SCIENCE LESSON NOTES FOR P.4 TERM

THEME: FOOD AND NUTRITION

TOPIC : FOOD PATH

These are different stages of food production.

Types of food path / crop growing practices

(i) village food path
(ii) town food path
(iii) earning food path .

VILLAGE FOOD PATH :

this is a type of food path where the farmer grows food for home use only.

Different types of crops grown include.

(i) cereals
(ii) leguminous crops
(iii) root crops
(iv) fruit crops
(v) vegetable

legumes

legumes are plants with root nodules on their roots.

e.g. - beans
-peas
-groundnuts
-Soya beans

Structure of a root leguminous crop

Note: inside the root nodules we find nitrogen fixing bacteria .
Nitrogen fixing bacteria from the atmosphere and changes it to nitrates.

Note : when legume plants die they leave nitrates in the soil.

Stages in village food path.

(i) land clearing / preparation.
(ii) Seed selection
(iii) Planting
(iv) Caring
(v) Harvesting
(vi) Storing
(vii) Fob preparation.

(a) land preparation :
ways of land preparations.
(i) ploughing

(ii) harrowing
(iii) slashing
(iv) bush burning

Garden tools, equipment and materials and their uses

-Aslasher	- apanga	- spade
-an axe	- forked hoe	- wheel barrow
-rake	- a hoe	- trowel
	- garden fork	- pick axe (ensululu)

Importance of land clearing

- To clear bush and remove big trees.
- To make the soil soft.
- To remove planting and digging easier.

(b) seed selection :
-importance of seed selection.
- it help to identity viable seeds.

Note : seed viability is the ability of a seed to germinate.

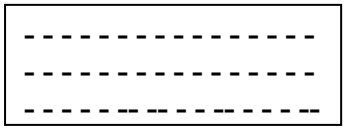
Qualities of a good viable seed:
-it shou8ld be free from pests and diseases.
- tit should not be broken .
-it should be mature.
-it should not be mixed with other varieties.

(c) planting

its done in the rain or wet seasons.

Methods of planting
(i) row planting
(ii) broadcasting

(I) row planting
Planting in lines e.g maize, beans , cassava , etc



Advantages of row planting

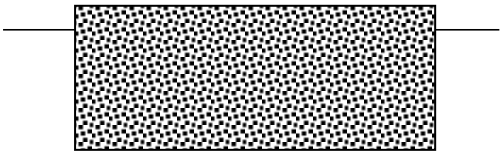
- easy weeding
- plants receive enough water, air and sun light.
- Limited spread of pests & diseases
- Easy to harvest.

Disadvantages of row planting

- a lot of space is wasted .
- it is time wasting.

(ii) Broad Casting
This is time where seeds are randomly scattered all over the garden e.g millet, rice

Sorghum, simsim



Advantage of row planting

- it saves time
- it does not need much space.

Disadvantages

- many seeds are wasted .
- weeding is difficult .
- high competition of plant nutrients
- easy spread of crop pests & diseases

NB: some crops are not directly planting in the garden; they first planted in a nursery Bed .

NURSERY BED

It is a small garden where seeds Are first planted before they are taken to the main garden.

Crops grown in a nursery bed

- tomatoes.
- Cabbages
- Egg plants
- Carrots.

Site of a nursery bed .

- a place that is protected from direct wind.
- A place with good drainage
- Should be near water source.
- Far from bushes to protect from pests.
- A place that is protected from animals.

How to prepare a nursery bed

- clear the buses .
- dig the soil deeply .
- break the lamps to make surface smooth.
- Apply manure to make the soil fertile.
- Make furrow lines in which seeds are to be planted.
- Cover the seed lightly with soil.
- Apply some mulch.
- Construct a shed I meter high.

N.B when the seedling are ready we carry out transplanting

- transplanting is the transfer of seedlings from a nursery bed to the main garden.
- it is done in the evening or early morning.

Why done at this time of day ?

To avoid excess transpiration that can cause wilting .

The garden tool use4d for transplanting is a trowel.

Diagram of a trowel.

N.B a seedling is a young plant .

Advantages of a nursery bed

- it provides a shelter to the seedling .
- helps in proper care of seedling before transplanting .
- helps in proper seed selection.
- Helps water to sink deeply into the soil .

(D) **caring**

Ways of caring for crops

- weeding .
- watering.
- Pruning .
- Thinning.
- Pests and disease control
- manuring .
- mulching
- staking
- gap feeling
- hardening off .

(i) **weeding**

- removal of unwanted plants from the garden.

The unwanted plants in the garden are called weeds.

Examples of common weeds

- black jack - elephant grass - finer millet weed .
- spears grass - nut grass - mukasa.
- coach grass - wandering Jew - kafumbe.

Dangers of weeds to crops.

- they compete with crops for plant nutrients.
- Some are poisonous and cause death to animals .
- They hide insect pests.

Ways of controlling weeds .

- mulching
- regular wedding
- spraying with herbicides
- up rooting and burning them.
- Cutting and burying them.

(iii) watering

- it is done when rain is not enough for crops.
- We use a watering can for watering crops

Diagram of a watering can.

(iii) pests control

A pests is a living organism which damage or destroy crops.

Dangers of pests and diseases in the garden.

- they reduce the quality of yields.
- They make plants remain un healthy.
- They interfere with the growth of a crops.
- They damage crops.

Ways of controlling pests and diseases.

- spraying using pesticides will kill pests.

- Use scare crows to scare pests
- Regular weeding.
- Guarding the garden
- Fencing the garden.
- Practicing crop rotation
- Prune infected parts .

Crop rotation is the growing of different crops on the same piece of land seasonally.

Advantages of croprotation
-controls soil erosion
Break the life cycle of pests .
It maintains soil fertility.

- what is soil erosion ?
- causes of soil erosion ?
- agent of soil erosion.

(iv) manuring
Adding manure to the soil to make it fertile.
Types of manure

- farm yard manure (got from animal dropping &bedding)
- compost manure (got from kitchen refuse and ash)
- green manure (when green plants are dug into the soil)

(v) mulching
- it is the covering of top soil with dry plant materials
- the materials are called mulches

Examples of mulches .

- dry elephant grass.
- Banana leaves
- Banana fibers.
- Spear grass.

Advantages of mulching
- it controls the growth of weeds.
- it controls soil erosion
- it improves soi9l fertility .
- keep the soil moist.

Disadvantages of mulches

- dry mulches may lead to fire hazards.
- mulches harbor pests and diseases and others dangerous creatures e.g. snakes.
- too much mulches may prevent water to enter the soil.

(vi) Thinning

- this is the removing of excess plants in a garden or nursery bed.
- It is done to a void over crowding and also creates space for the growing plant.
- It is practiced in crops like maize, sorghum, rice, finger millet, banana etc.
- Extra plants are removed when they are still young.
- Thinning should be done when the soil is wet to avoid damaging of other plants.

(viii) pruning
Pruning is the removal of unwanted parts from a plant.
Tools used

- shear
- Secateurs.

Plants which are pruned include: oranges, lemons, tomatoes ,coffee ,matooke ,avocados ,mangoes etc.

Advantages of pruning

- helps to reduce competition for light a among plants.
- Help to reduce on weight in some fruit crops.
- Control the spread of pests and diseases.

