MINISTRY OF EDUCATION
REPUBLIC OF TRINIDAD AND TOBAGO

PRIMARY SCHOOL SYLLABUS

AGRICULTURAL SCIENCE CURRICULUM

[*October 2001]

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INTRODUCTION

“Every man, woman and child has the inalienable right to be fee from hunger and malnutrition in order to develop their physical and mental faculties.”

FAO 1974 World Food Conference.

The original Agricultural Science Curriculum subscribes to the above believe and was used in our schools effectively , so much so that to this day , the garden and quiz competitions are dynamic aspects of the curriculum in the primary schools of the republic of Trinidad and Tobago.

Revision of this curriculum started in 1998 and is now completed, having been piloted successfully in over two hundred [200] schools in the eight Educational Districts.

This Draft {2001} has been modified using feedback from Primary Schools Principals, teachers as well as pupils, parents, Schools Supervisors and Curriculum Facilitators.

This Curriculum introduces the integrated approach to teaching Agricultural Science at the primary level. Its main premise is to guide teachers in the creation of effective learning experience leading to the development of skills and basic concepts in Agricultural Science.

The Curriculum is also intended to focus the pupils’ minds on the importance of the preservations of the environment as well as on developing technologies in modern day agriculture.

The content of this curriculum exposes the pupil to agriculture as a career and attempts to clear misconceptions about agricultural pursuits.

GOALS

Certain goals were identified in formulating this curriculum in Agricultural science. They are as follows:-

1. The practice and principles of healthy living including mental, physical and emotional well- being.
2. The demonstration of basic understanding of elementary concepts in Science and Technology.
3. Development of an understanding of the environment and problems caused by its degradation.
4. The practice of habits which demonstrate care of the environment.
5. Appreciation of the value of entrepreneurship, self- reliance and a positive work ethic.
6. Demonstration of the skills in crop and animal husbandry and soil conservation.
7. Development of knowledge and appreciation of career pathways in agriculture.

Summary of the Agricultural Science Curriculum

This curriculum consists of eleven main topics. These topics are as follows:-

1. ENVIRONMENT.
2. ROOT MEDIA /SOIL
3. CROPS
4. LIVESTOCK.
5. TOOLS AND EQUIPMENT
6. FERTILIZERS, MANURES AND ARGRICULTURAL CHEMICALS
7. WEATHER
8. AGRO-PROCESSING
9. CROPPINGS METHODS
10. NURSERY
11. FARMSS, AGENCIES AND ORGANIZATIONS IN ARICULTURE

Each topic was constructed with relevant sub-components that are critical to facilitate the pupils' appreciation and understanding of this curriculum.

Each content, skills and practical activities that are outline within this curriculum are inter- related and together promote integration amongst the other curricula of the primary school.

The following three pages summarize some of the sub-components of the eleven main topics.

TOPICS	Infant Yr 1	Infant Yr 2	Standard 1	Standard 2	Standard 3	Standard 4	Standard 5
ENVIRONMENT	Identify Components of the Environment		Components Landforms living /non living things	Safety with agricultural chemicals	Recycle/reuse items in agriculture	Conservation practices	Problems in the environment Conservation
ROOT MEDIA/SOIL	Recognize that most plants grow in soil.	Soil conditions for plant growth		Soil fertility Potting soil Nursery soil	Potting media Seedbeds Primary tillage Secondary Tillage Drainage	Types of soil Physical/ chemical properties of soil. Experiments	
CROPS	Indentify plants in the environment Plants around us. Parts of the plant	Simple recoding of plant growth	Parts of a plant Parts used as food. Uses of plants Types of crops Ornamentals/ Food crops	Germinating seedlings. Conditions of growth	Selecting seeds Woody and soft stem plants. Economic crops Export and local markets *. An illegal crop Design a small garden pla	Harvesting crops. Post harvest practices Integrated Pest Management [IPM]	Importance of flowers agriculture. Produce plants by layering. Budding/Grafting. Improving varieties of crops.
Livestock	Animals around us . Farm animals and their young.	Animals Types/ pet/care of small/large. Animal enemies of the farmer	Livestock farms Aquaculture	Rearing Rabbits Classification of livestock- helpful and harmful.	Poultry farming		Improving breeds of Livestock Genetic Engineering Cloning.

Topics	Infant yr 1	Infant yr 2	Std 1	Std 2	Std 3	Std 4	Std5
Livestock	Animals around us Farm animals	Types of animals	Types of livestock/ farms Aquaculture	Rearing rabbits Classification of livestock	Poultry farming	Beneficial insects	Improving breeds of livestock Genetic engineering Cloning
Helpful and harmful animals				Helpful and harmful animals Diseases and pests Differences between pest and diseases			
Pest and diseases				Weather instruments			
					Land preparation tools and equipment	Nursery tools	Plant propagation Tools
Tools and Equipment		Identifying tools in germination		Safety with Agricultural Chemicals *			
Fertilizers, Manures and Agricultural Chemicals					Simple and complete fertilizers The nutrients for a plant Application methods Types of organic manures Compose making See appendix D		

Topics	Infant yr 1	Infant yr 2	Std 1	Std 2	Std 3	Std 4	Std 5
Weather	Effects of weather on the environment			Dry/ Wet season activities Wind; rain; sun light; Temperature	Drainage and wet season activities		Wind And Pollution
Agro Processing			Agro processing of food materials drying, salting bottling labeling	Curing [drying] Animal pelts	Poultry processing	Agro-processors Agro-processing of non food materials	Importance of agro- processing
Cropping Methods		Use of nursery		Pot and trough Grow-box [See appendix B]	Directing seeding Indirect seeding	Organic farming Cultural practices Crop rotation: intercropping etc.	Tissue culture Hydroponics
Nursery	Germination of seedlings. Perform germination	Maintenance of germination plants.		Nursery Soil	Seed- box technology Thinning out Hardening off Transplanting seedlings Asexual reproduction [cutting the buds] Plant propagator	The nursery [see appendix A]	Plant propagator [see appendix c]
Farms. Agencies and Organizations	Types of Animal farms Vets Garden shops	Farm animals and importance of them.	Types of farms Farm products and activities Jobs. The farm and the community		Markets*		Training agencies. Financial organizations research agencies Technology in agriculture.

Infant Topics

1st Year Topics

Components of the environment.

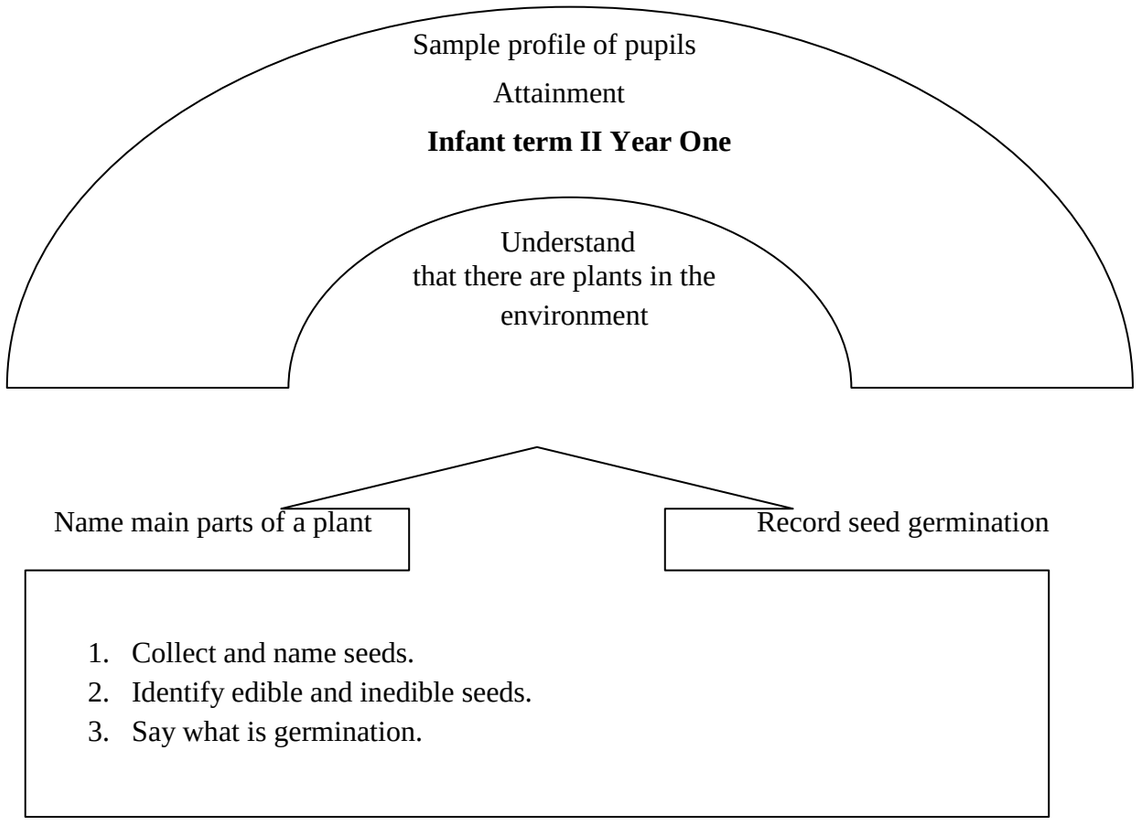
Plants in the environment.

Parts of the plant.
Germination of the seeds.
Animals around us
Farm animals.
Uses of animals e.g. clothing
Needs of animals.

2nd Year Topics.

Types of animals
Pets.
Importance of farm animals.
Care of animals.
Record of plant growth
Tools used in germination

Maintenance of germination plants.



