PARAMOUNT SCIENCE NOTES
PRIMARY SEVEN
TERM THREE

TOPIC ONE: INTERDEPENDENCE OF THINGS IN THE ENVIRONMENT

ENVIRONMENT

- Environment refers to all things that surround an organism

Main components of the environment

- Plants
- Animals
- Water
- Air
- Soil
- Sun

Plants and animals are the main **organic components** of the environment

TYPES OF THE ENVIRONMENT

- Biotic (biological) environment
- Abiotic (physical) environment

Biotic (biological) environment

- This is the type of environment made up of living things

Components of biotic environment (living components of the environment/groups of living things)

- Plants
- Animals
- Bacteria (monerans)
- Fungi
- Protists

Abiotic (physical) environment

- This is the type of environment made up of non-living things

Components of abiotic environment (non-living components of the environment)

- Soil
- Water
- Air
- Sun

INTERDEPENDENCE

- This is the way how things depend on each other in the environment.

How do animals depend on plants?

- Some animals (herbivores) get food from some plants.
- Some animals get shelter from plants
- Animals get herbal medicine
- Animals get oxygen for respiration
- People get plant fibres from plants (e.g. cotton wool, sisal, jute, flax, hemp, raffia and ramie)
- People get wood fuel from plants
- People get wood for timber from plants
- Animals get shades from plants

How do plants depend on animals?

- Plants get carbon dioxide from animals to make glucose (starch)
- Plants get farmyard manure from animals
- Some animals help in pollination of flowers
- Some animals help in seed dispersal
- Carnivorous plants feed on some insects

Examples of carnivorous plants

- Venus flytrap
- California pitcher plant (Cobra lily)
- Sundew (Drosera)
- Nepenthes
- Bladderwort

How do animals depend on other animals?

- Some animals provide food to other animals
- Some animals provide protection(security) people and other animals
- Some animals provide transport to people (e.g. donkey, camel and horse)
- Some animals provide animal labour to people (e.g. oxen)
- Some animals (hosts) provide shelter to other animals (parasites)
- Some animals provide animal fibres to people (e.g. mohair, wool, silk, Angora hair and Chiengora)

Examples of guard animals

- Dogs
- Donkeys
- Dolphins
- Llamas
- Geese

How do plants depend on other plants?

- Some plants climb others to get enough sunlight and extra support
- Plants depend on other plants as habitat
- Tall plants provide shade to short plants
- Strong plants protect weak plants from strong wind
- Leguminous plants fix nitrogen in the soil which is used by other plants.
- Parasitic plants-get nutrients from other plants

How do animals depend on non-living things?

- Animals use oxygen for respiration
- Animals drink water to survive
- Some animals use soil as their habitat
- Some animals use sand soil and stones for construction
- People use clay soil for brick making and pottery
- People use water for bathing and cooking food
- Animals use heat and light from the sun

How do plants depend on non-living things?

- Plants get water and mineral salts from the soil
- Plants use carbon dioxide and water to make glucose (starch)
- Sunlight helps plants to make glucose (starch)
- Wind helps in pollination.
- Plants use oxygen for respiration at night
- Wind aids in seed and fruit dispersal

How do non-living things depend on living things?

- Trees act as windbreaks to control soil erosion
- Bacteria and fungi help in soil formation
- Plants help in water cycle
- Soil organisms improve soil aeration
- Animal wastes act as manure to improve soil fertility
- Plants purify air during photosynthesis

FOOD CHAIN

- This is the feeding relationship among organisms (living things)
- This is the linear sequence for the transfer of food energy from one organism to another

Ecosystem

- This is a community of organisms in a habitat

Habitat

- This is a natural home of an organism (living thing)

Biodiversity

- This is the variety of living things in an ecosystem

Trophic level

- This is the position that an organism occupies in a food chain

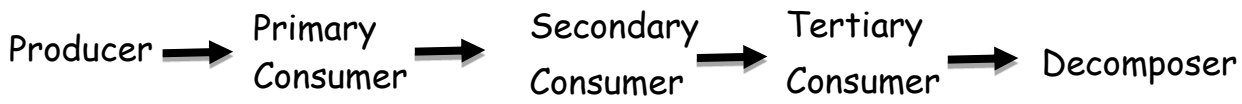
Components of a food chain (trophic levels in a food chain)

- Producer
- Consumers
- Decomposer

Groups of consumers in the food chain

- Primary consumer
- Secondary consumer
- Tertiary consumer

AN ILLUSTRATION SHOWING A FOOD CHAIN



EXPLANATION OF THE FOOD CHAIN

The arrow ⟶

- The arrow **shows** the direction of energy flow
- The arrow in a food chain points from the food to the organism that eats it

Producer

- This is an organism that makes food

They are usually **plants, algae and cyanobacteria**

Why are plants regarded as producers?

- They make their own food

Of what use is the sun in a food chain?

- It provides solar energy (sunlight)for plants to make their own food

Primary consumer

- This is an organism that feeds directly on a producer

They are mainly **herbivores** because **they feed on plants**

Secondary consumer

- This is an organism that feeds on a primary consumer.

These are mainly **carnivores** because **they feed on flesh (meat)**

Tertiary consumer

- This is an organism which feeds on a secondary consumer.

They are mainly **scavengers** because **they feed on abandoned meat**

What do we call the "Apex predator" in a food chain?

- This is an animal at the top of a food chain, preying but not prey.
- It is a tertiary consumer

Decomposer

- This is an organism that causes decay or rotting

They are mainly **bacteria** and **fungi** because **they break down dead organic matter**

Why do decomposers have the highest population in a food chain?

- They do not have any organisms that depend on them.

EXAMPLES OF FOOD CHAINS

1. **Ground nuts ⟶ Rat ⟶ Cat ⟶ Bacteria**
2. **Maize ⟶ Grasshopper ⟶ Hen ⟶ Eagle ⟶ Fungi**
3. **Leaves ⟶ Caterpillar ⟶ Bird ⟶ Dog ⟶ Bacteria**
4. **Algae ⟶ Fish ⟶ Man ⟶ Bacteria**

What happens to the food chain when all producers become extinct (die off)?

- The food chain collapses (the food chain undergoes population crash)

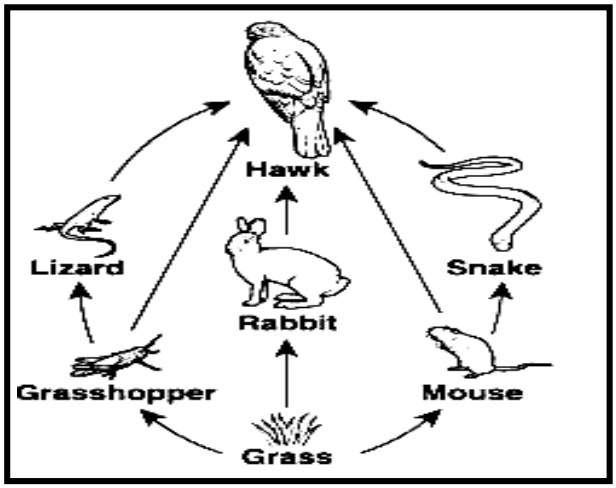
What happens to producers when primary consumers reduced?

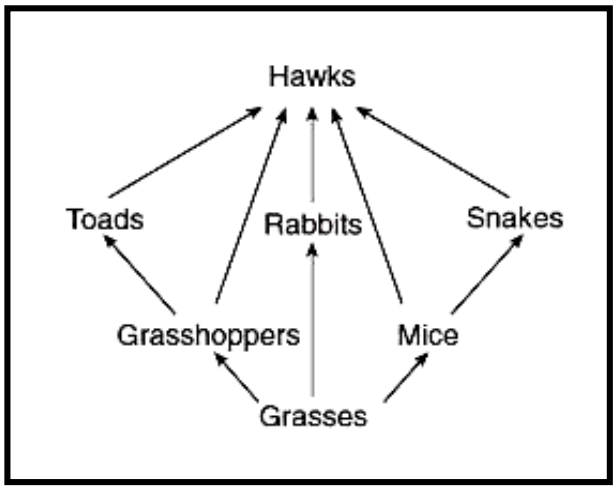
- The population of producers increases

FOOD WEB

- This is a connection of multiple food chains

Illustrations showing food web





GROWING CROPS AND TREES

A crop

- This is a plant grown for a purpose
- This is a plant grown and cared for

Reasons why people grow crops

- To get food (to promote food security)
- To get money after selling harvested crops
- To get raw materials for agro based industries
- To get plant fibres

Importance of a school garden

- It enables school children to practise crop growing
- It enables school children to learn how to dig
- It is a source of food for the school
- The school gets money after selling excess food
- It helps in agriculture practical lessons

Factors to consider when plan starting a school garden.