(viii) staking

Providing extra support to plants with weak stems e.g banana, tomatoes.

(ix) gap – filling

Replacements of seed which fail to germinate.

(x) hardening off

it is the removal of a shelter from a nursery bed .

(F) HARVESTING

This is the removing of read, ripe or mature crops from the garden.

- the suitable season for harvesting is the dry season.

Why harvesting is done in the dry season?

To allow seeds & grains dry and lose moisture.

Methods /ways of harvesting

- cutting
- picking
- uprooting
- plucking

Tools Used For Harvesting

- knife
- hoe
- panga
- sickle

harvesting should not be done too early or too late.

Disadvantages of early harvesting

- the seeds contain moisture.
- the quality of seeds is poor
- the grains or leguminous seeds are small & shrunk .
- the seed are not good for planting
- the seeds are easily infested with pests & diseases

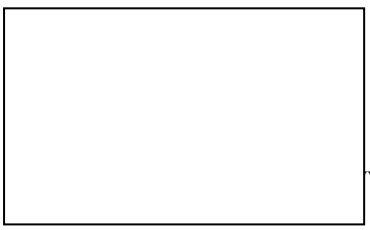
(g) **STORING**

Is the keeping of surplus produce for future use.

Types of food store

(i) granary
(ii) silo

diagram of a granary



Pests that attack stored food .

- rats
- termites
- weevils
- beetles

importance of storing food .

- to get what to plant in the next season .
- to sell when the garden is good
- to prepare for famine period .

qualities of a good store

- water proof
- well ventililated
- always dry &clean
- raised from the ground to avoid dampness

(H) FOOD PREPARATION.

Ways of preparing food include

- baking
- frying
- mingling
- roasting
- boiling

food preservation

is the keeping of food for a long time with out getting spoilt.

Ways of preserving food

- salting
- sun drying
- smoking
- tinning / canning
- boiling
- freezing
- pasteurizing

why food is preserved ?

- to avoid wastage.
- To prevent contamination
- To keep food for a long time

Good eating habits

- wash hands before &after eating
- chew food properly
- sit properly while eating food
- chew food while your mouth is closed

bad eating habits

- eating with un washed hands
- talking with food in mouth
- chewing food with the mouth open
- improper sitting while eating
- swallowing food which is not chewed properly .

what comes from bad eating habits

- you can get a diseases.
- It can choke you
- Food particles can fly out of the mouth to other people's food or cloth.
- Shows lack of respect for it .it is a sign of indiscipline
- It causes stomach pain
- Causes constipation .

Proper ways of handling food

- keep cooked and left over food covered.
- Wash hands before preparing and serving food
- Wash fruits and vegetables help to remove germs
- Cook food to kill germs
- Use clean containers when preparing and serving food

Importance of proper food handling

- it prevents germs that causes diseases
- food doesn't get contaminated.
- It makes food stay longer
- Well handled food raise appetite

How food get contaminated

- when flies land on it
- when its left un covered
- when dust gets into contact
- handling it with dirty hands
- serving it using dirty containers
- serving it in a dirty place

uses of food to the body

- food repair worn out body parts
- for body growth
- t6o protect us against diseases

blocks in food path

these are problems which can affect any of the food path and cause poor or little yields

blocks in food path include

- pests & diseases
- poor farming method
- heavy rains (elnino)
- drought
- storm
- earth quake
- poor transport

town food path

this is when food is grown for sale
some people in town in town do not have gardens
they get food from markets, shops, restaurants and super market .

stages in town food path

- storing
- marketing
- transporting
- preparing

earning food path

this is the type of for people who earn salaries

stages in the earning food path

- earning salary
- budgeting
- preparing food.

THEME: THE WORLD OF LIVING THINGS

TOPIC: PLANTS LIFE

Plants are divided into groups namely

(i) flowering and
(ii) non – flowering plants

FLOWERING PLANTS

These are plants which bear flowers e.g maize, beans, sweet potatoes.

Structures of flowering plants

Name all the parts

Major parts of a flowering plant

- leaves

- stem
- roots

leaves

structure of a leaf

Name the parts

- midrib (main vein)
- leaf stalk (petiole)
- leaf blade3 (lamina)
- veins
- leaf margin
- apex

Types Of Leaves

(i) simple leaves
(ii) compound leaves

simple leaves

simple leaves are ones with one leaf blade (lamina) and one leaf stalk.

Examples of simple leaves

- simple entire
- simple lobbed
- simple serrated
- simple palmate

note: with the help of diagrams.

Compound leaves

A compound leaf is a leaf with many leaf lets
Structure of the leaves
Examples of compound leaves

- compound pinnate
- compound bipinnate
- compound trifoliate
- compound digitate

venation

leave venation is the arrangement of veins in a leaf

types of leaves venation

(i) parallel leave venation
(ii) net work venation

uses of leaves to man

- some leaves are eaten as vegetables.
- Some leaves are used in making shelters through thatching .
- Some are used in making of crafts e.g mats
- Some are used as herbal medicine.
- Leaves are used for decoration

Uses of leaves to a plant

- they make food for the plants
- they help a plant to breathe
- some leaves store food for the plants
- leaves carry out transpiration

scientific process in leaves

(i) transpiration
(ii) photosynthesis

transpiration

this is the process through which plants lose water through the stomata to atmosphere .

factors which affect the rate of transpiration

- temperature - light intensity
- air movement - surface area of a leaf
- humidity - no of stomata on the leaf.

Experiment to show that plants carry out transpiration

Things needed

- live plant
- polythen bag

Structures.

A B

Procedure

- get alive (growing plants), cover the shoot of the plant with a polythen bag as in A above

and leaves it for 2-3 hours.

- after 2-3 hours go and check .what do you observe? Droplets of h20 on the polythen bag

Hence transpiration has taken places as in B above.

How do plants control the rate of transpiration

- some shed off their leaves .
- some plants e.g. bananas produce a layer of wax they use to cover their stomata.
- Some plants reduce the size of their leaves to thorns e.g cactus, aloe Vera.

Uses of transpiration to plants

- helps a plant to cool down
- help to pull up more water through the stem

PHOTOSYNTHESIS

This is the process by which green plants make their own food.

Photo means _____ light

Synthesis _____ making /building

Conditions necessary for photosynthesis

(i) water
(ii) carbon-dioxide
(iii) sunlight
(iv) chlorophyll.

Note : 1. starch is food made ,made by green plants.
2. raw materials for photosynthesis are water and carbon-dioxide
3. by – product of photosynthesis is oxygen

<u>Water</u>

Water is got by plants through the roots

<u>Carbon-dioxide</u>

Is the gas needed for plants to make their own food as oxygen is given off

Sunlight
Sunlight provides light energy necessary for photosynthesis to take place

Chlorophyll
Is the green color in a plant.

- its main function is to trap sun light for the plant to make food.
-

Testing for starch in a leaf

Things needed

- green leaf
- source of heat
- methylated spirit
- water
- iodine
- metallic container

procedure

(i) pluck a leaf from a plant
(ii) boil the leaf from saucepan in water
(iii) then boil the leaf in methylated spirit
(iv) wash the leaf in water
(v) put t6he leaf on a flat surface and then pour iodine solution on it

Results
The leaf turn dark blue or blue black.

Conclusion
The leaf will turn blue- black or dark blue due to the presence of starch.

