizers according to crop needs	Five common practices in caring and maintaining cultivated crops	The link between irrigation and environmental factors, rainfall, available moisture etc.	Show a love for plants and the environment by properly caring and maintaining the crops which are cultivated at home and at school	Following the establishment of seedlings, a number of maintenance operations are necessary, but these vary from crop to crop. The practices common to many crops are as follows: -irrigation - weed control - mulching - fertilizer application -pest and disease control	Agricultural Science for Secondary Schools in Guyana Bk. 2 ch1 pp 25-33  School farms and Practical Instruction Centers  Agricultural tools Knapsack Sprayers  Nitrogenous Phosphate Fertilisers  Large farms and Agricultural plantations	Field trips to observe cultural practices  Practical work on a farm  Visit MMA or Black Bush Polder and report on water management and irrigation practices at either scheme  Visit a sugar plantation and rice field and write on the various cultural practices used in care and maintenance of crops	Assessment of students':  -Essay(s) on the topics: Chemical weed control is the best method of controlling weeds and refer to the other weed control  Methods in your discussion cultivate the four types of vegetables namely root, fruit, leaf and legume	<b>Social Studies</b>  Care of the Environment  <b>Language Arts</b>  Essay Writing
	Select and use chemical and other methods to control weeds in the school garden	Definition of the term irrigation  Sources of irrigation water	The value of Chemical weed control as against the other weed control methods	Apply safety precautions when using chemicals in agricultural production					
	Select and use available material to mulch crops grown in the school garden	The value of various methods of irrigation  Definition of the term mulching							
		Weeds that can be harmful to crops							

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<b>Care and Maintenance of Crops (cont'd)</b>		<p>Various methods of weed control</p> <p>Contact and systemic weedicides</p> <p>The effects of pest and diseases in the cultivation of crops</p>			<p>Irrigation is the artificial application of water to the soil so as to ensure an adequate supply of moisture to meet the crop needs</p> <p>Environmental factors, readily available moisture etc. have a direct relationship to irrigation</p> <p>Sources of irrigation water: -rivers, -streams, -lakes -reservoirs etc.</p>			-Work in groups to apply various cultural practices in caring and maintaining the crops cultivated	

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Care and Maintenance of Crops (cont'd)					<p>Methods of irrigation:</p> <ul style="list-style-type: none"> <li>-Channel (Furrow) Irrigation</li> <li>-Sprinkler Drip (trickle) Irrigation</li> </ul> <p>Purpose of Mulching</p> <p>Fertilizer application and the reasons for the use of:</p> <ul style="list-style-type: none"> <li>-Nitrogen</li> <li>- Phosphorous</li> <li>-Potassium</li> </ul> <p>Pest and disease control</p>				<p><b>Social Studies</b></p> <p>Care of the environment</p>

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Care and Maintenance of Crops (cont'd)					Harmful effects of weeds  Methods of weed control: - Hand pulling - Inter-tillage -Flooding - Fertilizers and manure  Chemical weed control: -Contract non-selective weedicides  -Selective contact weedicides  -Systemic (translocated) weedicides				

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<b>Tools in Crop Cultivation</b>	<p>Identify machinery and tools used for specific purposes in crop cultivation</p> <p>Use machinery and tools correctly on the farm</p> <p>Draw labelled diagrams to show parts of tools/implements used on the farm for crop cultivation</p>	<ul style="list-style-type: none"> <li>- Nursery management (budding, cuttings)</li> <li>- Inter-cultivation</li> <li>Irrigation</li> <li>- Plant protection</li> <li>- Harvesting</li> </ul>	<p>The importance of using suitable tools and equipment and application of the correct techniques for crop cultivation</p>	<p>Willingness to ensure that tools are used with care for intended purposes only</p>	<p>Tools used for:</p> <ul style="list-style-type: none"> <li>-Land preparation</li> <li>- Seed box nursery and seedbed preparation</li> <li>Budding, cuttings</li> <li>-inter-cultivation</li> <li>- Irrigation</li> <li>- Plant protection</li> <li>- Harvesting</li> </ul>	<p>School garden, tool and equipment</p> <p>Firm strip</p>	<p>Examine tools</p> <p>Observe demonstrations on the farm and on field trips</p> <p>Using tools correctly and applying the right techniques for specific purposes</p> <p>Assisting in farm activities</p> <p>Collecting pictures of various machinery tools</p> <p>Visits to farms where the above tools are in use</p>	<p>Assessment of students':</p> <ul style="list-style-type: none"> <li>-Identification of tools used for specific purposes</li> <li>-Drawing the diagrams and labelling tools used for different purposes</li> </ul>	<p><b>Industrial Arts</b></p> <ul style="list-style-type: none"> <li>- Fixing, repairing and sharpening of tools</li> <li>Simple machines</li> </ul>