- Capital
- Land
- Labour
- Availability of planting materials
- Availability of garden tools
- Well drained soil

GROUPS OF CROPS

- Annual crops
- Biennial crops
- Perennial crops

ANNUAL CROPS

- These are crops that take one year to mature

Examples of annual crops

- Beans
- Tomato
- Maize
- Cowpeas
- Groundnut
- Bitter tomato
- Soybean
- Eggplant
- Millet
- Rice
- Cassava
- Simsim

BIENNIAL CROPS

- These are crops that take two years to mature

Examples of biennial crops

- Onions
- Carrots
- Beets

PERENNIAL CROPS

- These are crops that take more than two years to mature.
- These are crops that are planted once and harvested year after year.

Examples of perennial crops

- Oil palm
- Mango
- Coffee
- Tea
- Sugarcane
- Vanilla
- Banana
- Cocoa

NOTE

- Cotton and tobacco are perennial crops in nature but always grown as **annual crops.**

TYPES OF CROPS

Food crops

- These are crops grown for food like legumes, vegetables, cereals and fruits

Cash crops

- These are crops grown for sale like rubber tree, coffee and tea

Spice crops

- These are crops that give our food taste and sweet aroma like tomatoes, ginger, pepper and onion

Tuber crops

- These are crops with swollen edible underground stems or roots like cassava, carrot, Irish potato, white yam and sweet potato

Why is a sugarcane not a stem tuber yet it stores its food in the stem?

- ✓ It does not have a swollen underground stem

Oil crops

- These are crops grown for oil like oil palm, coconut and groundnut

Drug crops

- These are crops used to cure diseases and wounds like Neem tree and eucalyptus

Forage crops

- These are crops grown for feeding animals like guinea grass and elephant grass

Fibre crops

- These are crops that provide materials for weaving clothes, ropes , bags and sacks like sisal, cotton and jute

Ornamental crops

- These are crops grown to beautify the surroundings

Ornamental crops include; rose flower and hibiscus flower

Vegetable crops

- These are crops grown for some of their edible parts such as leaves, roots, fruits and flowers

TYPES OF VEGETABLES AND THEIR EXAMPLES

Type of vegetables	Examples
Leafy vegetables	Cabbage, spinach, lettuce, pigweed, sukuma wiki
Root vegetables	Carrot, beet
Fruit vegetables	Eggplant, bitter tomato, tomato, green pepper, red pepper
Flower vegetables	Cauliflower

AGROFORESTRY

- This is the growing of crops and trees together in the same garden
- This is the growing of productive trees alongside crops in the same garden

Importance of agroforestry

- Trees provide shade to the crops
- Trees provide extra support to weak stems like passion fruits.
- Trees control soil erosion
- Trees help in water cycle (rain formation)
- A farmer gets double income e.g crops and trees
- Shady trees prevent growth of some weeds
- Tree leaves form manure when they rot

Advantages of combining agroforestry with animal husbandry

- Trees provide shade to animals
- Trees act as live fences on livestock farms
- Trees and crops provide oxygen to animals for respiration
- Trees provide natural habitat to animals
- Some crops act as food for animals

GROWING OF TREES

- Trees are either grown (propagated) by using **seeds** or **stem cuttings**

Groups of trees

- Local (indigenous trees)
- Exotic trees

Examples of indigenous (local) trees

- Mvule
- Mangoes
- Avocado
- Jackfruit
- Musizi
- Acacia
- Mahogany
- Natal fig (mutuba)

Characteristics of local trees

- They produce hard wood
- They mature slowly
- They are resistant to bad weather conditions

Examples of exotic trees

- Cypress
- Gingko
- Pine
- Cedar
- Podo
- Spruce
- Eucalyptus
- Fir

Characteristics of exotic trees

- They produce soft wood
- They mature quickly
- They are vulnerable to bad weather

IMPORTANCE OF TREES

- Trees provide shade to people
- Trees control soil erosion
- Trees help in water cycle (rain formation)
- Trees act as windbreaks
- Trees provide wood fuel
- Trees provide wood for timber
- Some trees provide us with fruits
- Some trees provide herbal medicine
- Some trees act as live fences
- Trees purify air

How do trees purify air?

- ✓ By using carbon dioxide and producing oxygen during photosynthesis

DANGERS OF TREES

- They hide dangerous animals like snakes
- Thorny trees skin injuries
- They shed leaves which make the compound dirty

QUALITIES OF GOOD PLANTING MATERIALS (GOOD SEEDS FOR PLANTING)

- They should have a high germinating rate
- They should be free from pest damages
- They should be free from diseases
- They should be mature
- They should be of a right variety
- They should not be broken
- They should be obtained from healthy parent plant
- The cereals should not have overstayed
- They should be of a suitable size

STARTING A TREE NURSERY BED

- Tree seeds can be planted into seedbeds, nursery beds or polypots
- Most tree have very small seeds which are first planted in a seedbed or nursery bed

Why is it difficult to grow cassava and banana using seeds?

- Their seeds may not be viable (seeds do not germinate)

Why can't cassava be propagated by use of root tubers?

- Cassava root tubers do not have buds

SEEDBED

- This is a small garden where seeds are planted to make them germinate.

NURSERY BED

- This is a small garden where seedlings are raised before transplanting.

Advantages (importance) of a nursery bed

- It protects seedlings from harsh weather
- It helps a farmer to select good seedlings for transplanting
- It helps a farmer to provide extra care to the seedlings
- It gives a farmer enough time to prepare the main garden

PROCEDURES (STEPS) FOR PREPARING A NURSERY BED

- Clear the weeds and plough the land
- Break the big soil lumps and make the soil surface smooth and fine.
- Mix the manure well with soil and plant the seeds
- Apply some mulch and construct a shade about one metre high.

Why should watering should be done every evening and morning?

- To keep the soil moist for a longer time.

Why are some seeds first planted in a nursery bed or seedbed?

- They are too small to withstand harsh conditions in the main garden
- To be given extra care

Examples of crops whose seeds are first planted in a seedbed (nursery bed)

- Tomato
- Coffee
- Cabbage
- Passion fruit
- Eucalyptus
- Red pepper
- Bitter tomato
- Egg plant

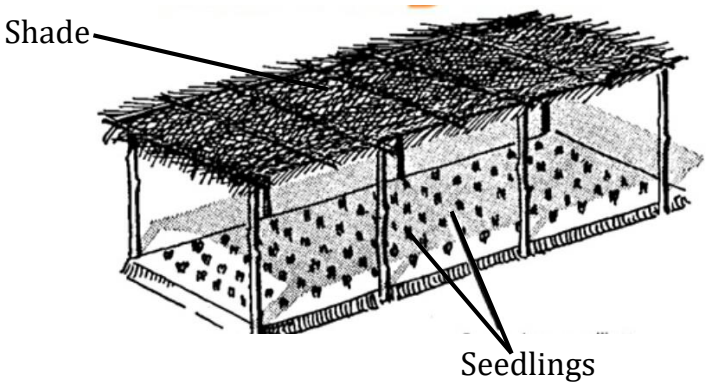
What is pricking out?

- This is the transfer of congested seedlings from a seedbed to polypots

REQUIREMENTS FOR STARTING A NURSERY BED

- Wooden poles; for building shelter
- Hoes; for weeding/ploughing/harrowing
- A rake; for leveling soil
- Watering can; for watering crops
- Polythene papers; for making polythene polypots
- Mulches (e.g. dry grass); for mulching
- Water source; to provide water for irrigation
- Panga
- Dibber; for making holes where seeds are planted
- Manure; for making the soil fertile
- Seeds or stem cuttings
- Hand fork ;for light weeding in a nursery bed

A DIAGRAM SHOWING A NURSERY BED



Importance of a shade on a nursery bed

- To protect seedlings from strong sunshine and heavy rainfall

What is a seedling?