Uses of the following during the experiments

(i) boiling water to kill the cells of the leaf
(ii) methylated spirit to remove chlorophyll
(iii) washing with water to remove methylated

STEMS

Uses of stems to a plant

- they hold the leaves so that they can get plenty of sunlight
- they conduct water from the root to the leaves.
- They hold the flowers for proper pollination
- Some stems store food for the plants
- Some stems grow into a new plants

Uses of stems to man

- some stem are eaten as food e.g sugar canes
- man can sell some stems and get money
- some stems are used as herbal medicine
- man can get firewood from stem
- man get timber from stems of some plants

Types of stems

- upright stems
- climbing stems /weak
- under ground stems /storage stems

up-right stems
these are stems that grow straight in the space e.g maize plants ,Soya ,mango plants etc

under ground stems / storage
these are divided into four groups namely

- bulbs
- corms
- rhizomes
- stem tuber

X-TICS OF UNDERGROUND STEMS
Bulbs

- a bulb is a small under ground stem with fleshy leaves which store food.
- The stem in bulbs attach all leaves together

Examples of bulbs
*onions
*Gallic

Parts of a bulb
Axillary bad: they grow into a new plant

Foliage leaves: they contain chlorophyll & make food.

Storage leaves: they store manufactured food.
Stem : they attach all leaves together

Scale leaves : they protect the inside fleshy leaves

Internal and external parts of an onions

(bulb) internal. External.

Rhizomes this is a horizontal under ground stems
Examples of rhizomes

- ginger
- cannalily
- grass

rhizomes have adventitious roots which grow from their stem .

- most rhizomes store their food in the swollen

corms:
these are short vertical under ground stems

examples co – coyams.

Stem tubers
- these are swollen underground stems which store food

Examples Irish potatoes and tropical yarns
Stem tubers have eyes or buds and scale leaves

- stem tubers store food in the stem and it's the part eaten as food.

Climbing stems
These are weak stems which can not support them selves to stand upright.

- Examples

- Bombo
- Sponge plant
- Pumpkin

Why do plants climb others

- to get sun light
- to get support

ways in which climbing use to get support from others.

- using tendrils
- by twinning or clasping
- using hook or thorns

Illustration for the ways.

FLOWERS

A flower is a reproductive part of a plant.
Its part of the school system.

Fruits and seeds

Its main use to a plant is to reproduce.
There are many kind of flowers.

The diagram below shows the general structure of a flower (hibiscus)
Draw a flower and show all its parts.

Functions of the parts of a flower.

Flower stalk : hold the flower on the stem / branch

Sepals : protect the flower when still young (bud stage)
- since they are green , they make foo0d for the plant.

Note : a collection of sepals is called **calyx** .

Petals : they attract pollinators to a flower .
A collection of petals is called **corolla .**

Anthers : they produce pollen grains
they store pollen grains.

Stigma: they receive pollen grains from anthers during pollination.

The style: - join the stigma to the ovary.
- It supports the stigma so that it can receive pollen grains.

The ovary: - the ovary protects the ovules.
- The ovary turns into a fruit after fertilization

The ovules: they development into seed after fertilization

The reproductive parts of a flower

- the stamen
- the pistil

the stamen

The stamen is the male part of a flower. It's made up of the following parts

- anthers
- filament

Diagram

The pistil

This is the female part of a flower.

It consists of the following parts.

- stigma
- style
- ovules
- Ovary.

Diagram of pistil

Use of flowers to a plant

They help a plant to reproduce.

Uses of flowers to man

- Flowers are used for decoration.
- They are used as a source of income.
- Some flowers are used to make perfume.
- People put flowers on coffins show love & respect to the dead (wreath)
- Flowers are given to visitors as a sign of welcome (bouquet)
- Some flowers are eaten as food e.g. cauliflower.
- Some flowers are given to loved ones as gifts.

Uses of flowers to animals

- bright colored flowers contain sugary substance known as **nectar**
- some insects and birds visit flowers to get this nectar. they eat nectar as food. Bees use nectar to make honey.

Note: nectar is produced from the nectarines.

POLLINATION

Pollination is the transfer of pollen grains from the anthers to the stigma.

- anthers produce pollen grains while the stigma receives pollen grains

Types Of Pollination

There are two types of pollination namely,

(i) self pollination
(ii) cross pollination

self pollination

is the transfer of pollen grains from the anthers to the stigma of the same flower.

Diagram to show self pollination.

Cross pollination
This is the transfer of pollen grains from the anthers to the stigma of different flowers but of the same type of kind.

Illustration

Agents of pollination
These are factors or ways responsible for transferring grains to the stigma.
The two common agents include.

- Insects.
- Wind

Others include.

- birds
- bats
- water
- animals

insects
Insects are able to carry out pollination as they visit flowers looking for nectar
Examples of insects that carryout pollination includes.

- bees
- butter flies
- bettles
- moth

note: - the moth pollinate flowers at night

- they also feed on nectar at night.

Difference between insect and wind pollinated flowers.

Insects pollinated	**Wind pollinated**
- have brightly colored petals	- have dull petals
- have large petals	- have small petals
- have a nice smell (scent)	- have no nectar
- have nectar	- produce a lot of pollen grains
- have heavy pollen	- have light pollen grains

Birds

- birds also visit flowers to get nectar which they feed on
- Birds that carry out pollination include. Sunbird

A sunbird has a long curved beak for sucking nectar from the flowers.

Animals
Some fruit eating bats help in pollination flowers because they have a hairy Body
Note : after pollination fertilization take place.

FERTILIZATION

Fertilization is the union of the male and female gametes or cells to form an embryo or zygote.

- fertilization take place inside the ovule in the ovary
- after fertilization, ovules grow into seeds.

While the ovary grows into a fruit.

SEEDS

A seed is a developed or fertilized ovule.

Uses of seeds

- some seeds are eaten as food
- seeds develop into plants
- seeds are a source of income
- we get oil from seeds e.g. cotton seeds
-

Classification of seeds

Seeds are classified into two groups namely

- monocotyledonous
- dicotyledonous.

Monocotyledonous seeds (mono means one)

These are seeds with one cotyledon e.g. rice , maize , millet
These seeds are also called grains or cereals

A maize fruit (grain)

It's called a maize fruit because it has two scars namely.

- style
- stalk scar

Note: with the help of real maize grains, show the and draw the external parts of a maize grain

Draw internal parts of a maize grain.

FUNCTION OF PART OF A MAIZE FRUIT

Testa - it protects the inner parts

- its also called a seed coat

Endosperm

- it stores food for the embryo in monocots

Cotyledon

- it supplies food from the endosperm from the embryo during germination.

Stalk scar

- It attaches the fruit to the cob.

Style scar
- it is where the style was attached

Plumule
- it grows into the shoot system
- It is also called embryo shoot

Radicle
It grows into the root system its also called embryo root

Embryo
The grows into a new plants

Note
The embryo grows consists of the radical and plumule

Dicotyledonous food
Di – means two
Dicots are seeds with two cotyledons e.g beans ,peas , oranges

Internal parts of a bean seed (draw)

The internal parts of a bean seed (draw)

Function of the parts of a bean seed
Note they have the same functions like the parts of a monocots except the following Parts.

Hilum
- it attached the seed either to the pod or ovary and fruit.