ARICUTURAL SCIENCE CURRICULUM GUIDE

FIRST YEAR TERM 1: ENVIRONMENT

TOPICS SKILLS	OBJECTIVES	CONTENT	TEACHING/ LEARNING ACTIVITIES
(a) Indentify components of the environment	1.Observe plants in the environment	Plants –plants in their environment{school and at home} Short and tall plants	Collect specimens, nature walks, and chats
	2.Observe animals in the environment	Animals –Animals and common insects in their environment.	Charts ,pictures, charts, nature corner, nature walks
	3. Identify agriculture buildings in the environment/on the farm.	{a} home {b} school {c} village {2 lessons}	Show and tell Nature walk
		Compose ,nursery shed ,animals pens –poultry, rabbits	Making models
	4.Identify simple landforms	Fish ponds/aquarium{2 lessons}	
		Pet housing	Plaster seed
	5. Discuss the effects of whether on the environment.	Mountains, hills valleys, rivers {2lessons}	Drawings Collect pictures
		Dry – bush fire	
	6. Identify plants use as ornamentals.	-Draught/ lack of water	Pictures
		-wet season	Charts
		-rain fall	Listening to weather forecast/role play
		-weather in terms of seasons	Wind picking
			Weeds
(b) Identify plants in the environment	7. Name common plants used as foods. a. Above the soil b. In the soil. (underground)	Ornamentals {common} hibiscus, croton ,rose, ,ixoras, bignonias, bougainvillea, periwinkle ,jump-up and kiss-me ,palms and indoor plants {2} lessons	Making weather maps Nature walks Charts
		Plants used as food- cabbage ,lettuce, tomato, eddoes,	Projects-propagate one variety
	8.Name common plants used for medicinal purposes	peppers, dasheen,,cassava, bodi ,corn fruits {2 lessons}	Incidental teaching
			Nature garden
		Plants used for medical purposes –aloe vera , wonder of	Fruit day
	9.Identify plants that provide us with shade	the world, wild senna ,and fever grass, caraille	Collect specimens
		Trees with dense foliage e.g. mango, almond, chennette,	Charts
		and banyan.	Nature walks /garden
			Nature walks, drawings
			Collecting pictures

FIRST YEAR TERN 2- PLANT STUDY

TOPICS /LESSONS	OBJECTIVES	CONTENT	TEACHING/ LEARNING ACTIVITIES
[1] plants around us	Understand that there are plants in the environment Tall Short Annual	Plants Shade Fruit Vegetables Ornamental etc. Home/below grown	Walk around the school to see plants in their environment
[2] parts of a plant	Name the main parts of a plant- Root Stem Leave Flower Fruit	Parts of the plant – Above /below ground	Students Draws parts and plants
{3} seeds- A . edible B. non edible	1 collect and name seeds 2. identify edible and non edible seeds	Seeds from plants edible-peas Non edible pommerac	Collecting and classify
(4) Germination of seeds {2 lessons}	Say what is germination Perform germination skills record seed as a source of the new plant	Understanding of germination conditions necessary for water and air germination, warmth, moisture time factor.	Sowing a variety of seeds.

FIRST YEAR-TERM III ANIMAL STUDY AND THE ENVIRONMENT

TOPIC/LESSONS	OBJECTIVES	CONTENT	TEACHING/LEARNING ACTIVITIES
[1] Animals around us [2 lessons]	1] Name common animals in the environment	Animals of various classifications e. g. birds insects, reptiles ,fishes etc,{immediate/extended environment]	Collection of pictures drawings coloring modeling
2]Farm animals and their young	1]identify farm animals and associate them with the food we obtain from them	Farm animals –fish, goats. Meat –turkey ,ducks Milk- goats and cows Eggs- chicken	Visit to nearby farm Singing- old mc Donald Setting up an animal farm
3]farm animals and their young	1]Name the young of farm animals 2] Indentify the different physical characteristics between the young and the adult	Differences –sizes etc Cow- calf Duck – ducklings	Observation of pictures.
4] Animals supply us with clothing.	1] Name animals and state the clothing material we obtain from them.	Rabbits –skin Alligator- skins –shoes Cows- leather-shoes Goats-skin	Observation of pictures and samples
5] Animals and their needs.	1)Recognise that animals have various needs	Needs of animals' food (grass, corn), water ,air, shelter (pens)	Charts based on pictures making models.
6] Soil	1) Recognise that most plants grow in soil.	Medium of plant growth 1) Water-e.g. lilies 2) Other trees- e.g. vines 3) Generally- soil	Nature walks

SECOND YEAR TERM I: ANIMAL STUDY

Topic/ Lesson	Objectives	Content	Teaching Learning/Activities
ANIMAL STUDY 1.Types of Animals	1. Name common animals in the environment. a)Farm b)Zoo c)Neighborhood	1.Farm animals –cow, pig, etc. 2.Other animals- snakes, birds	Field trips- Sugar Cane Seed Centre Industry Farms. Semantic map
2.Pets	1. Understand what a pet is. 2. Name some common pets.	Common pets-on the farm and home Examples and characteristics	1.Show and tell pets 2.Collection of leisure pets
3.Importance of Pets	1. Appreciate that pets are kept for leisure time activities at home and on the farm.	Pets as companions, protection, for recreation (sports) e.g. Tobago Goat Race. Donkey Derby.	Show and tell pets Terrarium Aquarium
4.Care of Pets	1. Understanding the importance of caring for pets/animals.	Ways of caring for pets/animals e.g. shelter, food, health care, love, communicating.	1.Collect pictures 2.semantic mapping 3.Field Trips
5.Types of Farm Animals	1.Name common farm animals in the environment 2. State the uses of these animals	Categories-food, clothing, work. Cow, sheep, goat, fish, rabbit	1.Collect pictures 2.Semantic mapping 3.Field Trips
6.Importance of Farm Animals	1.Appreciate that animals can bring in income	Functions-income (manure, transport, meat)	1.Visit by farmers to talk to pupils
7.Care of Animals	1.Know how to care for farm Animal	1.Housing,sanitation,feeding,medication Homes. Tools food vets.	1.Visit by farmer, vet.

SECOND YEAR TERM II: GERMINATION

TOPIC/ LESSON	OBJECTIVES	CONTENT	TEACHING LEARNING/ACTIVITIES
1. Germinate seeds in the garden.	1. Learn about conditions for germination.	1. Nursery. 2. Simple grow box.	1. Sowing of seeds. 2. Observing germination process.
2.Record of plant growth	1. Simple recording of plant growth.	1.Growth of plant in nursery/grow box 2. Tall plants/vine plants.	1. Measurement of plant growth. (Average using stick.)
3.Tools used in germination	1. Identifying tools used.	1.Tools use in nursery/grow box	1.Use of tools
4. Maintenance of germinated plants. a)Water b)Aeration c)Weed control	1. Plant need for water. 2.Plant need for air 3. Weed removal and benefits to plants.	1. Times and ways of watering plants. 2. Spacing of plants/open spaces. 3. Manual and mechanical methods	1. Use of water cans/containers/a.m. and p.m. 2. Use of nursery/direct air and light. 3. Displays visit a garden shop.

SECOND YEAR TERM III: FRIENDS AND ENEMIES OF THE FARMER

LESSON	OBJECTIVE	CONTENT	ACTIVITIES
1) Plant friends of the farmer. (3 lessons)	1) List some plant friends of the farmer 2) State how they are useful.	1) Food for animals and people. 2)Shade –Pink Poui 3)Housing-Teak 4)Medicine-ginger 5) Beauty-ornamentals.	Nature walks Collecting specimens Displays Collect pictures
2) Plant enemies of the farmer.	1)Name plant enemies of the farmer 2) Describe how they are harmful.	Weeds-nut grass Parasites-wild pines ,vines Toxic plants-alamanda, cow itch, nettles, razor grass.	Display of specimens.
3)Animal friends of the farmer.(2 Lessons)	1) Name some animal friend of the farmer. 2) State how they are harmful to the farmer.	Food- chickens, cow, goat, rabbit Clothing- sheep, cow Formation of fruits-butterflies etc. Controlling pests- birds, lizards etc. Labour- donkeys, buffalypso Protection-dogs	Drawing ,coloring animals Classifying
4) Large animals –enemies of the farmer.	1)Name some enemies of the farmer 2) State how they are harmful to the farmer.	1) Bats- spread diseases. 2)Mongoose-eats chickens 3)Birds- destroys crops e.g. corn 4)Squirrel-destroy cocoa pods 5)Snakes, Scorpions, Centipede- stings animals and people	Classification exercises, drawing colouring animals. Collecting pictures picture album Role playing.
5)Small animals –enemies of the farmer.	1)Name some animal enemies of the farmer. 2)State how they are harmful to the farmer,	1)Caterpillars, batchacs, mole crickets-destroys crops 2)Weevils-destroys seeds e.g. corn 3)Ticks-suck blood in animals 4)Froghoppers-spread disease.	Collection of specimens Nature walks Making observation in school garden.
6)Control of enemies	1)State ways of collecting plants and animal enemies of the farmer.	Plants –weeding ,cutting Animals- spraying ,traps, baits	Collect pictures.

STARNDARD ONE TOPICS

Components of the environment

Crop growth and Land forms on the environment

Parts of the Plant.