- This is a young plant raised from a seed

CARE FOR SEEDLINGS IN A NURSERY BED (ACTIVITIES DONE IN A TREE NURSERY)

- By watering
- By weeding
- By spraying with pesticides
- By thinning
- By mulching
- By manuring
- Providing them with a shade
- By fencing the nursery bed
- By hardening off

METHODS OF APPLYING FERTILIZERS

- Broadcasting (top dressing)
- Placement (band placement and ring placement)
- Spraying (foliar application)
- Fertigation (application of fertilizers through irrigation system)

HARDENING OFF

- This is the process of gradually exposing seedlings to outdoor conditions

✓ Hardening off should be done when about to transplant the seedlings

Ways (methods) of hardening off

- Reducing watering
- Removing the shade gradually (exposing of seedlings to sunshine gradually)
- Exposing of seedlings to wind gradually
- Placing the seedlings in a cold frame

Advantages of hardening off

- It encourages the seedlings to withstand the conditions in the main garden
- It prevents transplant shock (reduces plant stress)

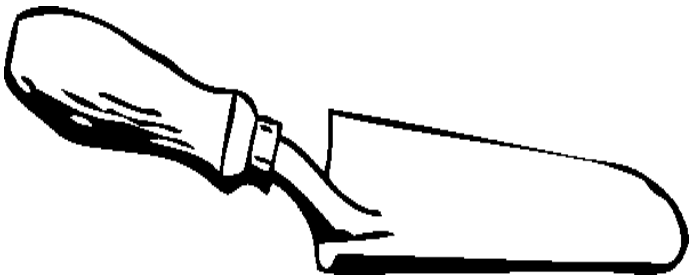
Steps for hardening off

- Place seedlings outside in the shade for sometime
- Gradually lengthen exposure daily
- Monitor seedlings for wilting
- Finally leave seedlings out overnight

TRANSPLANTING

- This is the transfer of seedlings from the nursery bed to the main garden.
- ✓ It is done using a **garden trowel**

A drawing showing a garden trowel



- A **garden trowel** is used for transplanting seedlings

Why is the garden trowel the suitable garden tool for transplanting seedlings?

- It does not damage the root system of the seedling

Reasons why transplanting seedlings is done in the evening or on a cloudy day

- To reduce the rate of transpiration

Why is evening time the best for transplanting?

- It prevents wilting since the rate of transpiration is low

Why should seedlings be well watered a day before transplanting?

- To enable soil stick onto the roots
- For easy removal of polypots from the seedling

PLANTING

- This is putting of planting materials in the soil
- ✓ It is done during **wet season**

Reasons for planting crops in wet season

- There is enough rainfall to support plant growth
- There is enough water for seed germination
- The soil is soft for easy growth of roots

METHODS OF PLANTING

- Row planting
- Broadcasting

1. ROW PLANTING

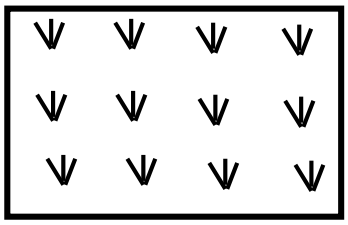
- This is the planting of crops in lines giving proper space among plants.
- It is done using a **garden line**

A diagram showing a garden line

How is a garden line useful to a crop farmer?

- It is used to make straight lines during row planting

An illustration showing row planting



Advantages of row planting

- It makes weeding easy
- It makes harvesting easy
- It makes spraying easy
- It controls over crowding of crops
- It controls pests and diseases
- It prevents wastage of planting materials (e.g seeds)
- It enables crops to get enough sunlight

Disadvantages of row planting

- It needs much labour
- It is time consuming
- It requires a large piece of land

Example of crops planted by row planting

- Maize
- Cassava
- Beans
- Potatoes
- Coffee
- Pineapples

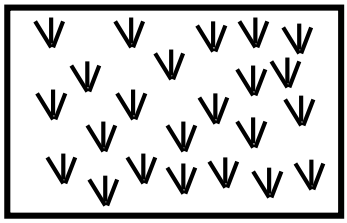
2. BROADCASTING METHOD

- This is the method of planting by scattering seeds over a large area

Advantages of broadcasting methods

- It saves time
- It needs less labour
- It prevents wastage of soil nutrients

An illustration showing broadcasting



Disadvantages of broadcasting methods

- It makes weeding difficult
- It makes harvesting difficult
- It makes spraying difficult
- Seeds may be eaten by birds
- Seeds may be removed by agents of erosion
- It encourages easy spread of crop diseases
- There is competition for nutrients and sunlight

Examples of crop seeds planted by broadcasting

- Carrots
- Lettuce
- Millet
- Sorghum
- Rice
- Beets

WAYS OF CARING FOR PLANTS (TREES) IN THE MAIN GARDEN

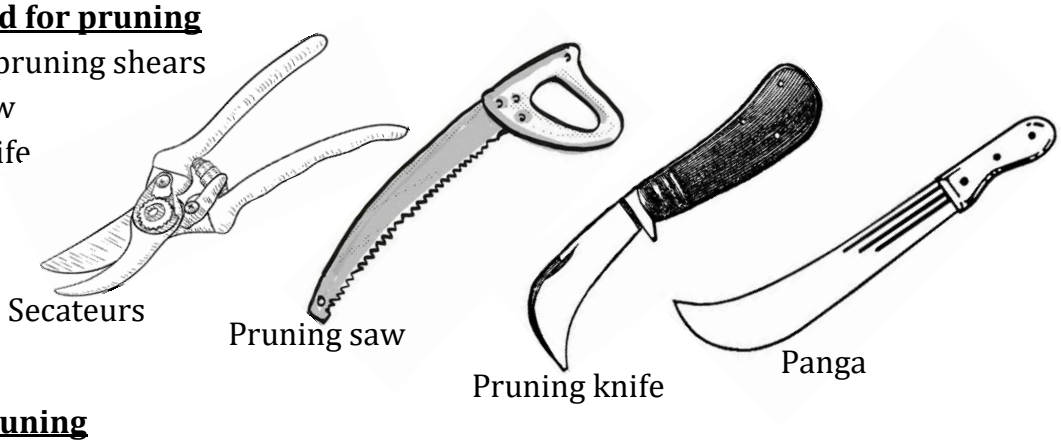
- Weeding
- Pruning
- Thinning
- Roguing
- Plant training
- Mulching
- Spraying with pesticides

PRUNING

- This is the removal of extra or unwanted parts of a plant
- This is the cutting of excess branches or leaves from a plant.

Garden tools used for pruning

- Secateurs/pruning shears
- Pruning saw
- Pruning knife
- Panga



Advantages of pruning

- It reduces hiding places for pests
- It reduces weight of the plant
- It improves crop yields
- It creates space in the garden
- It makes weeding easy
- It makes spraying easy
- It makes harvesting easy
- It allows plants to get enough sunlight
- It controls the spread of crop diseases

Why should pruning be done towards the end of a dry season?

- To allow easy recovery of the plant during wet season

Name the crop growing practice that reduces the rate of transpiration.

- Pruning

THINNING

- This is the removal of excess plants/seedlings from the garden.

Why should thinning be done when the plants are still young?

- To prevent them from taking a lot of nutrients from the soil

Why should thinning be done when the soil is wet?

- To prevent destroying the roots of the remaining plants

Advantages of thinning

- It reduces hiding places for pests
- It reduces competition for nutrients
- It reduces overcrowding of crops
- It improves on crop yields
- It makes weeding
- It makes spraying easy
- It makes harvesting easy

Examples of crops which are thinned

- Banana
- Maize
- Sorghum
- Millet

Name the crop growing practice that reduces population of crops in the garden

- Thinning

ROGUING

- This is the removal of plants with unwanted characteristics from the garden

What is a rogue?

- This is a plant with unwanted characteristics in the garden

Examples of rogues

- Off-type crops
- Diseased crops

Advantages of roguing

- It prevents easy spread of crop diseases
- It improves the quality of crop yields

PLANT TRAINING

- This is the way of making a crop to grow in a specific direction or shape

Methods of plant training

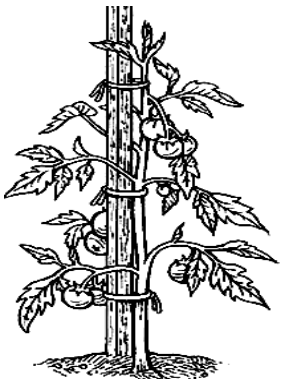
- Staking
- Propping
- Trellising

1. **STAKING**
   - This is the giving of extra support to a crop with weak stem using a strong stick.
   - The strong stick has a pointed end driven into the ground

Examples of plants that can be staked

- Tomatoes
- Vanilla
- Garden peas
- Some beans

A diagram showing staking in tomatoes



2. **PROPPING**
   - This is the giving of extra support to crops with much weight using a forked (Y-shaped) poles

Reasons why banana plants with heavy bunches should be propped

- To protect banana plants from falling down due to strong wind
- To reduce the weight put on the plant stem

Examples of crops commonly propped

- Banana
- Coffee
- Mango
- Avocado

A diagram showing propping in banana

Why do farmers cut off leaves of banana suckers during transplanting?