Cotyledon
- it provide and store food for the germinating embryo in dicots.

micro Pyle
- it allows in air and water into the seed during germination.

GERMINATION
This is the development of a seed into a new plant or seedling
Seedlings are young plants

- epigeal germination

- hypogeal germination

Epigeal germination

This is the a type of germination where the cotyledon comes out of the soil after germination.

Examples of seeds which undergo epigeal germination

- beans
- Soya
- peas
- ground nuts

Illustration of the stages in epigeal germination.

Hypogeal germination

This is the type of germination in which the cotyledon remains in the soil after germination.

Examples of seed

Which under go hypogeal include, maize, millet, sorghum, wheat.

Conditions necessary for germination

- Oxygen.(air)
- Warmth (right temperature)
- moisture

Uses of the follow

Water:

- it dissolves the food in the cotyledon
- it softens the testa.
- It softens the soil for easy penetration of the embryo

Oxygen:

It's used for respiration.

Note:

During germination oxygen is used and carbodioxide is given off.

Difference between dicots and monocots

Mono Cots	**Dicots**
- have one cotyledon	- have two cotyledon
- under go hypogeal germination	- under go epigeal germination
- have fibrous root system	- have tap root system
- have parallel veined leaves	- have net veined leaves
- grow with one leaf first	- growth two leaves first

ROOTS

It's a part of a growing plant which grows in the soil.

Root system

A true system develop from the radical of a seed.

Roots that grow from others parts of a plant are called adventitious roots

Types of root system

- tap root
- fibrous root system

Structure of system

Tap root fibrous

Note:

In the tap root system we must show the following

- main root

- lateral roots
- root hairs and
- root cap

root hair:

They a absorb water from the sort.

Root cap:

Protect the tip of a growing root.

Fibrous root system

These spread randomly from the same point.

Examples of plants with fibrous root system includes all monocots plant e.g. maize, millet

Uses of roots to a plant

- roots absorb water and mineral salt from the soil
- some roots store food for the plants e.g. cassava ,sweet potatoes
- they hold the plants firmly into the soil

uses of roots to man.

- man eats some roots
- some roots are used as herbal medicine (omulondo)
- its used as a source of income.

Adventitious roots

These are roots which grow from other parts of a plant.

Examples of adventitious roots

- prop roots
- clasping
- stilt
- buttres

SANITATION

Vectors
Definition: A vector is a living organism that spreads germs which cause diseases.
A germ is a small living organism that causes diseases.

Examples of vectors
- House flies
- Mosquitoes
- Coockroaches
- Fleas
- Tsetse flies
- Rats
- bed bugs
- ticks
- lice
- itchmites
- dogs

Insect vectors

The house fly:
The housefly is a vector because it spreads many diseases.

The structure of a housefly (diagram)

Places where houseflies live: and breed
- dirty places e.g. dustbins rubbish pits, dirty toilets or latrines.

Life cycle of a house fly
- A housefly undergoes a complete metamorphosis.
- A complete metamorphosis has four stages of development i.e. eggs, larva, pupa and adult.

Diagram of the life cycle of a housefly.

Diseases spread by a housefly:
- Cholera
- Typhoid
- Diarrhea
- Dysentery
- Trachoma

CHOLERA

- It is spread by bacteria called vibrio cholera.
- It kills in less than 24 hours.
- It spreads through contaminated food or water.

Signs
- Serious diarrhea
- Prolonged vomiting
- dehydration
- serious weakness.

Prevention of cholera
- Drink clean boiled water
- Cover food to avoid houseflies.
- Wash hands with soap and water after toilet
- Use latrines properly.
- Give a lot of O.R.S to prevent dehydration.
- Observe good personal hygiene.

TYPHOID:
- Typhoid fever is caused by bacteria germs called salmonella typhi.
- It is spread through contaminated food and water.

Symptoms:
- Persistent fever with headache
- Increasing pain and diarrhea
- Abdominal pain
- ulceration and rapture of intestine may occur.

Prevention:
- Drink clean boiled water
- proper use of latrines or toilets.
- Wash hands with soap and water after toilet.
- Cover all food and drinks
- Wash hands with clean water and soap before and after eating.

DYSENTERY
- Dysentery is the passing out of watery faeces with blood.
- it is spread through contaminated food and water.

Signs and Symptoms
- Prolonged diarrhea with fever
- Severe blood – stained diarrhea
- dehydration and loss of appetite.

Prevention
- Proper use of latrines and toilets.
- Keep toilets and latrines clean.
- Wash hands before handling any food
- Destroy all breading places of house flies.
- Cover all food items.

DIARRHOEA
- Diarrhea is the passing out of watery faeces / stool.

- Diarrhoea is a sign of many diseases.
- It is caused by bacteria, virus or worms.
- Diarrhoea is spread by 4 Fs called:
    - Faeces
    - Flies
    - Food
    - Fingers.

DEHYDRATION

Dehydration is the condition when the body does not have enough water in it.

Dehydration is caused by:-

- prolonged diarrhea
- prolonged vomiting
- high fever

Dehydration leads to the loss of these salts:

- Sodium salts
- Potassium salts and water.

Signs of dehydration

- sunken eyes
- dry mouth
- fontanelle i.e. sunken soft spot on the body's head.
- passing out little or no urine.
- a pinch of the skin taken from the belly goes back to shape slowly.
- The person is sleepy and easily gets annoyed (irritable).

Prevention of diarrhea.

- Left over food should be covered.
- Wash hands before and after eating food.
- Boil water for drinking
- Faeces should be properly disposed.
- Wash fruits and vegetables before eating them.
- Destroy all breading places of house flies.
- Cover all dustbins and rubbish pits properly.
- Chew food properly to avoid indigestion.

Treatment for diarrhea and dehydration

- Continue feeding with solid foods like boiled rice cassava, matooke, porriage etc.
- Give extra fluids like O.R.S, fruit juices, tea, etc.

A. How to mix O.R.S (oral rehydration salts)

Steps taken:

1. Wash hands
2. Measure 1 litre of boiled water (cooled) in a clean container.
3. Open the packet of ORS and empty into 1 litre of water.
4. Mix ORS and water well.
5. Taste the solution. It should never taste very salty. Don't boil the solution.
6. Give the drink to the person with diarrhea.

NB. A small child should drink atleast one quarter of TUMPECO after each stool while a big child (adult) should drink at least one half of TUMPECO after each stool.

B. **How to make local ORS called salt sugar solution. (SSS)**

1. Wash hands
2. Measure one litre of drinking boiled water into a clean container.
3. Measure one leveled tea spoon of salt and eight leveled teaspoon of sugar in one litre of water.
4. Mix the salt and sugar into water well to make a solution.
5. Taste the solution. It should never be salty.
6. Give the drink to a person with diarrhea

TRACHOMA

- Trachoma is caused by a virus called Chlamydia.
- It is spread through body contact and poor hygiene.
- It is spread by shaking hands.
- It is spread through sharing of towels and hankies.
- It is spread through sharing basins of water of infected persons.

Signs and symptoms

- Redness and itching of the eye
- Watery discharge from the eyelids.
- Swelling of the eyelids.
- Pain while looking at light.

Prevention and control

- Avoid using or sharing the same basin while bathing, shaking hands, sharing same hankies with infected persons.