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<b>Tools in Crop Cultivation (cont'd)</b>	<p>Use tools and implements correctly and carefully so as to avoid injury of self/others and damage to tools and plants</p> <p>Follow the steps involved in caring tools for long life</p> <p>Sharpen tools for efficient performance</p>	<p>The correct use of different machinery and tools in crop cultivation on the farm</p> <p>The use of machinery and tools correctly (i.e right posture, depth, etc.) to avoid damage to tools.</p> <p>The care of different machinery and tools for long life</p> <p>The care tools to prevent rusting</p>	<p>The importance of using the correct techniques step by step using appropriate tools for different activities</p>	<p>Practice the correct techniques with caution</p> <p>Use of caring procedures to extend the usefulness of tools</p>	<p>Use of machinery and tools: - use tools for the correct purpose</p> <p>- apply the right technique(s)</p> <p>- use the tools with care and caution</p> <p>Tools must always be cleaned, washed, dried, oiled and greased (if necessary) and stored in safe place after use</p>	<p>Agricultural machines and tools</p> <p>-School garden</p> <p>Film strips</p> <p>- lubricating oil</p> <p>- oil pumps rags</p>	<p>Demonstrations using machinery and tools</p> <p>Demonstration of supervised practice sessions</p> <p>Assist in caring tools and machinery</p>	<p>Assessment of students':</p> <p>-Use, and handling of machine and tools in a sequential an orderly manner</p> <p>-Caring and storing tools</p>	<p><b>Physical Education</b></p> <p>Displaying correct posture</p> <p><b>Science</b></p> <p>Oxidation reaction</p>

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<b>Tools in Crop Cultivation (cont'd)</b>	Select seed boxes/containers/nursery beds that are suitable for growing seedlings	The features of: A good seed box Container Nursery bed  The importance of selecting and using seed boxes, containers, nursery bed which have the desired dimensions, depth, drainage etc	The relationship of the features of seed boxes, containers and nursery beds to the vigorous growth of seedlings	Careful selection of convenient and suitable seed box/container or nursery bed to raise seedlings	Seed boxes/container must meet certain requirements: - easy to transport -provision to drain excess water. -sufficient depth excess water - sufficient depth for root growth - certain amount of shade  Nursery beds need to be located in a well-drained loamy soil	Nursery bed, School garden, Seed box, containers, Garden soil, Well rotted pen manure, Sand and nursery tools  Charts to show: - dimension of seed boxes - special features of seed box	Examine seed boxes for adequate space, depth, drainage and easy transport  Demonstrations of seed boxes, and containers  Discussion of observations of seed boxes and nursery beds	Assessment of students' drawings of containers and seed boxes	<b>Mathematics</b>  Dimension of seed box and nursery beds  Calculating the quantity of seedlings required for a given seed box  <b>Industrial Arts</b>  Construction of seed boxes

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<b>Tools in Crop Cultivation (cont'd)</b>	Identify the necessary components and mix them to form potting mixture for seed boxes and containers	<p>The materials that are needed for preparing potting mixture for seed boxes and containers</p> <p>Demonstrate the techniques of preparing potting mixture for seed boxes and containers</p> <p>Abnormal seedling growth and the possible contributing factors</p>	The importance of providing adequate nutrients, aeration, depth and moisture to the production of vigorous, healthy seedlings	Appreciate the need to follow guidelines on ratio of each component of potting mixture and the sequence that needs to be followed in mixing and filling it in seed boxes and containers	<p>Seed box/containers components:</p> <ul style="list-style-type: none"> <li>- Garden soil</li> <li>- Wet rotted pen manure/compost</li> <li>- Sand</li> </ul> <p>Ratio of each component</p> <p>Steps in mixing different components:</p> <ul style="list-style-type: none"> <li>- Filling the seed box/container with potting mixture</li> <li>- Leveling and compacting the mixture in seed box/container</li> </ul>	<p>School garden, seed box/containers, garden soil, pen manure/compost, sand, appropriate tools, charts to show:- ratio of components for preparing potting soil</p> <p>Cross –section of a prepared seed box</p>	Demonstration of the main features of a seed box	Assessment of students' performance in the field	<p><b>Science</b></p> <p>Decomposition of raw pen manure/compost by micro-organisms</p> <p>Nitrogen cycle</p> <p>Porosity</p> <p>Capillary rise of water</p>