- To reduce the rate of transpiration

Why are stems of banana suckers cut in a slanting form?

- To prevent water logging that would cause rotting

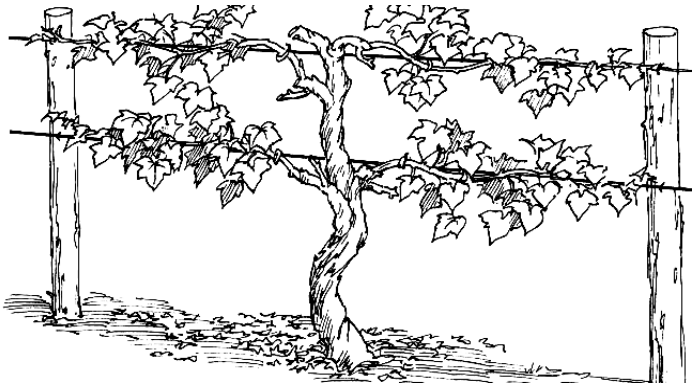
3. TRELLISING

- This is the providing of extra support to crops with weak stems using wires held between poles.

Examples of plants commonly trellised

- Passion fruit
- Cucumber
- Gourd

A diagram showing trellising in passion fruits



ADVANTAGES OF PLANT TRAINING

- It enables a farmer to harvest clean fruits
- It enables all parts of the plant to get enough sunlight
- It makes harvesting easy
- It makes pruning easy
- It makes spraying easy
- It makes weeding easy
- It prevents rotting of fruits as the plant grows above the ground

WEEDING

- This is the removal of unwanted plants from the garden

Advantages of weeding

- It reduces hiding places for pests
- It reduces the competition for nutrients and sunlight
- It makes harvesting easy
- It makes spraying easy
- It creates space in the garden
- It improves crop yields

EARTHING UP

- This is the heaping of soil around the base of a plant

Importance of earthing up

- It promotes formation of tubers e.g. in sweet potatoes and Irish potatoes / it enables tubers to grow bigger
- It promotes formation of seeds in ground nuts
- It provides extra support in maize and prevents lodging

GAP FILLING (GAPPING)

- This is the replacing of empty spaces and dead seedlings in the garden

Importance of gap filling (gapping)

- It increases crop yields
- It prevents wastage of space in the garden
- It increases crop population in the garden

WEEDS

- These are unwanted plants in the garden
- These are unwanted plants that grow in-between crops
- ✓ Weeds are classified as **annual, biennial or perennial weeds** basing on their lifespan

EXAMPLES OF WEEDS

i) Annual weeds

- Black jack (Bidens pilosa)
- Common chickweed
- Pigweed
- Crabgrass
- Foxtail millet

ii) Biennial weeds

- Wild carrot
- Common burdock
- Moth mullein

iii) Perennial weeds

- Elephant grass
- Star grass
- Dandelion
- Wandering jew
- Thorn apple
- Guinea grass
- Couch grass
- Spear grass
- Poison ivy
- Pampas grass

IMPORTANCE (USES) OF WEEDS

- Some weeds are used as vegetables e.g. pig weed
- Some weeds act as food to wild animals
- Some dry weeds can be used as mulches
- Some weeds are used as herbal medicine
- Some weeds control soil erosion
- Some weeds are used as animal feeds
- Leguminous weeds add nitrogen in the soil

DISADVANTAGES OF WEEDS (DANGERS OF WEEDS)

- They hide crop pests
- They compete with crops for water and nutrients
- They lead to poor crop yields
- Some weeds are poisonous when eaten
- They make harvesting difficult
- They increase the cost of production since herbicides are expensive

METHODS (WAYS) OF CONTROLLING WEEDS

a) Mechanical weed control methods

- Slashing/mowing
- Tillage/Ox cultivation/digging
- Uprooting
- Digging with hoes
- Burning the weeds

b) Cultural weed control methods

- Crop rotation
- Mulching
- Cover cropping
- Proper spacing of crops
- Timely planting
- Planting shady trees in the garden

c) Chemical weed control method

- Spraying with herbicides

How are herbicides useful in crop husbandry?

- They are used to kill weeds

d) Biological weed control method

- Use of livestock e.g using goats to graze in coconut plantations
- Use of moths to control cacti
- Use of beetles to control water hyacinth

MULCHING

- This is the covering of top soil with dry plant materials

Mulches

- These are dry plant materials used to cover top soil

Examples of mulches

- Dry grass
- Coffee husks
- Dry banana leaves
- Chopped banana stems
- Dry maize stalks

Advantages of mulching

- It keeps water/moisture in the soil

✓ By preventing evaporation of water from the soil

- It controls soil erosion.

✓ By reducing the speed of running water

✓ By protecting soil from direct raindrops

✓ By preventing strong wind from blowing away top soil

✓ By preventing moving animals from carrying away top soil

- It controls the growth of weeds

✓ By preventing weeds from getting sunlight

- It improves soil fertility

✓ Mulches rot to form humus

- It increases infiltration of water into the soil.

State the main reason for mulching

- To keep water/moisture in the soil.

DISADVANTAGES OF MULCHING

- Mulches hide pests
- Undried/wet mulches can grow into weeds
- Mulches can be fire hazards
- It is tiring
- Some mulches are expensive to buy

HARVESTING

- This is the removal of ready or mature crops from the garden
- Harvesting is always done during **dry season**

Why should harvesting of crops be done during dry season?

- There is enough sunshine to dry the harvested crops

Disadvantages of early harvesting

- The seeds are not well dried (seeds contain moisture)
- It leads to poor quality harvests
- The seeds are not good for planting
- The seeds can be infested with pests and diseases easily
- The grains are small and shrunk

Reasons why seeds should be well dried before storage

- To prevent rotting of seeds
- To prevent them from germinating

CROP PESTS

- These are organisms (living things) that destroys crops

Vermins

- These are small animals that destroy crops or spread germs to animals

GROUPS OF PESTS

- Field pests (garden pests)
- Storage pests

1. **FIELD PESTS**
   - These are organisms that destroy crops in the garden.

EXAMPLES OF FIELD PESTS

- Locusts
- Caterpillars
- Crickets
- Aphids
- Armyworms
- Sweet potato weevil
- Banana weevil (banana root borer)
- Termites
- Monkeys
- Rats
- Squirrels
- Moles
- Nematodes
- Warthogs
- Maize stalk borer
- Whitefly; a pest that spreads cassava mosaic disease
- Coffee twig borer
  Cotton bollworm
- Weaverbirds

2. STORAGE PEST

- These are organisms that destroy stored crops

Examples of storage pests

- Bean weevil
- Maize weevil
- Rats

EXAMPLES OF CROPS AND PESTS WHICH ATTACK THEM

CROPS	CROP PESTS
Pineapples	Pineapple mealy bug
Tomato	Nematodes
Bananas	Banana weevils (banana root borer), nematodes, banana thrips
Sweet potato	Caterpillars, mole rats, rats
Irish potato	Potato aphid, potato tuber moth, nematodes
Maize	Maize stalk borer, armyworm, weaverbirds, monkeys, maize weevils, rats
Coffee	Coffee berry borer, mealy bug
Beans	Bean aphids, American ball worm, bean fly, bean bruchids, cut worm, thrips, spotted borer, been weevils
Sorghum	Sorghum shoot fly, stem borer, sorghum midge
Cotton	American ball worm, spring ball worm, cotton strainers, aphids
Tobacco	Termites, cutworms, ants, millipedes, crickets
Cow peas	Pod borer, blossom beetles
Ground nuts	Thrips, millipedes, ants, termites, weevils, aphids, squirrels, rats
Cassava	Rats, squirrels, millipedes, nematodes, whitefly

SIGNS OF PESTS AND DISEASE DAMAGE IN CROPS

- Rotting of tubers
- Drying of the crop
- Eaten parts of the crop
- Wilting of the crop
- Holes on fruits, leaves and stems
- Premature ripening of fruits
- Yellowing of leaves
- Spots on the leaves
- Poor growth (stunted growth)

METHODS (WAYS) OF CONTOLLING CROP PESTS AND DISEASES

a) MECHANICAL METHODS

- By trapping some pests
- By fencing the garden
- By chasing away some pests (e.g rodents)
- Putting scarecrows in the garden
- By removing and burning infected plants

b) CHEMICAL METHODS

- By poisoning some pests
- By spraying with pesticides and fungicides
- By seed dressing
- Dusting crop stores with chemicals to avoid infections

c) CULTURAL METHODS (TRADITIONAL METHODS)

- By crop rotation
- Regular weeding
- Pruning
- By early planting
- By timely harvesting
- Roguing
- Proper spacing of crops
- Planting resistant varieties
- Storing harvested crops in a granary
- Use of clean planting materials
- Planting resistant crop varieties

d) BIOLOGICAL METHODS

- By keeping cats to eat rats
- By using dogs to hunt squirrels
- By using predator insects to feed on insect pests (e.g using ladybirds to feed on aphids)

What is meant by seed dressing?