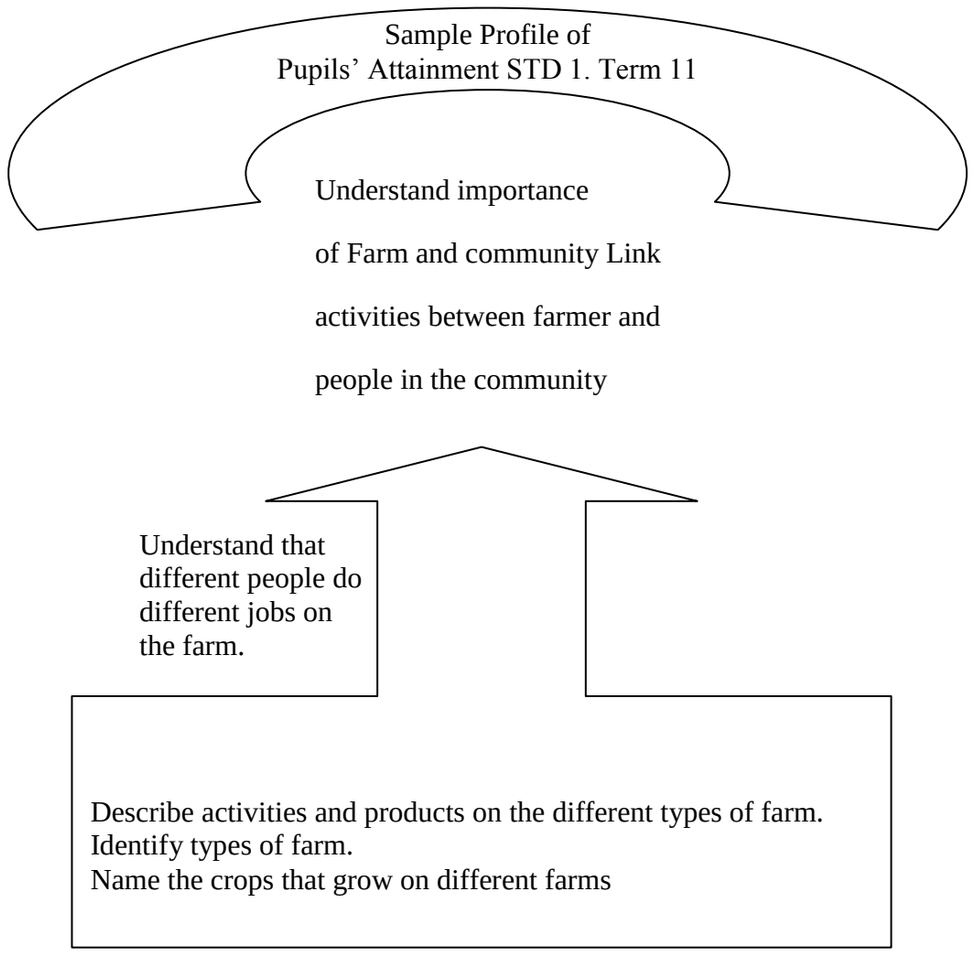
Types of farms e.g. Vegetable/ornamental/ Poultry/Aqua Culture

Jobs on the farm.

Farms and the community

Uses of plants (food, flowers, medicine.)

Agro –Processing



AGRICULTURAL SCIENCE CURRICULUM GUIDE

STANDARD 1TERM 1

THE ENVIRONMENT

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING/LEARNING/ ACTIVITIES
Components of the environment.	1.Identify aspects of the environment 2. Recognise landforms in the environment. 3.distinguishing between living and non-living things in the environment	Living things in the environment. Animals and plants.	Make models (clay;plasticene) Nature Walks Field Trips Collect pictures and make a picture album.
Crops grow on the landforms in the environment	1. Name landforms found in Trinidad and Tobago. 2. List some crops that can be grown on the landforms.	Landforms in the environment. 1..Mountains, hills and Valleys. 2. Plains and Swamps. Landforms e.g. Northern Range, Nariva Swamp, Caroni Plains, San Fernando Hill. Mountain and Hills-cocoa ,coffee Valleys- vegetables Plains-sugar-cane Swamps-rice/root crops	Trace the map of Trinidad Field Trips in the community/ countryside. Simple map skills Make a crop distribution map.

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING/LEARNING/ACTIVITIES
Parts of the plant.	1. Draw and label the external parts of the plant. 2. List some of the functions of these parts of the plant. 3.Recognise that part of some plants are useful to people.	Drawing of a simple tomato plant. Label: • Roots • Stems • Leaves • Fruits • Flowers	Label drawings of the parts of the plants. Identify these parts on specimen plants. Match the parts of the plant and crops that people use as food. Observe the different structure (architecture) of crops (plants) in the environment.
Types of farms	1.List the different types of farms 2. Describe the activities on these farms. 3 List some of the products from these farms.	Plantation farms Vegetables farms Meat farms Dairy farms Aquaculture farms	
Different crops on farms	Classify crops according to: A) The part of the plant used. B) The type of crop	1.Fruit crops e.g. tomato, sweet pepper, paw-paw 2.Leave Crops- cabbage ,lettuce, spinach, aloe vera 3.Root Crops-carrot, cassava, yam 4.Cereals –rice [wetland/dryl and] Corn [field ,sweet] 5.Legumes –peas, bodi peanuts 6.Stems –sugarcane ,ginger	Display the various crops in a market corner in the classroom. Visit to school garden Visit to the neighbourhood market Make charts and labels.

STANDARD I TERM II

AGRICULTURAL FARMS AND JOBS

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING LEARNING ACTIVITIES
Jobs on the farm	Understand that different people do different jobs on a farm	Jobs –farmer, driver, labourer	Collect pictures, role playing Resource persons
Plantation farms	Name crops grown on plantation farms Describe some activities on these farms.	Some long term crops are cocoa, sugarcane, coffee, paw-paw and coconuts	Visits to the plantation farm Displays of samples of plantation crops.
Vegetable farms	Describe the vegetables that are produced on the vegetable farms. Group vegetables. Demonstrate some activities on the vegetable farm. Grow vegetables	Examples of groups of vegetables on the farm: Leafy crops Root crops Fruit crops Flower and Stem crops	Collect and display pictures and samples. Identify the groups of vegetables Name the vegetables in the displays An ongoing activity for the term ;grow and care for vegetables crops e.g. leafy, fruit and root crops
Flower and ornamental plant farms	Describe the activities and products on the ornamental flower farm	Name the ornamental plants: 1.Flowering e.g. Anthurium, Heliconias ,Ginger Lilies, Ixoras 2.Foilage:e.g.crotons,Josephs Coat, Silver Mangrove, Lantanas	Collect and display specimen A foliage collection(shapes of crotons' leaves)

Poultry Farms	Identify two types of chicken farms List the different types of poultry Describe some activities on the poultry farms List poultry products	Housing, feeding medication, collection of eggs etc.	Collect and display pictures. Invite a poultry farmer to discuss the activities on the farm. Rearing poultry [broilers: a term activity 6 weeks] Keeping daily records of poultry rearing.
Livestock farms [meat]	Identify livestock reared for meat List products from the meat farms	Cattle ,goats ,sheep, pigs rabbits and wild animals Name meats and the different products.	Collect land display labels and tins. Match the meat products with the livestock. Make a model of a livestock farm.
Dairy Farms	Name and describe the activities done in a dairy farm –cattle, goat. List products and processed products from the dairy farm.	Housing, feeding, care of pregnant and young. Fresh milk, butter and cheese.	Collect and display pictures on wall charts. Invite a dairy farmer to discuss the activities on the farm.
Aquaculture Farms	Name livestock on the aquaculture farms	Sweets/fresh water fishes: Tilapia, Cascadura ,Conchs. Prawns.	A School aquarium Create a composite picture with clippings of these animals.
Mixed Farms	Develop a concept of a mixed farm. Show the inter –relationship between crops and livestock on the farm	A mixed farm has both crops and livestock. Name and describe the activities done on a mixed farm.	Chat with the owners of mixed farms.
The Farms and the Community	Understand the importance of the farm And community Link activities between the farmer and the people in the community.	The farmer provides –food, raw materials, manures employment recreation. Farmers depend on consumers, shop owners, public health officers, market vendors and the veterinarian.	Role playing, semantic mapping Charts with resource personnel 9farmersand professionals). Agro- tourism(farm visits).

STANDARD 1 TERM III: PLANTS

TOPICS	SPECIFIC OBJECTIVES	CONTENT	TEACHING LEARNING ACTIVITIES
Uses of Plants	List the various uses of plants.	Commercial crops Food for humans and animals Beautifying our environment Medicines, Fibres, Building Material, Gum, Rubber, Soil and Water Conservation, Homes for animals Making organic matter Medicine	Collection and observation of pictures Specimen displays Garden visit ,field trip Searching the website for each use
Plants which supply food	1)Name plants which supply us with food. 2)Identify the parts of the plant that we eat	Food-tomato, sweet potato, lettuce ,orange Leaf-lettuce, patchoi ,cabbage Stem- sugar cane , spinach, celery Bark- mauby, spice. Flower -cauliflower	Collection and observation of specimen. Garden visit , fieldtrip if possible
Ornamentals	1)Name and identify ornamental plants. 2)Name the parts of the plant that beautify the environment. 3)Distinguish between foliage ornamentals and flowering ornamentals,	Flowering and foliage ornamentals Small plants –e.g. Roses, Croton, Hibiscus, Ixora, Lantana, Ficus, Ferns, Impatiens, 'Jump and kiss', Bougainvillea, Duranta, Orchids, Cacti. Trees –e.g. pink/yellow poui,Cassia, Palms, Flamboyant, Pines,Firs	Nature walks Collection and observation of specimen in the environment. Growing ornamentals Search the web for 'Topiary" –Art of shaping plants.