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<b>Tools in Crop Cultivation (cont'd)</b>	<p>Demonstrate the preparation of seed box (filling seed box with potting mixture) and sowing seeds</p> <p>Demonstrate the steps in the preparation of a nursery bed</p> <p>Sow seeds in seedboxes or on nursery beds</p> <p>Predict the outcome if there is an imbalance in the ratio of components</p>	<p>The rates of different components that make up the potting mixture</p> <p>The steps involved in preparing a nursery bed- free from weeds - with suitable crumb structure - adequate depth - adequate plant nutrients</p>	<p>The consequences of an imbalance in the ratio of the components of seed boxes</p>						

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<b>Tools used in crop cultivation (cont'd)</b>	<p>Identify signs of poor growth of seedlings</p> <p>Identify signs of vigorous, healthy growth of seedlings</p> <p>Identify environmental factors which contribute to poor growth of seedlings</p> <p>Use farm diary to record students' activities and observations and evaluative comments</p>	<p>The care that needs to be provided from germination of seeds to transplanting seedlings in the field (seedbeds)</p> <p>The processes involved in caring for plants during germination of seeds to transplanting seedlings in the field</p> <p>Causes of poor growth of seedlings</p> <p>Causes of vigorous growth of seedlings</p> <p>Hardening of seedlings</p>	<p>Seedlings need special care while they are in seed boxes/containers and nursery beds and those requirements need to be met as and when they arise</p>	<p>Willingness to:</p> <ul style="list-style-type: none"> <li>- Care and nurse seedlings for them to grow vigorously, free from pests and diseases</li> <li>- Thin out weak, stunted or long, straggly seedlings in the seed box/nursery beds</li> </ul>	<p>Seedlings need to:</p> <ul style="list-style-type: none"> <li>- Be free from weed competition</li> <li>- Have adequate moisture</li> <li>- Have adequate nutrients for good growth of seedlings</li> <li>- Free from pests and diseases</li> <li>- Thin out weak, stunted or long, straggly seedlings in the seed box/ nursery beds</li> </ul>	<p>Seed boxes, containers nursery beds, watering can with fine rose, suitable tools</p> <p>Charts to show stages of germination</p> <p>Seedlings growth</p> <p>Parts of a seedling</p>	<p>Observe carefully the growth of seedlings in seed boxes/containers/nursery beds</p> <p>Discussions based on observations</p> <p>Assisting in the care of seedlings</p>	<p>Assessment of students' performance in the field</p> <p>Assessment of farm diary</p>	<p><b>Science</b></p> <p>Growth of seedlings</p> <p>Germination</p>

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<b>Vegetable Propagation – cuttings, budding</b>	<p>Select the right variety of plant for taking stem cuttings</p> <p>Identify the desirable part of the plant to make cuttings for plant propagation e.g sweet potato</p>	<p>The desirable features for selecting stem cuttings</p> <p>The importance of selecting the right part of the stem for taking stem cuttings</p> <p>The right size of stem cutting</p>	<p>The need for:</p> <ul style="list-style-type: none"> <li>- Consumer preference</li> <li>- High yield</li> <li>- pest and disease resistance when selecting varieties for stem cuttings</li> </ul> <p>The importance of making stem cuttings with 3-4 nodes on it</p>	<p>Selecting high yielding, disease free varieties and ones that have consumer demand</p>	<p>Characteristics of a desirable variety</p> <p>Desirable parts of the plant to take stem cutting.</p> <p>Size of stem cutting</p>	<p>School garden, plants from which to take stem cuttings</p> <p>Flow chart to show preparation of stem cuttings for planting</p> <p>Sharp knife Fungicides like Thiram</p> <p>Charts to show:</p> <ul style="list-style-type: none"> <li>-Structure of stem cuttings;-</li> <li>-Structure of growing stem cuttings</li> </ul>	<p>Demonstrations</p> <p>Supervised practical sessions</p> <p>Discussions</p> <p>Field trips</p>	<p>Assessment of students' performance in the field</p>	<p><b>Science</b></p> <p>Stem cutting</p> <p>Structure of the stem.</p> <p><b>Mathematics</b></p> <p>Length of stem</p> <p>Cuttings root systems</p>