MOSQUITOES

Types of mosquitoes

- Anopheles mosquito
- Culex mosquito
- Aedes / Tiger mosquito

The sucking mouth of a mosquito is called the proboscis.

External features of a mosquito (diagram)

A. The anopheles mosquito

- The female infected anopheles mosquito spreads plasmodia germs (a plasmodium germ).
- Plasmodia germs caused malaria.
- The mosquito lays its eggs in stagnant water.

Signs and symptoms
- Shivering and chattering of the teeth.
- Temperature rises beyond normal
- Breathing rapidly and rapid pulse rate.
- Headache and general discomfort.
- Severe sweating.
- Abdominal pain, diarrhea and vomiting

Prevention and control
- Clear all stagnant water in broken pots, tins.
- Clear all the long grass near the house
- Spray with insecticide.
- Sleep under a mosquito net.
- Keep fish ponds to eat mosquito larvae.
- Keep your house clean and allow in light.
- Use nets (screens) in ventilators

Treatment
- There are many medicines for treatment malaria e.g. fansider, quinine, cammaquin.

Life cyle of a mosquito
A mosquito undergoes a complete metamorphosis i.e. eggs, larva, pupa and adult.
The larva of a mosquito is the **wriggler.**
The larva of a housefly is a **maggot**
The larva of a butterfly is a **caterpillar.**
The adult of a housefly is the **imago.**

Stages of devt. of a mosquito (diagram)

Prevention of rat disease
- Kill all rats
- Spray with insecticides to kill rats.
- People should be advised to take anti – plague vaccine in case of an out break.

Lice
There are three types if lice namely:-
(i) Body lice
(ii) Hair lice
(iii) Crab lice

Lice suck blood, causing irritation and also spread disease called typhus and relapsing fever.

Body lice
- They are found in clothes.
- Their eggs (NITS) are found in the beams and folds of clothing.

Head lice
- They live in the hair on our body.
- They spread by infected combs, hair brushes hats and turbans.

Crab lice.

They live around hairs in private parts.

Prevention and control of lice

- Observe personal hygiene
- Cutting off infected hair
- Use fine comb to remove the nits (eggs) and dead lice.

Bed bugs

- It's a wingless insect
- They live in cracks of walls and floor, furniture beddings.

COCKROACHES

Characteristics of a cockroach.

- It's a brown insect with very long antenna / feelers.
- It lives in dark places like cupboards, old cookers, boxes, book shelves, latrines, toilets.
- The rest during day and become so active night to look for food and water.
- Cockroaches carry germs that cause the following diseases:
  - (i) polio
  - (ii) food poisoning
  - (iii) Typhoid
  - (iv) Leprosy
  - (v) Amoebic dysentery.
- Parts of a cockroach

Life cycle of a cockroach

- It undergoes three stages of growth called complete metamorphosis i.e. egg, nymph and adult.
- Illustration of the life history of a cockroach.

Egg case → Nymph → Adult cockroach

Fleas

- Fleas live on animal bodies and man.
- Fleas bites and cause irritation and scratching.
- Rat fleas carry bacteria which cause bubonic plague from infected rat.
- Bedbugs protect themselves by producing bad smell.

Black flies

- They are black flies that have a hump at the back.
- They live around river banks.
- They breed in fast flowing rivers where they lay their eggs.
- They undergo fan stages of growth.
- They spread a filarial worm that cause **river blindness**.

Water snails

- Water snails are vectors which act as hosts to the worm which cause **Bilharzia fluke**.

Signs and symptoms of bilharzias fluke.

- blood in urine

- blood in stool
- enlargement of the liver and spleen.

Prevention
- Put on shoes especially in wet and swampy areas.
- Use latrines don't urinate or drop feaces in or near water.
- Boiling drinking water.

Dogs
- Its an animal vector
- Mad dogs carry (spread) the virus that cause rabies.
- When your bitten by a mad (infected) dog, after six months you also become mad and begin **barking like a dog.**

Prevention of rabies
- Vaccinating dogs by giving anti – rabies vaccine.
- Killing all suspected mad dogs.

Ticks
- They are found on the bodies of domestic and wild animals e.g. cow, sheep, grat.
- Ticks feed on blood.
- Ticks spread the germ that cause **typhus** fever.
- Ticks undergo three stages of growth.

Diagram

THEME: THE ENVIRONMENT

TOPIC : INTERDEPENDENCE OF THINGS IN THE ENVIRONMENT

Environment:
All things around us or man's surroundings.

Components of the environment
Components are things that make up environment.
They include:
- land / soil
- water
- Air
- Plants
- Animals
- People

Classification of components
Components are classified into living and non living components.

Living components include:-
- Plants
- Animals

- People

Non living components

- land / soil
- water
- Air

How components depend on each other

1. Land / soil

This is part of the earth's surface where:-

- Plants and animals stay, build houses / nests, roads grow food etc.
- On land we also find rocks and minerals.

2. Water

- Water is a liquid found on earth in the environment.
- It is found in lakes, rivers, streams, wells, strings, seas and oceans.
- Water support life of both animals and plants.

N:B The main source of water in our environment is rain.

3. Air

- It is a mixture of gases.
- It is found every where in our environment
- It is used for breathing for both animals and plants.

NB. Air is made up of the following gases.

Nitrogen	-	78%
Oxygen	-	21%
Carbondioxide	-	0.03%
Rare gases	-	0.97%

4. Plants

- They are livingthings on earth
- They are many different types of plants on earth.
- Some plants are useful while others are useless.
- Animals depend on plants and also plants depend on animals

5. **Animals**

- They are also part of environment.
- Animals depend on plants and plants depend on animals in one way or another.

People

- People are part of the environment.
- People are distributed in different parts of the world.

SCIENCE LESSON NOTES FOR P.4 TERM 2

MUSCULAR AND SKELETAL SYSTEM

Skeletal system

What is a skeleton?

This is a frame work of bones

Functions of a skeleton to man

- It gives the body shape
- It supports the body in movement
- It protects delicate organs of the body eg brain, lungs, heart, eyes, spinal cord.
- It manufactures body cells in bone marrows
- It provides surface for attachment of muscles

Types of skeleton

- Endo skeleton (animal including man)
- Exo skeleton (insects)
- Hydro skeleton (worms)

Endo skeleton
This is the type of skeleton found inside the body of an animla eg human beings, animals.
NB: Its made up of bones and cartilage

Exo skeleton
This is where a hard material is formed outside the body. This hard materials is caused cuticle.
Examples of creatures with exo skeleton include; insects, crustaceans, cylops, crab, lobster etc

Structure of a human skeleton

The four main parts of skeleton

i) The skull: parts they protect include eyes, brain, inner ear
ii) The back bone: Spinal cord
iii) The limbs: legs and hands
iv) The limb girdle : shoulder and hips

NB:

i) The skeleton is made up of 206 bones
ii) A spinal cord is along string of nerves running from the brain to the bottom of your back.