TOPICS	SPECIFIC OBJECTIVES	CONTENT	TEACHING LEARNING ACTIVITES
Plants which supply building materials.	1)List trees which supply us with building materials.	Lumber –cedar ,teak, mora, crappo, mahogany, etc. Uses of lumber on the farms-pens, houses, fences, trellis etc Thatch- carat, tirite	Collect samoles from saw mill or wood-work shops. Collect pictures of farm buildings/structures. Collection and observation of specimen. Making a herb book.
Medicinal Plants	1)identify plants which are used as medicine 2)Match some medicinal plants with the symptoms of illness	Common medicinal plants: Aloes, shadon beni, saffron , fever grass, Shinning bush, Shandilay, periwinkle, neem. Symptoms: cough, fever, diarrhea, boils, worms.	Chart with a herbalist[pupils' relatives who are knowledgeable about the topic]. Collect and display different raw materials and finished products. 1)Use dyes to dye cloth 2)Grow grasses to help soil conservation[keep soil covered] 3) Make simple handicraft items using bamboo, coconut straw, etc.
Other uses of plants.	State the use of plants for other purposes	Fibre- coconut, cotton, hemp Gums- rubber Perfumes-rosemary Dye- saffron, teak leaves, red mangrove Soil and water conservation grass ,bamboo, other trees. Furniture Handicraft baskets Plants protect plants.	Process foods. Store foods properly in bottles Label bottles Display labels of different processed foods Computer generated / hand written labels.
Agro-processing [food products]	Process raw materials using simple methods of processing. Give reasons for processing foods Understand the importance of cleanliness in agro-processing. Store foods. Label containers with processed foods. Match common facts on labels of different processed food products.	Processing methods are: Drying :cocoa , sliced fruits, seeds Salting slices fruits ,meats, Drying and salting: fish meats Store foods properly in bottles Label bottle :product; ingredients, dates[made; use before]	

Pot and trough culture	List containers used in pot and trough culture. Prepare pots and troughs for growing crops	New containers: clay and plastic pots Recycled containers: tins, pots, plastic containers, bins, bamboo, boxes. Steps in preparing pots and troughs: 1)Punch holes in the bottom of the containers. 2)Cover with a layer of rough un-sifted potting soil. 3)Fill the remainder of container with prepared potting soil. 4)Place plant and water.	Collect containers Prepare containers Fill containers with potting soil Grow crops/ornamentals in the containers.
Grow box culture	Identify features of a simple grow box. Prepare the grow box mix. State the advantages of using the grow box method to produce crops. Construct a grow box and produce crops in the grow box.	Materials to build the grow box Location for the grow box Materials to make the grow box mix Measurements for a standard grow box.	Design and layout of a grow box Construct a grow box Measure ratios of materials and mix the materials to fill the grow box. Grow crops in the grow box Observing and recording.
Caring for farm animals (rabbits)	List ways of caring for farm animals. Identify feeds for rabbits. Name the family of the rabbit Describe a simple hutch Provide good animal husbandry while rearing rabbits	Feeding – grass, ration, water Housing Sanitation Medication	Rear rabbits[a male and a female] Hold rabbits properly

STANDARD II TERM II

THE WEATHER AND THE FARMER

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING LEARNING ACTIVITIES
The weather	Define weather List four elements of the weather Describe some effects of the weather.	Wind ,sunlight ,temperature, clouds and rainfall. Bad weather for example are floods; drought	Make charts and symbols Collect newspaper clippings Record the weather details from the TV; radio or newspaper. Visit to a nearby farm
Dry season activities on the farms	List some of the activities on the crop farms and the livestock farms.	Agro-processing by drying Repairing livestock housing Land preparation; Irrigation	Resource person to chat about the activities on the farm Match pictures /labels of animals with their housing. Draw livestock and their housing
Wet season activities on the farms.	List some of the activities on the crop farms and the livestock farms Identify housing for some of the livestock	Digging drains Protecting livestock Rain water refills ponds and rivers Rain fed agriculture	Collect pictures of different damages Construct the simple instruments using low cost /recycled items
Weather instruments	Effects of heavy rainfall Identify the meteorologist as the weatherman. Name some of the instruments that are used to measure the elements of the weather.	Floods, damage to crops Wind vane Rain gauge Anemometer Thermometer	Classroom display of these items Use the items to collect data about the weather Make a model of a wind break using simple low cost items.
The wind	List some of the effects of the wind on the crops and livestock. Construct a windbreak Discuss the advantage of having a windbreak.	Wilting of plants Heat stress Protection from strong winds.	Grow an erect plant to demonstrate responses to a source of light.
Sunlight and temperature	Discuss the advantage of having a windbreak on the farm Observe the effects of light on the growth of seedlings. List activities which require sunlight Describe the effects of temperature on crops and livestock	Erect seedlings Agro-processing, curing pelts	

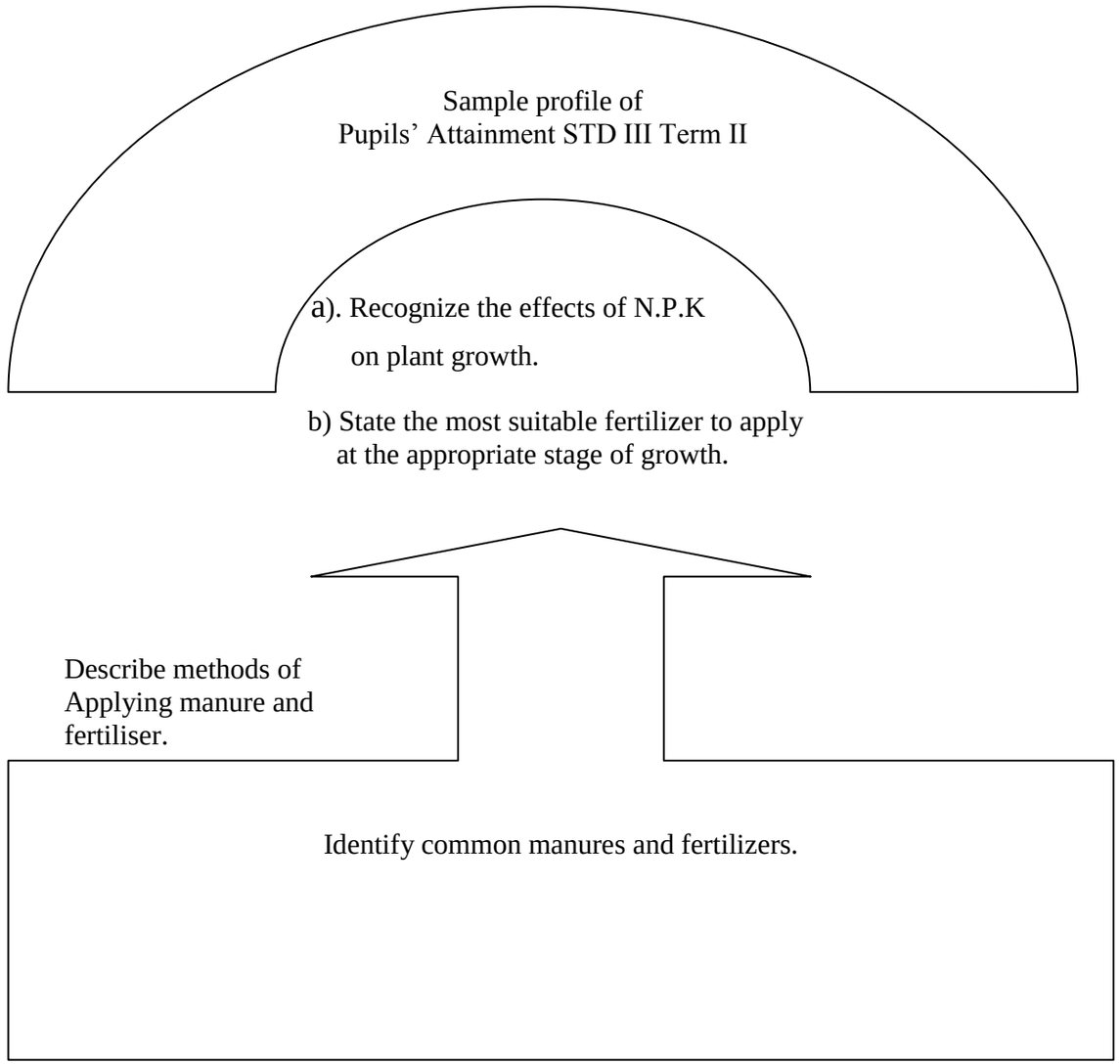
STANDARD II TERM III
ANIMAL STUDY

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING /LEARNING ACTIVITIES
Classification of animals. Helpful animals Harmful animals	Classify animals according to wild, farm or domestic animals. Determine some of the uses of these different groups of animals. Name and describe the usefulness of some large animals on the farm. Name and describe the usefulness of some small animals on the farm Name and describe the usefulness of some insects on the farm. Name and describe some large animals that the farmer considers harmful to the farm Name and describe some small animals that the farmer considers harmful to the farm. Name and describe some insects that the farmer considers harmful to farm. Name some other animals that are considered as pests on the farm	Wild animals –agouti, deer Farm animals –cow ,goat , sheep Domestic animals-chickens , ducks, dogs. Cattle, horses, donkeys, dogs. Lizards, frogs and birds. Honeybee, lady bird beetle ,Jack Spaniard Monkeys ,escaped farm animals ,caimans Birds, squirrels and opossum Harmful insects- bachac, mealy bug, citrus blackfly	Poster making on wild animals. Making a scrap book with these pictures Visit zoo farm (Note that some wildlife are being domesticated. Specimen collections. Semantic mapping to show how they are helpful Picture collection. Group and individual research. Picture collections Group discussions and research Specimen collection.

Other harmful pest on the farm Diseases in crops and livestock Other causes of poor health	Distinguish between pest and vectors. List some diseases of crops and livestock Understand that diseases are caused by vectors. Identify factors in the environment that cause poor health	Parasites: worms ticks Infections are caused by vectors. e.g. the mosquito spreads certain diseases, the tick spreads diseases. The froghopper causes bunchy top disease in paw-paw. Poor health is caused by harsh environmental factors e.g. crops[too high or low temperature water-logging, wind, poor nutrition, inadequate water. e.g livestock:[noise, temperature, poor nutrition and water, unclean pens, floods.	Collect pictures Specimen displays Match diseases with crops and/or livestock Link pest and the diseases. Illustrate using diagrams, drawings or selected pictures of crops and livestock in poor health.