TOPIC	LEARNING OBJECTIVES				CONTENT	MATERIALS	METHOD/ STRATEGIES	EVALUATION	AREA(S) OF INTEGRATION
	SKILLS	KNOWLEDGE	UNDERSTANDING	ATTITUDE					
<b>Vegetable Propagation – cuttings, budding (cont'd)</b>	<p>Identify and select suitable varieties to be used as root-stock and scion for budding in citrus</p> <p>Identify tools and other materials needed to carry out the process of budding</p> <p>Carry out budding in the field</p>	<p>The desirable characteristics of root stock and scion</p> <p>The necessary tools and other materials needed to carry out the budding exercise</p> <p>The procedure involved in the budding exercise</p> <p>After care and maintenance of budding plant</p>	<p>The importance of relevant tools and materials used in budding.</p> <p>The importance of the aftercare operations of the budding plants after budding has been completed</p> <p>The reasons why the bud may or may not grow after the budding exercise was carried out</p>	<p>Appreciates the need:</p> <p>-To select the right type of stocks and scions to arrive at a desirable budded plant</p> <p>-For careful handling of scion and stock during budding in order to ensure successful union of the two</p> <p>Care of the budded plants after budding until they are transplanted in the field</p>	<p>Selection of suitable scion and root stock</p> <p>Tools and materials needed to assist in the budding operation</p> <p>Procedures involved in the performance of budding</p> <p>After care and maintenance activities for budded plants onto the time of transplanting field</p>	<p>Plants in Nursery bed or potted plants, bud wood</p> <p>Sharp knife</p> <p>Budding tape</p> <p>Chart to show transverse section of dicot stem</p> <p>Flow chart to show the preparation of root stock and scion for budding</p>	<p>Examination of stock and scion for their suitability</p> <p>Discussion of observations</p> <p>Supervised practice sessions</p> <p>Visit Horticultural station to observe the steps involved in budding</p> <p>Presentation of Group reports</p>	<p>Assessment of students' performance in the field</p> <p>Assessment of students' group reports on budding exercise</p>	<p><b>Science</b></p> <p>Bud Cambium</p> <p>Internal structure of the stem</p>

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<b>Seedbeds and Planting</b>	<p>Use appropriate hand tools or tractor drawn implements to prepare land in established seed beds</p> <p>Measure and mark the length and breadth of seed beds with pathways using measuring tape/ruler, garden line and pegs</p> <p>Construct drains</p> <p>Level beds</p> <p>Incorporate well rotten pen manure</p>	<p>The different types of tools that are used for various operations in land preparation to form seed beds</p> <p>The use of standardized measurement for seedbeds with drains in between them on flat low lying lands</p> <p>The role of plant nutrients on seedbeds for vigorous growth of seedlings</p> <p>The incorporation of well-rotten pen manure to improve growth of seedlings</p>	<p>The relationship between the features of the different operations in land preparation, weed control, aeration, crumb structure, water infiltration etc. to the vigorous growth of seedlings</p> <p>The proper initial growth of seedlings depends on weed, free seed beds with adequate moisture and nutrients</p>	<p>Appreciates the use of a straight line layout of beds with accurate measurement to give a good outlook of the field</p>	<p>Land preparation</p> <p>- Weeding - Forking/ ploughing - Chipping/ harrowing</p> <p>Layout of beds using measuring tape, garden line and pegs</p> <p>Drains in low-lying field incorporate pen manure level seedbeds</p>	<p>Hand tools Tractor drawn implements</p> <p>School garden Measure tape Ruler Garden line Pegs Well-rotted pen manure</p>	<p>Demonstrations</p> <p>Supervised practical sessions</p> <p>Field trips</p> <p>Discussion of observations</p> <p>Students assist in layout and other operations</p>	<p>Assessment of students' performance in the field</p>	<p><b>Mathematics</b></p> <p>Length, width, depth and area</p>

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<b>Seedbeds and Planting (cont'd)</b>	<p>Measure optimum distances (spacing) between rows and within rows to plant seeds or transplant seedlings on seedbeds</p> <p>Plant seed/transplant seedlings at definite points and correct depth on the seedbed</p>	<p>Describe the importance of correct spacing between plants to avoid shading of leaves and obstruct photosynthesis</p> <p>Recognise the importance of depth in sowing seeds or transplanting seedlings on seedbeds</p>	<p>The importance of optimum spacing between plants on seedbeds yield and planting seeds/transplanting seedlings using correct depth in crop growth and final yield</p>	<p>Appreciates the beauty in having plants on seedbeds in a straight line with desired spacing</p>	<p>Optimum spacing for plants between rows and within rows</p> <p>Right depth of planting seeds or transplanting seedling at correct depth</p>	<p>School garden</p> <p>Seeds/seedling</p> <p>Hand fork</p>	<p>Demonstrations</p> <p>Supervised practical sessions</p> <p>Discussion of observations</p>		<p><b>Mathematics</b></p> <p>Spacing and Depth</p>