- This is the applying of chemicals on seeds to prevent infections and pests

Of what use is a scarecrow in a maize garden?

- It helps to frighten (scare away) pest birds

Of what importance are ladybirds to crop farmers?

- They help in pollination
- They feed on some insect pests like aphids

How does early planting control pests?

- Crops mature before pests multiply

DISADVANTAGES OF CROP PESTS

- Pests eat leaves, roots and stems
- Some pests spread diseases to plants
- They reduce the quality of yields
- They lead to stunted growth of the plants
- They lead to low crop yields
- They increase the cost of production since a farmer buys pesticides

CROP DISEASES

- These are diseases that affect crops

SIGNS OF DISEASED CROPS

- Stunted growth
- Poor quality of yields
- Yellowing of leaves
- Black patches on the leaves
- Wilting of the plant
- Crinkled leaves

A TABLE SHOWING CROP DISEASES AND THE PART OF CROP MAINLY AFFECTED

CROP	DISEASES	CROP PART AFFECTED
Bean	Bean rust, Halo blight, Angular leaf spot	Leaves
Groundnut	Groundnut rosette, Leaf spot disease, Leaf blight, Bacterial wilt	Leaves
Cowpeas	Zonate leaf spot, Bacterial blight	Leaves
Tomato	Tomato blight, Bacterial wilt	Leaves
Cassava	Cassava mosaic	Leaves
	Brown streak	Root tubers
Maize	Maize rust, White leaf blight, Maize streak disease	Leaves
	Corn smut	Leaves, ear, tassel and stalk
Banana	Panama disease Cigar end rot Banana Bacterial Wilt	Leaves Banana fingers (fruit) Flower (blossom) and fruit
Sweet potato	Potato blight	Leaves
	Bacterial wilt (Brown rot)	Leaves and stems
Irish potato	Potato blight, Bacterial wilt	Leaves
	Black scurf	Stem tuber
Coffee	Coffee berry disease, Coffee leaf rust	Leaves
Sorghum	Leaf blight, Zonate leaf spot, Sorghum downy mildew	Leaves
	Scott stripes	Fruit
Sugarcane	Sugarcane smut, Red rot	Stem (internodes)
	Red leaf spot	Leaves
	Yellow leaf disease, Leaf scald disease	Leaves
Tobacco	Black spot disease, Blue mould, Frog-eye leaf spot, Brown spot, Bacterial wilt	Leaves
	Black shank	Stalk

DANGERS (EFFECTS) OF PESTS AND DISEASES

- They lead to poor yields
- They lead to wilting and drying of crops
- They lead to rotting of tubers
- They lead to deformed leaves (curling of leaves)
- They lead to stunted growth of the crops

WOOD LOT:

- This is a plot set aside for growing trees

Importance of the wood lot project

- Trees provide firewood
- Trees provide timber
- Trees help in rain formation
- Trees provide poles for building and electricity installation
- Trees control soil erosion
- Trees help to purify air

FACTORS TO CONSIDER WHEN STARTING A WOOD LOT PROJECT

- Multipurpose trees (MTPS)
- Drought resistant varieties of trees
- Trees that mature quickly
- Land
- Capital
- Labour
- Market
- Record keeping

Records to keep on a woodlot project

- Date of making seedbed
- Time spent by seedlings in nursery bed
- Date of transplanting
- Type of crops grown with trees
- Type of trees planted
- Number of trees planted
- Spacing of trees and crops
- Possible date for harvesting
- Date of weeding, pruning and spraying

An inventory is a detailed list of farm tools and equipment and their value.

Silviculture is the cultivation of trees for forests

METHODS OF HARVESTING TREES

- Pollarding
- Lopping
- Coppicing

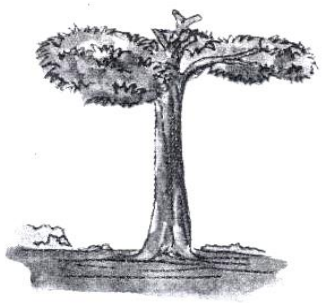
POLLARDING

- This is the cutting of the top part of a tree.

Importance of harvesting trees by pollarding

- It enables fruit trees to produce more and better fruits e.g mangoes
- It keeps fruits trees short for easy harvesting of fruits.

An illustration showing pollarding



LOPPING

- This is the cutting of side branches of a tree.
- ✓ Mature side branches are harvested as the tree continues to grow

Importance of lopping

- It enables the tree to grow taller
- It enables the tree to continue growing after harvesting firewood

An illustration showing lopping

COPPICING

- This is the cutting of the whole tree leaving a short stump.

Importance of coppicing

- It allows growth of new shoots
- It provides good wood for timber

AN ILLUSTRATION SHOWING COPPICING (E.G EUCALYPTUS)

- **Sprouting** means to develop new shoots

Why is pollarding or coppicing not done on some trees (e.g pine, podo and cypress)?

- Some trees cannot not grow new branches

USES OF WOOD

- It is used as fuel
- It is used as timber
- It is a source of income after sale
- It is used for fencing
- It is used for installing electric wires
- It is used for making papers and soft boards

PREPARATIONAND STORAGE OF WOOD

a) WOOD FOR CHARCOAL

- It can be harvested by lopping, pollarding or coppicing, packed into a heap and covered with soil

Why is wood for charcoal covered with soil?

- To limit the supply of oxygen

How is charcoal formed?

- By burning wood in limited supply of oxygen

How is ash formed?

- By burning wood in full (excess) supply of oxygen

How does charcoal burning affect the environment?

- It increases the rate of deforestation for wood fuel

b) WOOD FOR FIREWOOD

- It can be harvested by lopping, pollarding or coppicing
- After cutting, wood is split and put under sunshine **to dry**
- Dry wood burns very well and can be used for cooking
- Wood stores **chemical energy**

Why is it not good to use wet wood for cooking?

- It does not burn well
- It produces a lot of smoke

Why do people split firewood?

- For quick drying
- For easy usage

Which energy change occurs when wood is burnt?

- Chemical energy changes to heat and light energy.

c) WOOD FOR POLES (FENCING, ELECTRICITY AND HOUSE CONSTRUCTION)

- It is mainly harvested using **coppicing**
- The bark is removed and the wood surface is smeared with wood preservatives (e.g Used engine oil)

IMPORTANCE OF TREATING WOOD/POLES WITH PRESERVATIVES

- It prevents termites destroying the poles
- It prevents poles from rotting
- It makes poles resistant to fire

d) WOOD FOR TIMBER

- Wood for timber is harvested by **coppicing**
- The felled tree is cut into pieces after removing the side branches
- Wood for timber is cut (split) into pieces using a **hand saws** or **chainsaws**

TIMBER SEASONING

- This is the controlled removal of moisture content from timber

IMPORTANCE OF SEASONING OF TIMBER (DRYING OF TIMBER)

- It prevents bending /warping of timber
- It prevents timber from cracking
- It reduces weight of the timber
- It prevents timber from rotting
- It increases durability of timber
- It increases the strength of timber

REASONS WHY NATURAL SEASONING (DRYING) OF TIMBER SHOULD BE DONE IN A SHADE BUT NOT IN DIRECT SUNSHINE

- To prevent warping (bending) of timber
- To prevent cracking of timber

Why should seasoning of timber be done on a flat surface?

- To enable the timber remain straight (to prevent bending/warping of timber)

WHY IS WET TIMBER NOT GOOD FOR USE?

- It bends on drying
- It cracks easily
- It is not durable
- It rots easily
- It is weak

OF WHAT USE IS A HAND PLANE TO A CARPENTER?