Standard Three Term Two Objective Three

Plotting media.
Seed box technique.
Seedbeds.
Selecting seeds.
Direct/ indirect seeding.
Preparation of seedling for transplanting.
Transplanting seedling.
Propagation of plants.
Manure.
Inorganic fertilisers.
Economic crops of the country.
Land preparation.
Tools and equipment.
A model backyard garden



STANDARD III TERM I
SEEDLING/CROP PRODUCTION

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING/LEARNING ACTIVITIES
(1) Plotting Media	Identify different types of plotting media. Discuss the differences in texture and materials of the plotting media. State the various uses of the plotting media.	Different types of plotting media: Plotting soil Nursery soil Pro mix, Peat moss, Top soil,	Observation of some of the physical properties of the media Visit to agro-shops to collect/ record data. Display the different types of media. Practical activity Construct seed boxes
(2) Seed Box Technology	Discuss reasons why seeds are germinated in seed boxes and containers. Identify other containers and trays that are used to germinate seeds. Describe some differences between these trays and containers. Construct seed boxes. Prepare seed boxes with materials to germinate seeds. Recognize that seedbeds are also used to germinate seeds. State some advantages in using seedbeds.	Materials and tools to construct a seed box Dimensions of a seed box First layer: dry grass/ straw/ leaves Second layer: coarse unsifted soil Third layer: prepared nursery soil. Prepare seedling and seed trays: Location of seedbed. Land clearing.	Prepare of seed- boxes/ seedling/ seedling trays [Filling with nursery soil]. Germinate seeds in seedling trays and speeding trays. Germinate seeds in recycled containers. Record daily activities in a journal/ record book Practical activity: Prepare a seed bed.

Seedbeds	Prepare a small seedbed. Germinate seeds on a seedbed. List the materials that are used to protect young seedlings.	Prepare a seedbed; Primary and secondary tillage Surface layer of nursery soil Spacing drills Sowing seeds.	Design as simple cloche to protect seedlings.
Selection of Seeds	List the criteria that are used to select viable seeds. State some reason why viable seeds germinate properly. Separate viable seeds from defective seeds. Point out the main difference between monocotyledon seeds and dicotyledon seeds.	Viable seeds are: Not damaged Firm and non smelly etc. Defective seeds are non- viable seeds. Monocotyledon seeds [corn, rice] and dicotyledon seeds [red beans; bodi]	Practical activity Select viable seeds from a given quantity of seeds. Select defective seeds from the same heap of seeds. Examine water soaked seeds.
Direct Seeding	Determine that direct seeding is single activity. Name the activities in preparing a plot of land for direct seeding. List the spacing to grow different vegetable crops.	Sow seeds directly in a prepared garden plot Prepare the soil e.g. treatment of soil, addition of organic manure etc. Measure the spacing to dig holes to sow seeds.	Practical activities: Sow seeds directly using the single hole method. Practice broadcasting using sand / gravel Make observations and keep daily records of activities

Direct Seeding	State the depth that seeds are sown. Describe three methods of direct seeding Select seeds that are directly seeded. List three major activities of indirect seeding. Identify the differences between direct seeding and indirect seeding. Select seeds that can be indirectly seeded. Discuss some reasons for thinning out seedlings. Demonstrate thinning out. List reasons for hardening off seedlings. Demonstrate the transplanting of a seedling. Demonstrate how to plot a seedling.	Direct seeder equipment; manual direct seeding [broadcasting and single hole placing] Review seed box technology Steps in indirect seeding: e.g. germination; care and management of seedlings; thinning out; hardening off; transplanting seedlings Effects of overcrowding. The proper technique to thin out seedlings. Reasons for hardening off seedlings. Need to protect seedlings during hardening off. Transplant hardened seedlings (4- 6 weeks old) from seed trays/ seedbeds to garden. Simple activities to prepare garden plots: Treatment of soil, Measuring spacing, depth of holes.	Make simple tools to measure spacing on the prepared plots. Practical activity Selecting healthy seedlings. Thin out a seed box/ seedbed. Practical activity Selecting healthy seedlings. Thin out a seed box/ seedbed. Replanting healthy seedling that are thinned out. Practical activity Transplanting seedlings on t the prepared plots. Potting a seedling Record all the steps and activities in this process.

	List some practices to care for the seedlings after transplanting.	Addition of organic manure Need to protect the seedling during transplanting	Record the daily management practices in maintaining a healthy plant.
Propagation of Plants Asexually [vegetative reproduction]	List different parts of a plant that can be used to propagate new plants. Identify the bud as the main organ for vegetative production.	Examine the parts that make new plants [buds] on: Dasheen; eddoes Examine the parts that make new plants on: on the pineapple: [offsets] on the ginger lily flowers[offsets] of the banana/plantain:[suckers]	Practical activity Display these different parts of crops/ plants. Produce a chart illustrating these parts with the names.
Propagating Plants by Cuttings [vegetative reproduction]	List 3 characteristics to select trees/ shrubs to take cuttings Take cuttings from these selected trees/shrubs.	Characteristics of a selected mature plant: (a) High yields of fruit/flowers/ foliage (b) Good quality fruit/flowers/ foliage (c) Resistance to diseases Quality of cuttings- size, straightness, length, part of the stem to take cutting	Produce new plants e.g. pineapple and ginger lily; banana/ plantain
	Distinguish between soft stem / woody stem cuttings. State that [sexual] reproduction by seeds is different from reproduction using plant parts [asexual reproduction].	Plants to take woody cuttings (e.g. croton, plums, cherry, guavas). Plants to take the soft stem cuttings [jump and kiss; josephs coat]. Protection of cuttings	Identify trees in the neighborhood/ schools compound that can be selected for cuttings. Take cuttings from the mentioned plants. Pot woody and soft stemmed cuttings
A Simple Plant Propagator	State the uses of the plant propagator. Construct a simple plant propagator. Set a cutting [woody/ soft stem] in the propagator	Materials to build a propagator for one (1) cutting: a] Container 1: 2 liter plastic bottle, sharp sand, sawdust b] Container 2: Sharp sand, sawdust, plastic sheet, bucket or pan, 2 stakes.	Practical activity Make the propagator [Group/ class activity] Produce new plants from cuttings in the propagator. [use soft stemmed and woody cuttings].

STANDARD III TERM II

MANURES AND FERTILIZERS

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING/ LEARNING ACTIVITIES
Manures (organic fertilizers)	Give a simple definition of an organic manure. State the different sources of organic manures. Describe some of the physical characteristics of manure. Name different types of organic fertilizers.	How manure is obtained from plants and animals. Types- decayed trees; Pen manure, Green manure, Compost, Liquid manure, Filter press mud.	Collect and display samples [small heaps outside the building] Label heaps [sources of organic manures].
Making a Compost	List materials which can be included in a compost. Name the processes involved in composting. Describe the three stages in composting. Understand that composting reduces waste in the environment.	Biodegradable [organic] materials- vegetable peelings, remains of plants. Sources of theses materials. Stags involved in process of making a compost. Conditions for a good compost. Processes- decay/ decompose.	Collect materials for making a compost. Making a compost heap Record the time allowed for each stage. Compost materials in a bin. Apply compost to the crops on the prepared garden plots.

Inorganic Fertilizers	Identify and name common inorganic fertilizers (simple, complete) Name three major nutrients provided by fertilizers. Recognize the effects of Nitrogen, Phosphorous and Potassium on plant growth. State which are the most suitable fertilizers to apply at the appropriate stage of growth. Describe three forms of inorganic fertilizers. Describe methods of applying fertilizers/manures State advantages of applying fertilisers to the soil	Simple – Urea, Sulphate of Ammonia Ratios of complete fertilisers e.g. 12.24.12, 12.12.17.2, 20.20.20. Major nutrients: Nitrogen (N)- Leaf and stem growth Phosphorous [P]- Root development, Potassium [K]- Flowering. Growth stage: complete fertiliser and extra nitrogen Bearing stage: complete fertiliser with extra potassium From: e.g. granular; Liquid Methods of application: e.g. Broadcasting; Incorporating; Spot application. Advantages- 1) Make the soil rich (fertile). 2) Improves growth and yield.	Collect and display samples of different fertilisers. Examine samples of the different fertilisers. Practical activity Make a fertiliser chart showing what fertiliser will be applied to a sweet crop at Week 2 Week 5 Week 8 Practice these methods with sawdust/ sand or gravel. Compare two potted plants e.g. tomato: One plant in a fertile soil One plant in a poor soil.

STANDARD III TERM III

TOPIC; CULTIVATION OF CROPS

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING/ LEARNING ACTIVITIES
Economic Crops of the Country	Name some economic crops of our country. List some crops [raw materials] that are exported. List some processed food [crops] that are exported List some livestock products that are exported. Understand the importance of agriculture to the country. Discuss the ill effects that illegal crops have on the family.	Economic crops- Sugar cane, cocoa, coffee, rice, citrus etc. Importance- 1) For local industry 2) For export Agriculture provides food, employment, and earns foreign exchange through exports. An illegal crop is marijuana.	Collect samples Display items in class Visit to the fresh market. Display labels on a chart in the classroom Make simple flow charts showing paths of distribution from the farm to the consumer. Practical activity. Practical exercises by pupils.
Land Preparation Practices	Describe the two main forms of tillage. List the different land preparation practices in primary tillage. List the different land preparation practices in secondary tillage. Discuss the importance of these two practices in crop production. Name three different types of drains. State two reasons why drains are needed.	Land preparation practices: Land clearing Primary tillage Ploughing Secondary tillage Refining Application of manures and fertilisers Drainage of soil around prepared plots. Plot formation (length, width, height).	Demonstrations with manual tools. Display of samples of soil that were primary tilled alone i.e. [clods] Secondary tilled i.e. [refined soil] Compare the physical structures of these two prepared soils.

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING/ LEARNING ACTIVITIES
3) Tools and Equipment used in Land Preparation	Identify some of the tools and equipment used in land preparation. State the uses of some tools and equipment in land preparation. Match tools and equipment with the varied land preparation operations.	Tools and equipment used in primary and secondary tillage. Equipment- tractor, plough, rotavator Tools- cutlass, fork, hoe, spades, garden line	Discussion based on pictures Collect pictures and display on charts Practical Exercise by pupils
A Model Backyard Garden	Draw a plan of a small vegetable garden Design a backyard garden.	Prepared plots with: Condiments Legumes Fruit crops Medicinal Root crops	Home visits School/Backyard Garden Competition

Standard Four Topics

Managing seedlings.
Managing crops.
Harvesting crops.
Component of soil.
Types of soil.
Physical properties of soil.
A fertile soil.
Composition of fertile soil.
Chemical properties of soil.
The nursery.
Seed box technology.