Bones
Bones are the hardest tissue found in the boyd of vertebrates.
Vertebrates are creatures with a backbone eg man, birds, animals etc
Bones consists of mineral salts, called calcium which make them stronger

Types of bones
Bones are classified according to their shape

i) long bones
ii) short bones
iii) flat bones
iv) irregular bones

Long bones
These are found in the legs and arms e.g. femur, humerus, fibular, tibia, ulna, radius.
NB: femur is the longest and strongest bone in the body

Short bones
These are found in the feet and hands eg metarcarpals, (fingers) and meartasoul (toes)

Flat bones eg scapular and bones of the skull

Irregular bones

These are found in the wrist and ankle eg carpals, and tarsals

Cartilage

It's a softer and elastic than bones. In man cartilage is found in;

i) nose
ii) outer ear
iii) wind pipe
iv) parts of the ribs

JOINTS

A joint is a where two or more bones meet in the body.

Types of joints

i) moveable joints
ii) immovable joints

Movable joints

These are joints which allow movements in the body

For example;

i) hinge joint
ii) ball socket
iii) gliding joint
iv) pivot joint

Hinge joint

These allow movements in only one plane

Or

They allow to and fro movements

They are called hinge joints because their movements is like that of a door on its hinges.

Structure of a hinge joint (knee)

Functions of each parts

Tendons: they are structures which join bones to muscles

Ligament: they are structures which joint bones to bones

Synoval fluid: they prevent friction between bones. It lubricates joints, reduce friction at a joint.

Cartilage: it protects the end of each bone at a joint from damage

Ball and socket joint

This is the type of joint that allow movements in all directions.

NB: ball and socket joints make a full turn or revolution (360). They are found in (i) shoulder
ii) hips

Structure of a ball and socket joint

NB: difference between a hinge joint and ball and socket joint
Hinge joint move in only one plane while ball and socket move in all directions

Gliding joints
This is where flat bones slide over one another. They make little movements in all directions. They are found in ankles and wrist.

Diagram showing gliding joints

Pivot joint
They allow little movement in all directions. They allow our heads to nod and shake. it found in the neck vertebra.

Diagram showing a pivot joint

Immovable joints
These don't allow any movement in the body. Examples are; suture joints in the skull.
Diagram showing suture joint in the skull

MUSCLES

Muscles are fibrous tissues that are attached to bones in the body.
NB: muscles are attached to bones by strong fibrous tissues called tendons. Muscles only relax and contracts they don't expand.

Types of muscles

i) Voluntary muscles
ii) Involuntary muscles

Voluntary muscles

These are muscles whose movements is controlled by our will.
Examples of voluntary muscles include;

- Biceps (upper)
- Triceps (lower)
- Calf muscles
- Thigh muscles
- Intercostals muscles (diaphragm)

Diagram showing biceps and triceps

NB: When the arm is bent the biceps contract and triceps relax. When the arms is straight the biceps relax and triceps contracts.

Involuntary muscles

These are muscles whose movement is automatic. We have little or no control over them.

Examples of involuntary muscles

- Cardiac muscles (heart muscles)
- Walls of the alimentary canal
- Reproductive system
- Blood vessels
- Excretory system
- Muscles of the eyes

Functions of muscles in the body

a) They join bones in the body
b) The allow movement in the body
c) They help animals to perform heavy duties or activities
d) Muscles store food for the body

Posture

It is the way the person positions his body
Or
It means the position of the body for everything we do.

Importance of a good posture

- It keeps the body in their right positions
- It helps the skeleton to develop in the right way
- Muscles become strong
- We look smart

Dangers of bad posture

- It deforms bones (they grow bent)
- It leads to indigestion (food is not digested well)
- It leads to back and chest pain

Diseases associated with the skeletal and muscular systems

i) Polio
ii) Rickets
iii) Leprosy
iv) Cancer of the bones
v) Tuberculosis of the spine

Disease	Cause	Symptoms	Control
Polio	Virus	• Paralysis • Weakness in limbs • Fever • It cripples limbs eg legs and arms	• Immunize with polio vaccine • Drink boiled water • Wash hands with soap • Use toilets and latrine
Rickets	Lack of Vit D calcium and phosphorus	Common fractures Bow legged	Include foods rich in Vit D, calcium and phosphorus in your diet
Leprosy	Germs	Signs : loss of toes, fingers and even the whole land or foot may get off	

Disorders include;

- Cuts
- Fractures –broken or crackled bone
- Sprains – injury on ligament
- Strains – injury on muscles
- Dislocation- when a bone get out of its normal position
- Backache

How to keep/maintain muscles and bones healthy

- East foods rich in vitamin D , calcium and phosphorus
- Have children immunized early against polio
- Have regular body exercises
- Avoid playing dangerous games
- Have a good posture
- Have proper personal hygiene

Importance of body exercise

- It reduces weight
- Make muscles and tendons strong
- Make joints become more flexible
- Reduce risks of heart disease
- It helps in quick food digestion

NB: Proper personal hygiene help to prevent skin diseases which are harmful to the muscles eg scabies, boils, polio and leprosy.

ACCIDENTS AND FIRST AID

Accidents

An accident is a sudden unexpected happening that causes injury or death

Types of accidents

- Fall
- Taking poisons
- Fainting
- Burns and scalds
- Snake and dog bites
- Nose bleeding
- Stings
- Road traffic accidents
- Near drowning
- Electronic shock
- Dislocation
- Suffocation

Fracture

Broken- bone in the bone
Burn – injury caused by dry heat
Seald- injury caused by wet heat
Strain – over stretched muscle
Dislocation- displacement of above frame its position
Sprain - injury of a ligament

Road traffic accidents

These are accidents which happen to road users
Pedestrians: these are people who walk along the road
Cyclists: these are people who bicycles and motorcycles
Motorists: are people who drive motor vehicles
Passengers: are people carried in the vehicles

Causes of road traffic accidents

- Over speeding
- Driving under the influence of drugs
- Over loading
- Playing on roads
- Careless driving
- Vehicles in poor mechanical conditions

Prevention and control of accidents

- Following the high way code
- Children should stop playing on the road
- Putting speed governors in cars
- Construction of humps on the roads
- Put zebra crossing on busy roads
- Driving vehicles that are in good conditions
- Don't drink and drive

The high way code
When crossing the road, look right, look left, look right again if there is no vehicle coming cross the road.
FIRST AID
First aid is the first help given to a casually before he/she is taken to hospital.
A casually is a person who has got injured in an accident

Reasons for giving first aid

- To save life
- To save blood
- To reduce pain
- To prevent further injury
- To promote quick recovery

Qualities of a first aider

- Should be knowledgeable
- Should be gentle and tactful
- Should be kind and sympathetic
- Should be honest

Responsibilities of a good first aider

- To examine the condition of the causality
- Identify the problem using the signs and symptoms
- To assist the causality as quickly as possible
- Take the causality to a health centre

First aid box
This is a box where we keep the tools used when giving first aid.

How to use a first aid box

- All drugs in the box must be well labeled
- Use clear sterilized materials
- Expired drugs should be removed from the first aid box and destroyed

Components of a first aid kit

- A pair of scissors
- Cotton wool
- Pain killers (panadols)
- Razor blades
- Bandages
- Antiseptics
- Gauze
- Plaster
- Syringes
- Sling

Injuries

A bruise is an injury got after the body has been hit and doesn't get broken
Wound: is a break in the continuity of body tissue
Fracture: is a broken or cracked bone

Types of fractures
Simple fracture: This is when the bone breaks and remains in the body
Compound fracture: this is when the bone breaks and comes out of the skin

Signs of a fracture
- The affected part swells
- Pain in the attached part
- The broken limb appears crooked
- Victim may get shock

First aid for fracture
- Apply splints to keep broken bones in position
- Tie the splints with a bandage
- Rush the victim to hospital
- In case of a compound fracture, don't attempt to push back broken bone, you may cause further injury, just rush the victim to hospital

Sprain
Sprain is a trusted or torn ligament. Keep joint in nesting position and apply piece of ice then bandage the joint.