- For flattening/shaping timber
- For reducing thickness of timber
- For smoothing timber

STORAGE OF WOOD

- It should be stored in a well roofed place **to protect it from rain**
- It should be kept on a dry raised platform **to prevent dampness of firewood**

INSECT PESTS FOR HARVESTED WOOD

- Powder-post beetles
- Termites
- Carpenter bees
- Carpenter ants
- Woodworms
- Sawflies

PRESERVATION OFWOOD AND TIMBER

- Applying coal tar on wood
- Smearing wood with used engine oil
- Soaking wood in kerosene
- Wood charring timber (half-burning the timber)
- Smearing wood with ash

SCIENCE ORIENTED CLUBS

- These are clubs that are formed on science basis

OBJECTIVES OF SCIENCE ORIENTED CLUBS

- To enable children acquire science skills
- To make children pick interest in science subjects
- To enable children discover science facts

Examples of science oriented clubs

- Young farmers' club
- School health club
- Wildlife club
- Environmental conservation clubs
- Science and technology clubs

YOUNG FARMERS' CLUB

- This is a group of young people in a community who have interest in farming

IMPORTANCE OF YOUNG FARMERS' CLUB IN A SCHOOL

- It grows food crops for the school
- It teaches good farming methods to school children
- It organizes study tours to farm schools
- It helps school children to pick interest in agriculture

EXAMPLES OF SCIENCE PROJECTS IN SCHOOLS

- Piggery project (pig keeping)
- Cuniculture project (Rabbit keeping)
- Apiculture project (bee keeping)
- Woodlot project (tree growing)
- Horticulture project
- Poultry keeping project

TOPIC: POPULATION AND HEALTH

POPULATION

- This is the total number of organisms in an area

Human population

- This is the total number of people living in an area

Health

- This is the state of complete physical, mental and social well being
- This is the state of being free from illness or injury

Components (aspects) of health

- Physical health
- Mental health
- Social health

Ways of promoting good health

- Proper sanitation
- Feeding on balanced diet
- Proper personal hygiene
- Performing regular body exercises
- Proper food hygiene
- Drinking safe water
- Avoiding drug abuse
- Having enough rest

SICKNESS

- This is the unhealthy condition of the body or mind
- This is the state of not well-being physically, mentally, socially and spiritually

Common sickness in a home

- Dysentery
- Cholera
- Malaria
- Kwashiorkor
- Typhoid
- Diarrhoea
- Measles
- Poliomyelitis

Causes of common sickness at home

- Poor sanitation
- Poor personal hygiene
- Malnutrition (poor feeding)
- Inadequate water supply
- Lack of physical exercises
- Drinking contaminated water
- Smoking
- Alcoholism
- Drug abuse
- Air pollution
- Lack of immunization

SIGNS AND SYMPTOMS OF SICKNESS

- Vomiting
- Diarrhoea
- Loss of body weight
- Jaundice
- Runny nose (stuffy nose)
- Chronic cough

SYMPTOMS OF SICKNESS

- Nausea
- Loss of appetite
- Fever
- Headache
- Body weakness

Ways of preventing and controlling common sicknesses at home and school

- By feeding on a balanced diet
- By immunization
- By proper disposal of human wastes
- By sleeping in treated mosquito nets
- By drinking safe water
- By avoiding drug abuse
- By performing regular body exercises
- By living in well ventilated houses
- By draining still water near our homes
- By slashing bushes around our homes

DISEASES

- **A disease** is an abnormal condition of the body that causes discomfort

Groups (types) of diseases

- Communicable diseases
- Non-communicable diseases

COMMUNICABLE DISEASES

- These are diseases that can spread from one person to another
- ✓ They are caused by germs (pathogens)

GERMS (PATHOGENS)

- These are tiny organisms that cause diseases

TYPES OF GERMS

- Bacteria
- Fungi
- Protozoa
- Virus

WAYS THROUGH WHICH COMMUNICABLE DISEASES SPREAD (HOW DO GERMS ENTER OUR BODIES?)

- Through vector bites (animal and insect bites)
- Through using contaminated water
- Through inhaling contaminated air
- Through contact with an infected person
- Through open cuts and wounds

GROUPS OF COMMUNICABLE DISEASES

- Water associated diseases
- Airborne diseases
- Vector-borne diseases
- Contagious diseases

WATER ASSOCIATED DISEASES

- These are diseases which are spread through contaminated water

Groups (classes) of water associated diseases

- Water borne diseases
- Water contact diseases
- Water cleaned diseases
- Water habitat vector diseases

GROUPS OF WATER ASSOCIATED DISEASES	EXAMPLES
Water borne diseases ▪ These are diseases spread through drinking contaminated water	▪ Cholera ▪ Typhoid fever ▪ Bilharziasis (schistosomiasis) ▪ Poliomyelitis ▪ Dysentery ▪ Hepatitis A ▪ Diarrhoea ▪ Guinea worm disease
Water contact diseases ▪ These are diseases spread through direct body contact (swimming or bathing) with contaminated water	✓ Bilharziasis ✓ Swimmer's itch ✓ Swimmer's ear (otitis externa)
Water cleaned diseases ▪ These are diseases spread due to lack of clean water to clean our bodies/promote personal hygiene	❖ Scabies ❖ Impetigo ❖ Trachoma ❖ Ringworm ❖ Athlete's foot ❖ Conjunctivitis
Water habitat vector diseases ▪ These are diseases spread by vectors that breed in water	• Bilharziasis (schistosomiasis) • River blindness (onchocerciasis) • Malaria • Elephantiasis (filariasis) • Dengue fever • Yellow fever • Zika fever • Chikungunya fever

CONTROL OF WATER BORNE DISEASES

- Drinking safe water
- Proper disposal of human wastes
- Keeping drinking water in clean containers

CONTROL OF WATER CONTACT DISEASES

- Avoid swimming in dirty water
- Treating water in swimming pools
- Avoid bathing with contaminated water
- Fencing swimming pools to prevent water contamination

CONTROL OF WATER CLEANED DISEASES

- Always bathe with enough clean water
- Washing and ironing clothes
- Always wear clean clothes
- Do not share clothes with an infected person

CONTROL OF WATER HABITAT VECTOR DISEASES

- Draining stagnant water
- Oiling stagnant water
- Destroying broken pots and bottles around our homes
- Do not sleep near rivers during day time
- Sleeping under treated mosquito nets
- Slashing bushes and tall grass around our homes

AIRBORNE DISEASES

- These are diseases that spread through inhaling contaminated air

EXAMPLES OF AIRBORNE DISEASES:

i) BACTERIAL AIRBORNE DISEASES

- Tuberculosis
- Whooping cough/pertussis
- Diphtheria
- Pneumonia
- Meningitis

ii) VIRAL AIRBORNE DISEASES

- COVID-19
- Influenza
- Measles
- Mumps
- Chicken pox

CONTAGIOUS DISEASES

- These are diseases that spread through direct body contact with an infected person

Examples of contagious diseases

- AIDS
- Syphilis
- Gonorrhoea
- Chancroid

STDS

- ✓ Leprosy
- ✓ Ebola
- ✓ Ringworm
- ✓ Scabies

VECTORBORNE DISEASES

- These are diseases that are spread by vectors

EXAMPLES OF VECTOR BORNE DISEASES

VECTORS	VECTOR BORNE DISEASE	GERM
Insect vectors	**Insect vector borne diseases**	
Tsetse fly	Sleeping sickness (Trypanosomiasis)	Trypanosomes
Blackfly	River blindness (onchocerciasis)	Onchocerca volvulus
Female anopheles mosquito	Malaria	Plasmodium
Culex mosquito	Elephantiasis (Filariasis)	Filarial worm
Aedes mosquito (Tiger mosquito)	Yellow fever Dengue fever Zika fever Chikungunya fever	Flavivirus Dengue virus (DENV) Zika virus Chikungunya virus (CHIKV)
Body Louse	Typhus fever Relapsing fever	Rickettsia Borrelia
Cockroach	Poliomyelitis Leprosy (Hansen's Disease) Amoebic dysentery (Amoebiasis) Typhoid Food poisoning	Poliovirus Mycobacterium leprae Entamoeba histolytica Salmonella typhi Salmonella/Norovirus
Housefly	Cholera Typhoid Trachoma Bacillary dysentery Amoebic dysentery Diarrhoea	Vibrio cholerae Salmonella typhi Chlamydia trachomatis Shigella Amoeba (Entamoeba histolytica) Rotavirus/E. coli/Norovirus
Rat fleas	Bubonic plague	Yersinia pestis
Non-insect vectors	**Non-insect vector borne diseases**	
Rabid dog/Rabid cat/Rabid fox	Rabies	Rabies virus
Fresh water snail	Bilharziasis (Schistosomiasis)	Blood flukes (Schistosomes)
Tick	Lyme disease Relapsing fever	Borrelia Borrelia

Ways through which vectors spread diseases (How do vectors spread diseases?)