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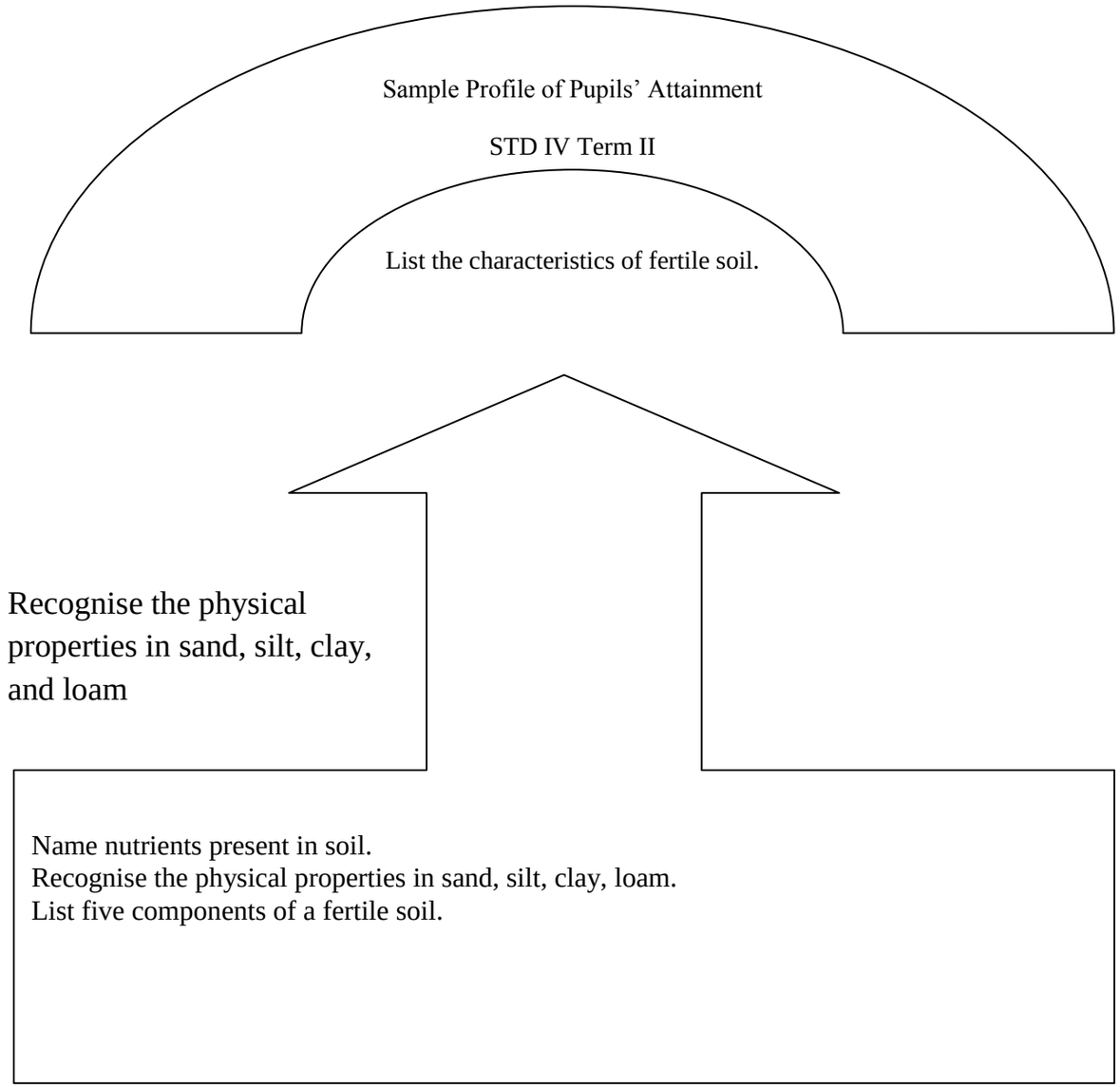


STANDARD IV TERM I
INTEGRATED PEST MANAGEMENT [IPM]

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING/ LEARNING ACTIVITIES
Integrated Pest Management	List four stages of Integrated Pest Management. (IPM) Describe the benefits of using IPM State three problems of excess pesticide use in agriculture.	Pest and disease tolerance Cultural practices Biological control Pesticide control	Draw a concept map using IPM as the theme
Pest and Disease Tolerance.	State that pest and disease tolerance is the initial stage of IPM. List three advantages of pest and disease tolerance in crops.	Do proper seed/ cutting selection Characteristics of healthy seeds Characteristics of healthy plants from which cuttings are made.	Identify healthy plants in the environment. Locate the suitable parts of the stem to take cuttings.
Cultural Practices	Identify cultural practices as the second major stage of IPM Performance cultural practices involved in the field management of crops.	Cultural practices i.e. moulding, staking, pruning, mulching, irrigation, fertilising, weed control.	Practice the activities in the school garden. Record these activities in their journals.
Cropping Practices	Describe these activities that are practised in the garden. List appropriate crops to be included in the cropping practice.	Inter- row cultivation, crop rotation, inter-cropping, cover cropping, multiple cropping.	Develop flow charts to illustrate crop rotation.
Biological Control of Pests.	Discuss the importance of biological control in IPM. Distinguish between a predator and a prey. List two main methods of biological control of insect pests.	Using the natural enemies of pest. Using the pheromones [scents] of the female insect to trap the male insects.	Draw tables to list predators and preys. Design a simple trap that may be used as a pheromone trap.

Agricultural Pesticides on a Farm	Identify when agricultural pesticides should be used on the farm. Describe bio- friendly pesticides. Describe two activities within the four major stages of IPM Demonstrate the proper techniques of harvesting of common fruit and vegetable crops. Describe each activity of post harvest care. Sequence the activities of post harvest care. Describe three benefits of proper post harvest care.	Agricultural pesticides is the final stage in controlling pests on the farm When harvesting consider maturity period of crop (with respect to use), harvesting time, harvesting periods. Harvesting tools and equipment e.g. Knife; lettuce, pakchoi, carailli, spinach Cutlass [machete]: bananas Goulet: cocoa, coconuts, paw- paw Harvesters: rice, sugar cane Post harvest activities: Sorting, cleaning, washing, grading	Visit to the agricultural shop. Collect labels and brochures of various pesticides. Design a detailed concept map to describe IPM Practical activity Record taking Participate in harvesting activities in the school garden. Make a flow chart to show the sequence of post harvest. Discuss the effects of poor post harvest.

STANDARD IV TERM II

SOIL STUDY

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING/ LEARNING ACTIVITIES
1) Components of soil	1) List five components of soil	Components- sand, silt, clay, humus, air, water, etc. Soil organisms- earth worms, snails, millipede, mole, cricket etc.	Practical activity Experiment to show layers in soil sample. Observing soil organisms Experiment to show soil has air.
2) Types of soil	Recognize and identify the four main types of soil. Define the term loan	Types- sand, silt, clay, loam structure and texture of soil.	Observation of different soil types.
3) Physical properties of soil	Recognize the physical properties in sand, silt, clay, loam.	Physical properties- drainage, water retention air/ pore space, capillarity. Controlled experiments to explore these physical properties.	Practical activities [group work]. Experimenting with different soil samples.
4)A fertile soil	List the characteristics of fertile soil. List nutrients required by crops Describe the major activities which improve a soil's fertility.	Characteristics- made up of sand, silt and clay combined good drainage/water retention.	Observe growth of seeding in different soil samples (sand, clay, loam).
5)Composition of a fertile soil	State the various components and percentages in a loamy soil.	Air 25% Humus 5% Mineral matter (sand, silt, clay) 45% Water 25%	Drawing pie chart to represent percentages.
6) Chemical Properties of soil.	Name nutrients present in the soil. Draw and discuss the use of a Ph scale. State one way of reducing soil acidity.	Nutrients- N, P, K, Ca, Mg, S. Ph scale- acidic/ alkaline. Use of limestone.	Oral discussions. Practical activities in the school garden.

Conservation Practices	List five methods of soil conservation. Describe the benefits of proper soil conservation practices. Describe three effects of soil loss on crop and livestock production.	Methods- contour (drainage and cropping) ground covers, grass barriers, terracing with bamboo/ wooden planks, mulching, soil traps.	Models to show soil erosion and conservation practices. Demonstrate some of these methods in the school garden.