Strain
Is an over streeled muscle. Rub affected part with a liniment then take victim to health worker

Dislocation
This is when a bone is displaced from its position
Wrap a piece of ice around the joint (cold compress)
Rub affected part with liniment or deep heat rub
NB: If causality cannot walk or has a broken back bone, and then is no ambulance to help we can use

Stretcher
Diagram

Intestinal worms
Worms
These are parasites that live in our bodies
Note: Parasites are living organisms that live and feed on other living organisms without killing them.
Worms feed on either digested food or blood.
When worms enter our bodies, they live or stay in the intestines.
The living organism on which parasites depend is called a host.

Examples of intestinal worms

- Tape worm
- Hook worms
- Round worms
- Pin worms
- Thread worms
- Bilharzias flukes
- Guinea worms
- Whip worms

Tapeworms

Tapeworms enter out bodies through eating half cooked meat e.g. pork, mutton or beef. When tape worms enter our bodies, they stay in the small intestines. Tape worms feed on digested food.

Structure of tapeworm

Round worms

Round worms enter our bodies through eating unwashed fruits and vegetables. When round worms enter our bodies they live in the small intestines and feed on digested food

Structure

Hook worms

Hookworms enter our bodies through bare feet especially around the ankles
Hook worms live in the small intestines and feed on blood of the host.
Hookworms cause anaemia (hook worm anaemia)

Thread worms

They are smaller than hookworms and enter our bodies through our bare feet. They live in the small intestines and feed on the blood of the host.

Pin worms

They enter our bodies through the mouth when an infected person handles food. They live in the large intestines. They cause itching around the anus especially at night.

Whip worms

They live in the large intestines. They enter out bodies through the eating unwanted fruits and vegetables.

Guinea worms

They enter out bodies through drinking water contaminated with guinea eggs. They live in the blood until they reach the lower parts of the our legs. They grow and make the legs to burst causing wounds.

Bilharzia blood fluke

They live in the veins around the bladder, large intestines or small intestines.

Signs and symptoms of intestinal worms

- The cause abdominal pain
- The person loses weight , appetite etc
- Persons feels weak and tired
- Persons develops diarrhoea
- Grinding of the teeth in children
- Thy cause restlessness
- In case of guinea worms, swelling and bursting of the infected part on the leg.

Prevention of intestinal worms

- Use latrines for urinating and dropping faeces
- Wash and cook vegetables before eating them
- Cook meat so that there are not red parts left
- Boil drinking water
- Cut your finger nails short and keep them clean
- Don't play in dirty places
- Don't play or swim in stagnant water or stream and rivers
- Wear shoes whenever possible especially in wet places

Disease

A disease is an illness or disorder caused by an infection or un natural growth

They are divided into two groups namely;

a) communicable disease
b) non-communicable disease

Communicable disease

Communicable diseases are disease that can be spread from one person to another

These are diseases caused by germs

The germs that cause diseases are called pathogens

Germs are spread /carried by vectors

Germs are of four types

a) bacteria
b) virus
c) protozoa
d) fungi

Communicable diseases are also called

i) Transmisable disease
ii) Infectious disease

Ways through which communicable disease are spread

- Through air (air borne disease)
- Through insect bites
- Through animal bites (e.g. rabies , plague)
- Through contaminate water (water borne disease)
- Through body contact with infected people (contagious)
- Through cuts on the body e.g. tetanus and AIDS

Insect borne diseases

Insect	Disease
House fly	Trachoma Cholera Typhoid Dysentery Diarrhoea
Tsetse fly	Sleeping sickness (man) Nagana (animals)
Mosquitoes i) Female anopheles ii) Culex iii) Aedes /tiger	Malaria Elephantiasis Yellow fever
Ticks	Relapsing fever
Black flies	River blindness
Cockroaches	Food poisoning Leprosy Amoebia dysentery Typhoid
Mites	Typhus fever Relapsing fever
Rats flea	Plague

Water borne diseases

These are diseases spread through contaminated water

Examples

- Diarrhoea
- Bilharzias
- Typhoid
- Dysentery
- Cholera
- Polio
- Worms
- Hepatitis
- Diarrhoea

Contagious diseases

These are diseases spread through close body contact with an infected person.

Examples

- AIDS
- Leprosy
- Ringworm
- Scabies
- Syphilis
- Gonorrhoea
- Ebola
- Cholera

Air borne diseases

These are diseases spread through contaminate air.

Examples;

- Mumps
- Measles
- Influenza
- Common colds
- Whooping cough
- Diphtheria
- Chicken pox
- Pneumonia

Disease spread through cuts on the body
These are disease through cuts on the body.
Examples

- Tetanus
- AIDS

AIDS in full: Acquired Immune Deficiency Syndrome
AIDS is caused by a virus called HIV
HIV in full: Human Immuno-Deficiency Virus
Note: AIDS is spread from one person to another in the following ways;-

- Sharing sharp objects with an infected person
- Blood transfusion
- Sexual intercourse with an infected person

Prevention of AIDS

- Abstain from sex
- Use condom
- Be faithful

Non communicable disease
These are diseases that are not spread by germs
Or
These are diseases which cannot be spread from one person to another.
Communicable disease can also be called

i) Non infectious
ii) Non transmisable disease

Non communicable disease are of four groups namely;

- Deficiency disease
- Inherited disease
- Metabolic diseases
- Cancer

Deficiency
These are diseases caused due to lack of any food valve in the body
Example

- Kwashiorkor
- Marasmus
- Rickets
- Scurvy
- Beriberi

- Goiter
- Night blindness
- Anaemia

Inherited disease

These are diseases which are passed on to children from their parents \.

Example

- Sickle cells
- Anaemia
- Haemophilla (failure of blood clot)

Metabolic disease

These are diseases which result from over eating

Examples;

- Obesity
- Diabetes

Cancer

This is condition when the body cells reproduce at an abnormal rate and produce swellings.

Examples

- Breast cancer
- Blood cancer
- Liver cancer
- Lung cancer
- Bone marrow cancer
- Cancer of the uterus
- Cancer of the cervix

TYPES OF CHANGES IN WEATHER AND CLIMATE

Climate

Climate is the average weather condition of a place recorded for a long time.

Weather

Weather is the state /condition of the atmosphere at a given time.

Types of weather

a) cloudy
b) windy
c) sunny
d) rainy
e) humid

Diagrams to illustrate the different types of weather

Note: people who foretell weather change are meteologists

Elements or factors which determine the type of weather includes;

- rainfall
- cloud cover
- sun shine
- temperature
- humidity
- wind
- air pressure
- atmospheric pressure

Rainfall

Rainfall is water falling in separate drops from clouds.