- Through infected bites
- Through the 4Fs germ path
- Through vomiting on food
- Through defecating on food

Name any two diseases that can spread through cuts and wounds

- Tetanus
- AIDS

NON-COMMUNICABLE DISEASES

- These are disease that cannot spread from one person to another

Groups of non-communicable diseases

- Deficiency diseases
- Hereditary diseases
- Metabolic diseases
- Self-inflicted diseases

DEFICIENCY DISEASES (NUTRITIONAL DISEASES)

- These are diseases that are caused by lack of some food values in the diet

EXAMPLES OF DEFICIENCY DISEASES

Deficiency disease	**Deficiency (lack of)/food value lacked**
Marasmus	Carbohydrates
Kwashiorkor	Proteins
Vitamin deficiency diseases	
Night blindness	Vitamin A
Beriberi	Vitamin B_1
Pellagra	Vitamin B_3
Scurvy	Vitamin C
Rickets/osteoporosis	Vitamin D
Infertility	Vitamin E
Hemorrhagic disease/Vitamin K deficiency bleeding	Vitamin K
Mineral salt deficiency diseases	
Anemia	Iron
Rickets/Osteoporosis	Calcium
Goitre	Iodine

MALNUTRITION

- This is the lack of some food values in the body

Causes of malnutrition

- Poverty
- Shortage of food
- Ignorance about balanced diet
- Food taboos
- Inadequate breastfeeding

Signs of malnutrition in children

- Swollen belly
- Reduced night vision
- Swollen moon face
- Stunted growth
- Swollen legs
- Poor healing of wounds
- Swollen moon face
- Little brown hair
- Bleeding gums
- Poor growth of teeth
- Too much sleeping

Symptoms of malnutrition in adults

- Tiredness/fatigue
- Loss of interest in work
- Low concentration at work

Prevention of deficiency diseases

- By feeding on a balanced diet

HEREDITARY DISEASES

- These are diseases that are passed on from parents to off springs through defective genes.

Examples of hereditary diseases

- Sickle cell anemia
- Epilepsy
- Haemophilia
- Hypertension

METABOLIC DISEASES

- These are diseases that disrupt the normal process of converting food into energy in the body cells

Examples of metabolic diseases

- Diabetes
- Obesity
- Liver cancer

SELF-INFLICTED DISEASES

- These are diseases caused due to poor health life styles

Examples of self-inflicted diseases

- Lung cancer
- Emphysema
- Heart attack
- Kidney stones
- Liver cirrhosis

EXAMPLES OF POOR HEALTHY LIFE STYLES

- Smoking
- Alcoholism
- Over eating
- Lack of physical exercises
- Inadequate sleep

EXAMPLES OF GOOD HEALTHY LIFE STYLES

- Doing regular physical exercises
- Getting immunized
- Resting after meals
- Bathing daily
- Feeding on a balanced diet
- Having enough rest
- Going for regular medical checkups

HEALTH CONCERNS

- These are health problems in the community that need immediate solutions

EXAMPLES OF HEALTH CONCERNS

- Poor sanitation
- Inadequate food
- Poor water supply
- Anti-social behavior

POOR SANITATION

- This is the general dirtiness of a place where we stay

Causes of poor sanitation

- Poor disposal of human wastes
- Poor disposal of rubbish
- Lack of clean water supply
- Poor drainage in a home
- Bursting of sewage pipes
- Overcrowding in a home
- Sharing a house with domestic animals

Why is it unhealthy practice to defecate in bushes near our homes?

- It leads to outbreak of faecal diseases

SIGNS (INDICATORS) OF POOR SANITATION

- Tall grass in the compound
- Poor ventilation of a house
- Bushes around homes
- Sharing houses with animals
- Bad smell in a place
- Many insect vectors in a place
- Still water near our homes
- Rubbish in the compound
- Faeces in the compound
- Dirty water sources

Diseases associated with poor sanitation

- Dysentery
- Malaria
- Cholera
- Typhoid
- Bilharziasis
- Trachoma
- Poliomyelitis
- Diarrhoea
- Leprosy

Dangers (effects) of poor sanitation

- Bad smell in the place
- Outbreak of diarrhoeal and faecal diseases
- Outbreak of mosquito borne diseases
- Easy contamination of water sources
- Multiplication of vectors and germs

Solutions/control of poor sanitation (ways of promoting proper sanitation)

- Proper disposal of rubbish
- Scrubbing the floor of latrines
- Mopping the floor of the house
- Draining still water
- Picking rubbish around homes
- Burning rubbish at home
- Proper disposal of human wastes
- Spraying insecticides to kill insect vectors
- Avoid sharing a house with domestic animals
- Avoid sharing a living house with domestic animals
- Sweeping rubbish in the compound
- Smoking ordinary pit latrines
- Slashing tall grass in the compound
- Cutting bushes around our homes
- Treating sewage before disposal
- Sweeping around water sources
- Fencing wells and boreholes

INADEQUATE FOOD (FOOD INSECURITY)

- This is the condition when the family or community does not have enough food to eat throughout the year
- This is a condition when the available food is not enough to meet the people's daily nutritional needs

Causes of inadequate food

- Rapid population growth
- Crop pests and disease
- Poor soils (infertile soils)
- Inadequate land for farming
- Poor farming methods
- Drought
- Poverty
- Floods
- Wars
- Poor attitude towards farming
- Laziness
- Low level of technology

FOOD SECURITY

- This is the condition when the family or community have enough food to eat throughout the year
- This is a condition when the available food is enough to meet the daily nutritional needs of the people

Importance of food security

- It prevents malnutrition
- It prevents deficiency diseases
- It prevents famine

Solutions to inadequate food (ways of promoting food security)

- Growing enough food crops
- Preserving food
- Promoting family planning
- Growing drought resistant food crops
- Providing soft loans to farmers
- Practising better farming methods
- Proper storing of harvested food crops
- Growing food crops that mature faster
- Avoiding the habit of selling food crops for money
- Providing irrigation facilities to farmers in dry season

POOR WATER SUPPLY

- This is the condition when the community does not have enough clean water to meet their needs

Causes of poor water supply

- Drought
- Floods
- Wars
- Over population
- Silting
- Swamp drainage

Solutions/measures on how to overcome poor water supply

- By extending piped water to rural areas
- By protecting wetlands
- By protecting open water sources from contamination
- By educating people the importance of protecting water sources
- By constructing boreholes and taps

Effect of poor water supply

- It leads to spread of water associated diseases
- It leads to poor sanitation

ANTISOCIAL BEHAVIOUR

- These are habits which are not accepted in the community

Examples of antisocial behaviour (social problems in the community)

- Telling lies (deception)
- Bullying
- Stealing
- Using bad language
- Arson (fire setting)
- Fighting
- Smoking
- Violence and aggression
- Alcoholism
- Truancy
- Child prostitution
- Premarital sex
- Drug abuse
- Raping
- Disobedience
- Wandering (running away from home)
- Abortion

Juvenile

- This is a young person below 18 years.

Juvenile delinquent

- This is a young person who commits a bad act which violates law

Juvenile delinquency (delinquency)

- This is a bad act committed by a young person below 18 years which violates law

Criminal

- This is an adult who commits a bad act which violates law

Crime

- This is a bad act committed by an adult person which violates law

Causes of antisocial behaviour and delinquency

- Peer influence
- Pampering of children
- Media influence
- Unfulfilled expectations
- Bad teaching by teachers
- Poor social environment
- Over strictness by parents or teachers
- Failure to enforce rules in a community
- Inconsistence on standards of behaviour
- Ignorance about society rules/laws

Effects of antisocial behaviour and delinquency

- Dropping out from schools
- Imprisonment
- Rejection by parents
- Teenage/adolescent pregnancy
- Young people develop into adult criminals

How to control antisocial behaviors and delinquency in schools

- Forming health clubs in schools
- Pupils should avoid bad peer groups
- Delinquents should be taken to reformatory schools
- Slightly punish children for wrong behaviour
- Parents must have good morals all the time
- Pupils should not go to discos
- Treating children equally
- Children can participate in religious choirs
- Children should be counselled and guided
- Parents should avoid quarrels and divorce in marriage
- Children should not watch pornographic films
- Children should be engaged in games and sports

TRUANCY

- This is when a school–age child frequently misses school without good reason

Causes of truancy

- Bad teaching by teachers
- Boredom in class
- Overcrowding in classes
- Peer pressure
- Bullying
- Learning difficulties in some subjects
- Attractions from outside the school like discos and cinema halls
- Poor grades
- Teenage pregnancy
- Mental health issues
- Child neglect

VIOLENCE

- This is the intentional use of physical force to self-harm or harm others
- This is the state in which the a person is aggressive and has a destructive behaviour

How does masochism differ from sadism?