STANDARD IV TERM III

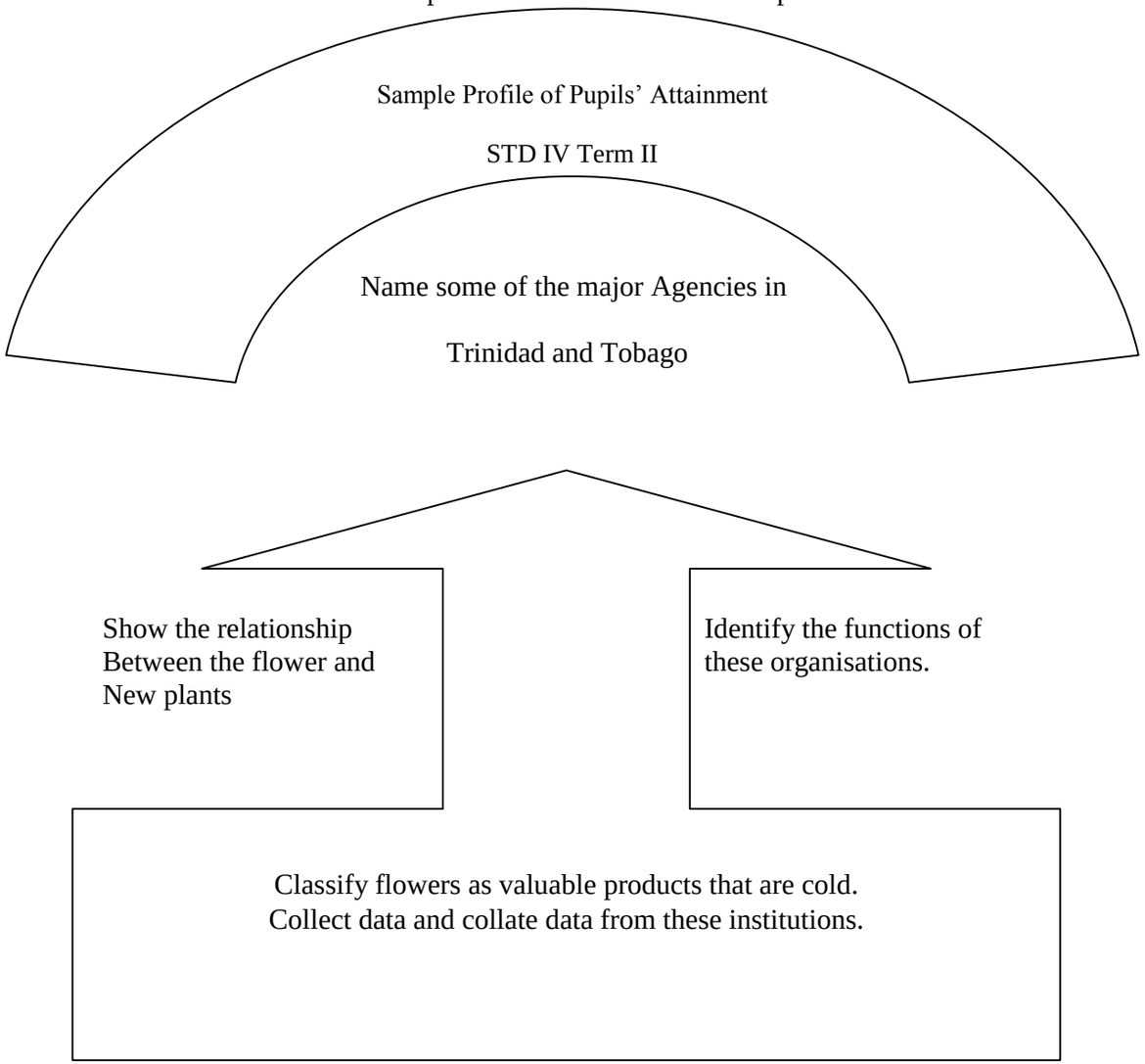
TOPIC- THE NURSERY

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING/LEARNING ACTIVITIES
1) The Nursery	1) State the function of a nursery.	Function- 1) Sowing/ germination of seeds 2) Protecting seedlings, from rain/ sunlight	Visit to school garden nursery. Observation of pictures.
Structure of the nursery		Structure Covered with plastic sheets, saran netting or polythene Raised shelves	
Locating the nursery		Sitting- low wing, shaded from sunlight, good drainage.	
Organic farming	Define organic farming. List three advantages of organic farming. Describe simple methods of pest and disease management. Identify plants that are used to control pests. Describe the process of application of organic pesticides.	Growing crops without chemicals Cultural practices: land preparation seed selection crop rotation. Neem, marigold, garlic, hot pepper.	Collect specimens of the protective crops. Grow the crops Blend in water the leaves, cloves and fruits of these plants to make an organic pesticide.

Standard Five Topics

Technology in Agriculture
The Flower
Roles of Organisations/ Agencies in Agriculture in Trinidad and Tobago.
Plant Propagation

Relate the importance of the flower in food production.



STANDARD FIVE TERM I
AGRICULTURE, TECHNOLOGY AND THE ENVIRONMENT

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING/ LEARNING ACTIVITIES
Agriculture and the Environment	Outline three problems that affect the environment. List some green house gases. Describe the dangers of agricultural chemicals that remain in the water and soil. Discuss the outcomes of these problems.	Soil erosion: Loss of top soil. Loss of different forms [biodiversity] of living things. Carbon dioxide; CFC, nitrous oxide Greenhouse gases to cause the climate change of the world to change. Poverty/ Lack of proper nutrition/unable to produce food/depends on other countries for food.	Make a model to demonstrate soil erosion List some green house gases Collect pictures and display on charts Display a map of the country where pollution occurs.
Agriculture and the Environment	List some practices in agriculture that benefit the environment. Discuss how these practices are beneficial. Suggest ways how proper agriculture practices can help the environment.	Crop cover to prevent soil erosion Reforestation to prevent erosion on slopes and replace forests that were cut down for logs Organic farming/ organic fertilisers allows and encourages natural food chains so living creatures are not destroyed. Organic farming/organic fertilisers reduce the quantity of agricultural chemicals in the environment. The leaves of all plants absorb CO_2 [Green house gas] from the atmosphere. Composting reduces wastes in the environment.	Draw and label diagrams/ figures/ pictures to illustrate soil conversation measures. Build a model to show a simple food chain Write/ e-mail correspondence to the environmental authorities and ministry of food production [Agriculture]. Discussion with qualified professional individuals in the classroom/ field trips Measure how much organic waste material is sent to the compost heap. Set up a system in the classroom to separate wastes.

Technology in Agriculture	List three major technologies that are applied to agriculture. Describe these terms. List two crops that are produced by tissue culture. State some advantages of tissue culture over other means of asexual reproduction. List reasons why hydroponics is used in agriculture. Discuss the use of green houses in temperate climates/ tropical climates. Ago- processing [non- food products]	Tissue Culture; Cloning, Genetic engineering, genetically modified foods [banana] Mass production of new plants Ideal specimens Disease free propagation Soil-less agriculture green houses Hydroponics; soil- less growth Poor soil conditions; limited water resources; off-season demand for high priced crops. Green houses: temperature control; humidity and water control; air control. Lumber; cut flowers; Coconut brooms/ thatch	Collect information on current world events. Use the internet to secure information. Group research and written projects. Oral presentation to their peers. Display on brochures and information on these topics. Experiments/ hydroponics project to product crops using this system. Produce flow charts.
Improving the Quality of Livestock and Crops	Explain the role of genetic engineering in crop and livestock production. Provide reasons that livestock and crops are genetically modified. Give examples of some crops that are genetically modified. List some breeds of livestock that have been genetically engineered.	Genetic engineering is a process of change to get desired traits/ characteristics. Genetic engineering is done to improve breeds of livestock and varieties of crops. Genetic engineering improves the breeds of livestock and varieties of crops Buffalypso	Match the reasons for G E with selection of cuttings.

STANDARD V TERMM II

AGRICULTURAL ORGANISATIONS/ AGENCIES IN TRINIDAD AND TOBAGO

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING/ LEARNING ACTIVITIES
The Flower	Discuss the importance of the flower in food production Show the relationship between the flower and new plants. List flowers sold locally and internationally as valuable products.	Flowers grow into fruits. Sexual reproduction in flowers to produce seeds. Role of helpful insects in pollination Ornamental flower trade	Matching seeds and fruits Create a flow chart/ cycle flower…→ fruit……→ Seeds…→new plant Making simple bouquets with ornamental flowers. Insect collection Field observation of the activities in insects Visits to the flower shop. Web searches: 'flower trade'
Roles of Organizations/ Agencies in Agriculture in Trinidad and Tobago. Preparation for Budding/ Grafting.	Name some of the major Agencies in T&T Identify the functions of these organizations. Collect and display data from these institutions. Produce seedlings of Citrus/ Mango/ Avocado.	ADB; EMA;IICA CARDI; NAMDEVCO; IMA CARIRI; Caroni [1975] Limited; Min of Food Production and Marine Resources; University of the West Indies; Commercial Banks; Livestock Board; ECIAF; FTC; EXIM Bank; etc. Horticultural society.	Collect brochures Chats with resource personnel Field Trips Role Playing Communication via their websites. **Sow viable seeds of Cleopatra Mandarin/ local avocado/ long or rose mango in bags of potting soil.** **These seedlings are required for next term's activities.**

STANDARD V TERM III

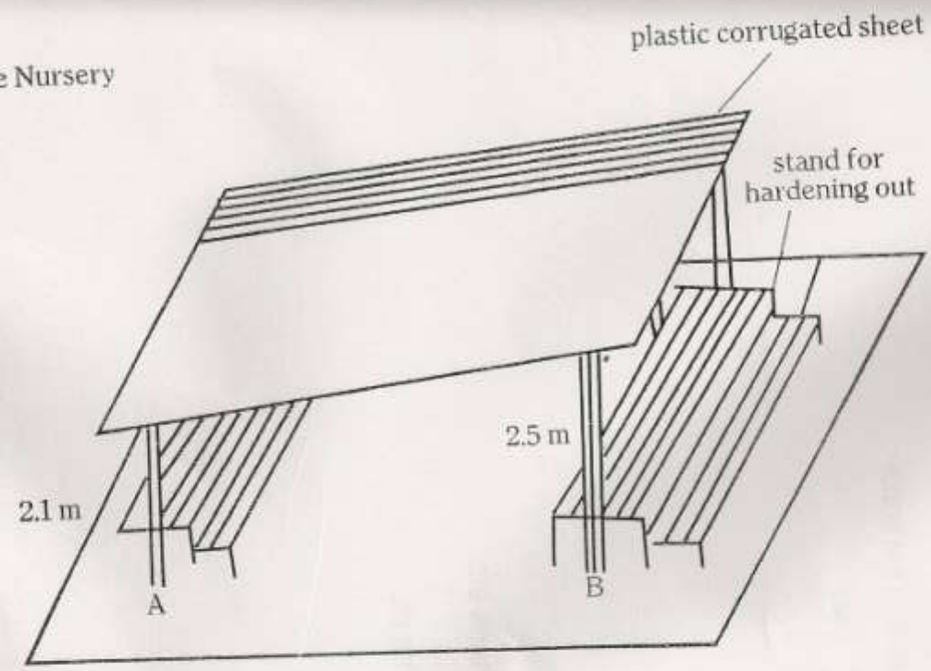
PLANT PROPAGATION

TOPIC	SPECIFIC OBJECTIVES	CONTENT	TEACHING/ LEARNING ACTIVITIES
The Plant Propagator	List materials used in making a propagator List the tools and materials needed to construct a propagator. Construct and prepare a simple propagator	Construction of propagation- recycling- used fridges, stoves, oil containers, filing cabinets. Materials in the propagator- gravel, sand, rooting medium (sawdust, rice husk, sharp sand)	Construct a propagator Collect materials for the propagator
Propagation by Layering	Name plants that are commonly propagated by layering. Performing air layering on the hibiscus. Illustrate simple ground layering	Air layering- hibiscus, rose, croton Ground layering- coleus (Joseph's coat), Spanish Thyme Selection of high quality materials [stems]	Collection, labeling, display, sowing, experimenting, record keeping.
Propagation by Budding/ Grafting	Name plants which are propagated by budding Perform a simple graft. Give examples of plants that are produced as rootstock.	Budding: citrus, oranges, grapefruits Grafting: mango, avocado	Identify suitable trees to remove scion. Cut of stem [scion] that will be grafted on the root stock. Pupils may do a graft of one of the fruit crops or demonstrate the graft using appropriate materials.

ASSESSMENT STRATEGIES

1. Demonstration of skills
2. Quiz.
3. Garden and Classroom Projects.
4. Essays.
5. Cloze Passages.
6. Portfolios.
7. Material Production e.g. Brochures, Posters, Charts etc.
8. Record Keeping.
9. Models e.g. Soil Conversation, Landforms, Farms etc.

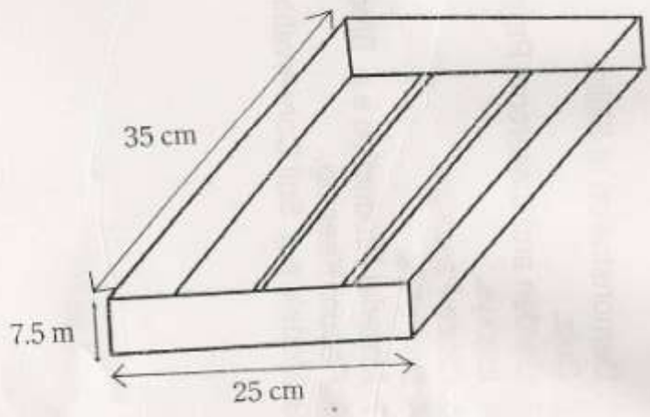
The Nursery



Dimensions A to B = 3.3 m
B to C = 4.0 m

Height of top stand from ground .8m
Height of lower stand from ground .6m

Seed Box
(Constructed from box board



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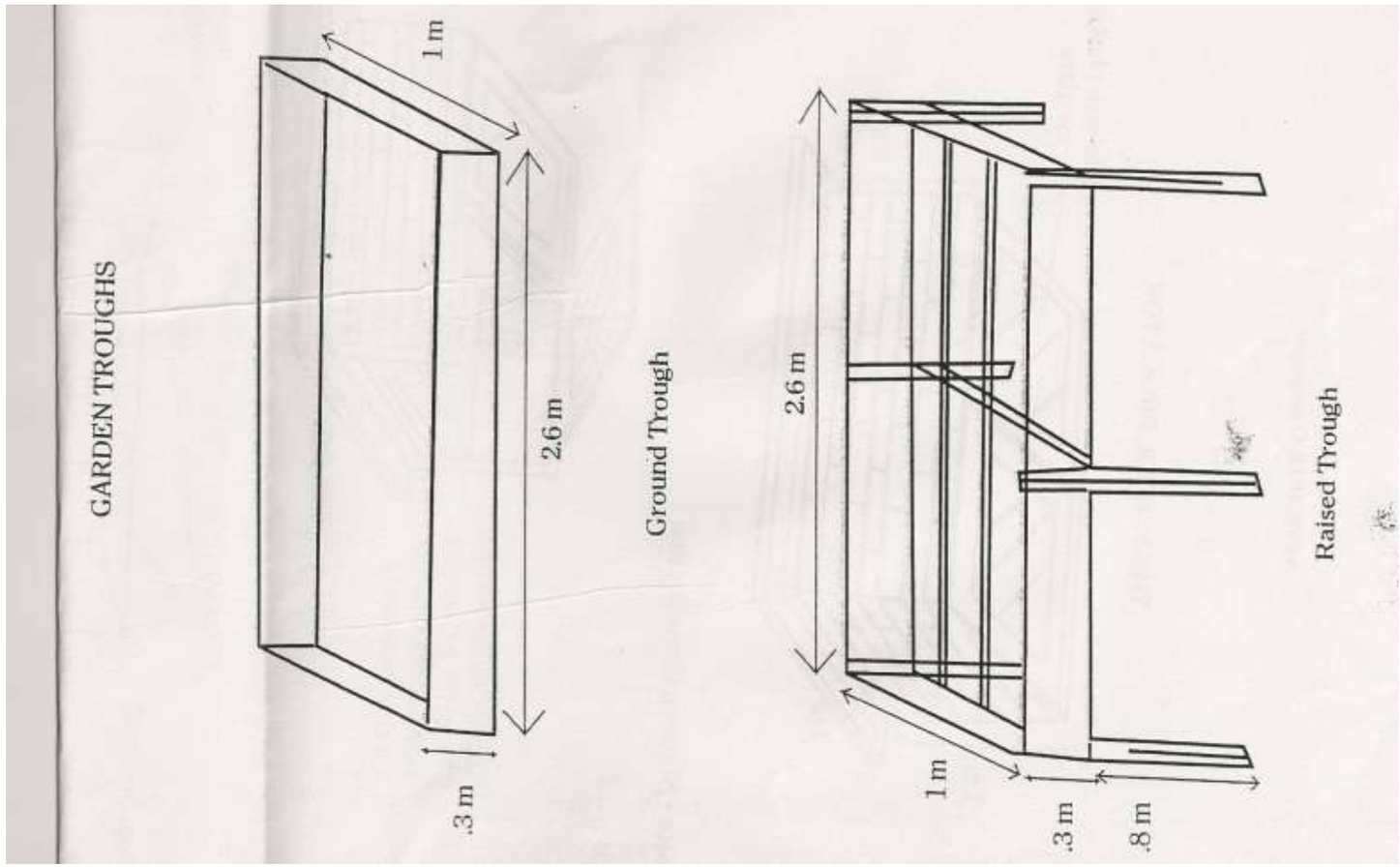
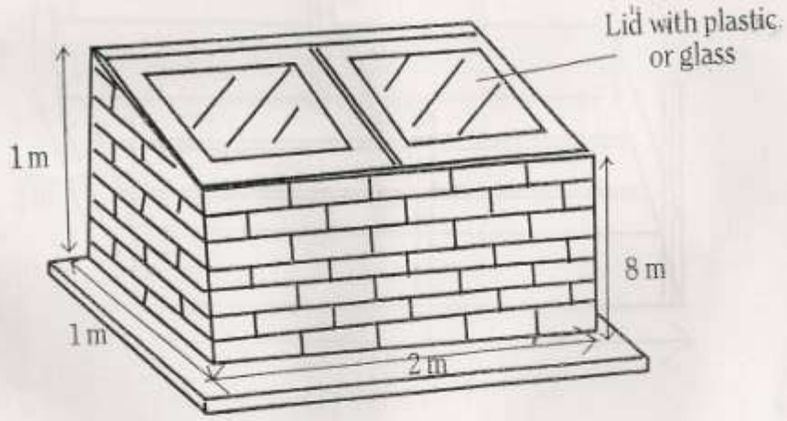
APPENDIX A NURSEY

APPENDIX B GARDEN TOUGHS

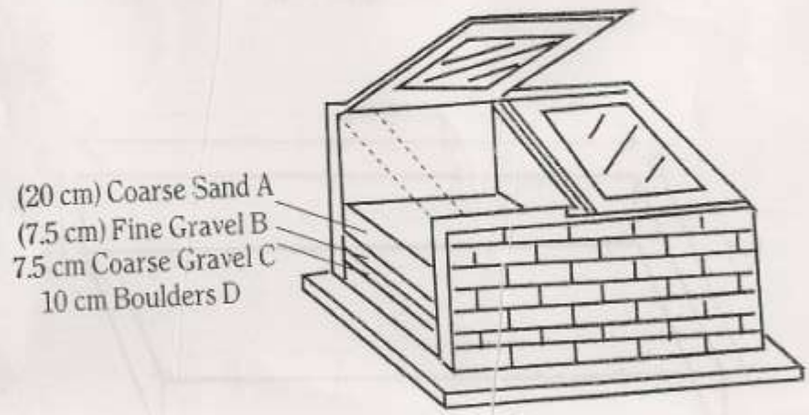


APPENDIX C PROPAGATOR

THE SCHOOL PROGATOR



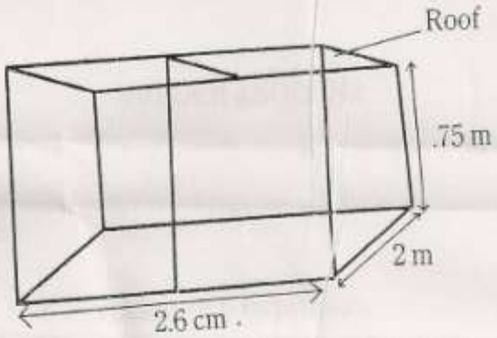
Progator - Showing Cross Section



Progator - Showing Cross Section

Covered with
Polythene sheeting
on wire netting

Progator Shed



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- The Supervisory Staff of the Education Districts.
- Curriculum Facilitators from the eight Education District.
- The Agricultural Science Facilitators [2000-2002] from the Education Districts:

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- All the individuals who have contributed immensely towards the completion of this document.

The curriculum recommended here attempts to expose the primary school pupil to some of the modern trends in the field of Agriculture and encourages practice in basic skills that can be mastered within the periods timetabled for the teaching of Agricultural Science.
My sincerest regards to all the contributors for their critique, comments and encouragement throughout this exercise.

Dipwatee Maharaj
Curriculum Officer: Agricultural Science
Ministry of Education
Republic of Trinidad and Tobago.
October 2001.