- Masochism is the enjoyment of experiencing pain **while** sadism is the enjoyment of causing pain to others

SEXUAL DEVIATIONS

- These are sexual practices that are not accepted in the community

Examples of sexual deviations

- **Bestiality;** sexual activity with a nonhuman animal
- **Masturbation;** touching or rubbing your own genitals for sexual pleasure
- **Homosexuality;** sexual attraction to a person of your own sex e.g lesbianism
- **Oral sex;** using mouth, lips or tongue to stimulate your partner's genitals
- **Anal sex;** putting penis or finger into a person's anus for sexual pleasure
- **Incest;** sexual activity between close relatives
- **Necrophilia;** sexual activity with a corpse (dead body)
- **Pedophilia:** sexual attraction to young children
- **Fetishism;** sexual attraction to non-living objects
- **Bisexuality;** sexual attraction to members of either sex

Causes of sexual deviations

- Peer influence
- Exposure to pornography
- Greed for money
- Ignorance on dangers of sex deviations
- Poverty
- Drug abuse

Effects of sexual deviation

- Contraction of STDs
- Dropping out from schools
- Loss of respect
- Rejection by the community
- Imprisonment
- Rejection by parents
- Family breakup

Ways of avoiding sexual deviations

- Avoid groups that practice sexual deviations (Have good friends)
- Join good productive clubs
- Avoid watching and reading pornographic materials
- Parents should provide proper counseling and guidance to their children
- Encourage sex education to youth in school and at home
- Get advice from respectable people (e.g religious leaders)
- Avoid drug abuse
- Engage in games and sports during your free time

Reasons why some societies condemn sexual deviations

- They oppose religious teachings
- They oppose the laws of nature
- They are a source of some STDs
- They bring a curse to the family

WAYS OF ADDRESSING HEALTH CONCERNS

- Constructing pit latrines
- Constructing rubbish pits
- Draining still water
- Providing good nutrition
- Treating the sick
- Supply of clean water
- Through healthy surveys
- Through demography
- Through health education
- Through child to child programme

HEALTH EDUCATION

- This is the way in which community members are informed on how to solve their health problems

Importance of health education

- It helps people to address health concerns
- It helps people to know the value of good health
- It helps people to maintain proper sanitation
- It helps people to promote proper personal hygiene
- It helps people in preventing the spread of some diseases
- It reduces poor traditional beliefs about diseases

Ways of providing health education

- Through health songs
- Through health programmes on media (e.g newspapers, radios and televisions)
- Through health debates and discussions
- Through forming health clubs

HEALTH SURVEY

- This is a way of collecting information about health concerns of a family or community

Health data

- This is the information collected during a health survey

Importance of health surveys to the government

- They help a government to know and solve the health concerns
- They help a government to know health status of its people
- They help the government to provide health services to its people

WAYS OF MAKING HEALTH SURVEY

- Through interviews
- Through questionnaires
- Through observations

GROUPS OF PEOPLE WHO CARRY OUT HEALTH SURVEYS

- Health workers
- Community leaders
- Media members

Kinds of information collected during a health survey

- Health services in an area
- Common sickness in the community
- Ways of preventing common sickness
- Immunization coverage
- Food security in the area
- Housing information

Housing information collected during health survey

- Type of houses
- Size of each house
- Ventilation of the house
- Number of people who live in each house

Immunization information collected during health survey

- The number of children immunized
- The ages of the children immunized
- Disease immunized

Health services information collected during a health survey

- Number of public health centres and private health centres
- People's response towards medical services and herbal services

Examples of health services provided by health centres

- Family planning
- Ante-natal and post-natal care
- Immunization
- Oral health care
- Health education
- Counselling and guidance
- Control of diarrhoeal diseases (CDD)
- X-ray

Groups of people found in health units

- Doctors
- Nurses
- Lab technicians
- Midwives
- Clinic officers
- Surgeons
- Pharmacists
- Gynaecologists

DEMOGRAPHY

- This is the scientific study of changes in human populations

Importance of demography

- It helps the government to plan for health services of its population
- It helps the government to determine the population structure of an area
- It helps the government to know the birth and death rates

Kinds of information collected during demography

- Birth rates
- Death rates
- Migration
- Housing information

YOUNG PARENTS

- These are young girls and boys who give birth before the age of consent.

Young mother

- This is the girl who gives birth before the age of consent

Young father

- This is a boy who gives birth before the age of consent

Problems faced by young parents

- Lack of skills to manage the family
- Lack of financial support
- Isolation by friends
- Dropping out from schools
- Ignorance about caring for the baby
- Risks of abortion
- Risks of getting STDs
- Obstructed labour

HOW TO AVOID HEALTH AND SOCIAL PROBLEMS

- Construct latrines for proper disposal of faeces and urine
- Construct rubbish pits for proper disposal of rubbish
- Join good social clubs (e.g young farmers' clubs and sports clubs)
- Provide counselling and guidance to people with health problems
- Get health education about drug abuse and prevention of diseases
- Avoid premarital sex

FAMILY BUDGET

- This is the statement which shows how the expected family income is spent

FAMILY BUDGETING

- This is an advance plan of how the expected family income is to be spent

ADVANTAGES OF FAMILY BUDGETING

- It prevents debts
- It prevents over spending
- It promotes saving in the family
- It reduces quarrels in a home over money
- It gives priority to essential needs of the family

TYPES OF FAMILY BUDGETING (SYSTEMS OF BUDGETING)

- Allowance budgeting
- Joint control budgeting
- Handout budgeting

Allowance budgeting

- This is when a money earning family member gives allowances to the house wife and keeps the balance for his own use

Joint control budgeting

- This is when both the wife and husband earn and share expenses of family needs

Handout budgeting

- This is when one family member controls the family income and pays what is on demand

COMPONENTS OF FAMILY BUDGETING (WAYS OF MANAGING FAMILY BUDGETING)

- Planning
- Prioritizing
- Evaluation
- Accounting
- Strict management

Prioritizing enables essential family needs to be catered for first

SCHOOL HEALTH CLUB/COMMITTEE (COMMUNITY HEALTH COMMITTEE)

- This is a group of people in a school or community members who work together to promote good health

Members of the school health committee

- School nurse
- Sanitary prefects
- Science teachers
- Senior man and woman
- School cleaners
- Food mess

ACTIVITIES/ROLES/DUTIES OF A SCHOOL HEALTH COMMITTEE

- Organizing health parades
- Organizing class health meetings
- Organizing general cleaning activities
- Organizing health education seminars
- Reporting any diseases outbreak
- Discouraging anti-social behaviour
- Designing health rules
- Identifying school children who are not immunized
- Inviting health workers to sensitize school children about health issues

HEALTH PARADES

- This is an assembly done at school to check on children's hygiene

ACTIVITIES CARRIED OUT AT A HEALTH PARADES

- Checking children with unbrushed teeth
- Checking children with long fingernails
- Checking children with dirty uniforms
- Checking children with uncombed hair
- Checking children with jiggers

WHY ARE HEALTH PARADES DONE? (IMPORTANCE/REASONS FOR CARRYING OUT HEALTH PARADES)

- To promote personal hygiene among school children
- To promote good health among school children
- They promote child to child programme

Which element of Primary Health Care (PHC) is promoted on health parades?

- Personal hygiene

CHILD TO CHILD PROGRAMME

- This is a programme in communities where older children help the young ones to promote good health

A SYMBOL SHOWING CHILD TO CHILD PROGRAMME (APPROACH)

ACTIVITIES DONE IN CHILD TO CHILD PROGRAMME

- Older children teach young children how to use a latrine
- Older children teach young children how to brush their teeth
- Older children teach young children to wash hands before meals
- Older children teach young children to wash hands after visiting latrines

IMPORTANCE OF CHILD TO CHILD PROGRAMME

- It prevents the spread of some communicable diseases among children
- It promotes good healthy lifestyles among children
- It improves health among children