Types of rainfall

Convectional rainfall
Cyclonic rainfall
Relief rainfall

Convectional rainfall

This is the type of received on (in) area around water bodies eg lakes and river

Illustration

Cyclonic rainfall

This is formed as a result of warm and cold air meeting at a certain place

Illustration

Relief rainfall

This is the type of rainfall received around mountainous and hilly areas

Illustration

Note: Rainfall is measured using an instrument called rain gauge
Rainfall is measured in millimeters

Diagram of a rain gauge

The rain gauge must be put in an open place to measure the actual amount received
It should be put 30 centimeters above the ground to avoid running water from entering the measuring cylinder.

Formation of rainfall

Rain is formed by the process called water cycle.
The water cycle involves the following processes namely;

i) Evaporation
ii) Condensation
iii) Transpiration

Evaporation

Is the process by which water changes to vapour

Condensation

Is the process by which vapour changes to water droplets

Transpiration

Is the process by which plants lose water to the atmosphere inform of vapour.

Diagram to illustrate water cycle

Uses of the following during rain cycle.

Sun: It causes evaporation

Importance/uses/advantages of rainfall

- It's the main source of water
- Its cools down the temperature
- It provides water to plants to grow and make their own food
- It helps farmers crops to grow quickly
- In increase water level in water sources

Dangers /disadvantages of rainfall

- Too much rainfall causes floods

- Too much rainfall spoil crops by logging in the soil
- It displaces wild animals
- It causes delay in transport

Humidity

Humidity is the amount of water vapour floating in the atmosphere. We also a wet and dry bulb (hygrometer)

Note:

The reading of the wet bulb measure temperature of water vapour

The dry bulb measures temperature in air

Diagram of the hygrometer

Sun shine

- The sun is the main natural source of energy
- Sun shine determines a sunny weather
- It raises from the east and sets in the west
- When the sun is in the sky, it determines the direction of our shadows
- In the morning and evening our shadows are longer
- At mid day shadows appear short and around the object because the sun is over head
- To determine how much it has shined in an area we use a shun shine recorder (carpel

Illustration of a sun shine recorder

Advantages of sun shine

- It provides sun light to plants to make their own food
- It dries our harvested seeds
- It helps in information of rainfall
- It helps our skin to make vitamin D
- It provides light and heat energy
- The sun dries our clothes
- It kills germs

Disadvantages of too much sun shine

- To much sun shine causes drought
- It makes the soil very hard to cultivate
- It reduces water level of water bodies
- It affects the supply of hydro electricity power
- It makes the temperature very hot

Cloud cover

Types of clouds

- Cirrus clouds
- Cumulus clouds
- Stratus clouds
- Nimbus clouds

Characteristics of each type of clouds

Cirrus clouds

- They look like feathers in the sky
- They are the furthest in the sky

Cumulus clouds

- They resemble cottom piles with flat bottom
- They can develop into thunder clouds thus may indicate rain

Stratus clouds

- They are nearer to the earth
- They spread widely in the sky with calm flat layers
- They are a sign of fine weather

Nimbus clouds

- They bring rain which give us water
- They are the nearest to the earth
- They are dark grey in colour

Uses of clouds

- They protect us from direct sun rays
- They reduce temperature in certain places
- They keep the earth warm at night
- Some provide us with rain e.g. nimbus

Dangers of clouds

- Clouds like cumulo-nimbus can make it difficult for pilots to find their way
- Clouds cause lightening
- Clouds cause rain storms

Wind

Wind is moving air or wind is air in motion

Instruments used in wind

Wind vane

- It shows the direction of wind
- The arrow point in the direction where wind is blowing from

Wind sock

- It measures the strength of wind
- It points in the direction where the wind is blowing to

Anemometer:

- It measures the speed of wind

Illustration of instruments above

Wind vane anemometer wind sock

Advantages of wind

- It helps in winnowing
- It dries our clothes
- It helps in pollination of plants
- It helps information of rainfall

Dangers of wind

- Wind spreads germs
- It takes away the top soil
- Wind causes storm
- Strong wind makes navigation very difficult
- It breaks down trees and houses

Atmosphere pressure

This is the force exerted by air in the atmosphere

Atmospheric pressure is measured using an instrument called barometer

Diagram of a barometer

Temperature

- Temperature is the hotness or coldness of an object or place
- Temperature is measured using an instrument called thermometer

Thermometer

Thermo means heat

Meter means measure

A thermometer uses two different scales

i) Centigrade /celcius (^{0}C)

ii) Fahrenheit (^{0}F)

A thermometer uses two liquids namely

i) Mercury

ii) Alcohol

Types of thermometer

i) clinical /doctor's thermometer

ii) six's minimum and maximum thermometer
iii) ordinary scientific thermometer
iv) wall thermometer

A clinical thermometer

Its used to measure human body temperature
It begins from 34^0 C (95^0 F) to 42^0 C (110^0 C)
Because the human body temperature ranges between 34 and 42
Note: The normal body temperature is 37^0 C or 98.40^0 F

The clinical thermometer is placed in places which surrounds the bulb to allow even expansion of mercury. These include;

- in the armpits
- in the anus
- in the vagina
- in the mouth under the tongue

Structure of clinical thermometer

Functions of the parts of a clinical thermometer

Link: it prevents the backflow of mercury before the doctor reads the temperature
Bulb: it keep or stores mercury

Why is mercury commonly used in a thermometer?

- it does not stick on the walls of a thermometer
- it does not evaporate
- it expands quickly
- it is easily seen

The six's thermometer

- it also called the maximum and minimum thermometer
- it was made by James six
- it uses both liquid at the same time

Illustration

Note: in a weather station we find a Stevenson screen (white in colour)

- it is painted white to reflect heat
- instruments kept in a Stevenson screen are ;

i) barometer
ii) hygrometer
iii) six's thermometer

Illustrations of a six's thermometer

MEASUREMENT

Measurement is the process of finding out how long, short, big, small, heavy or light an object is.

Measuring length

It is the distance between two points. It shows how long or short an object is. Things used to measure length are; hand span, meter ruler, string etc

Length is measured in millimeter, centimeters, decimeter, meters decameter, hectometer, and kilometer

Area

Area is the total space occupied by a figure

Note: length is the longer side of a figure and width long side o the figure

Examples of finding area

Volume

Volume is the space occupied by an object

It is measured in cubic units ie cc or cm or mm^3, or c.mm

Volume is also measured in litres (L)

The basic units for measuring volume is litres.

Regular shaped objects

These are objects which have proper shape. Eg cubes, cuboids, chalk box, a brick, block , tin etc

Volume = length X width X height
Cubic units

Irregular shaped objects
Volume of an irregular object is measured using displacement methods
The object pushes out ware (displaces) the amount of water displaced is equal to the volume of the object

Ways of measuring irregular shaped objects
Using an overflow can and a measuring cylinder
Illustration

Note:
Volume of the displaced water is equal to the volume of an object
Volume = final level –original level

Using a measuring cylinder only and the object
Illustration

Weight and mass
Weight is the force an object has as result of being pulled down by the force of gravity.

Note: gravity is the force of the earth that pulls down objects
Weight of an object depends on three things:

i) size of an object
ii) substance the object is made
iii) the pull of the force of gravity

Other units for weight are kilogram, grams, and milligram
Instrument for measuring weight.
A spring balance

Mass
Mass is the amount of matter in an object. Mass is measured in grams (g) and kilograms (kg)
Instruments used for measuring mass are
Beam balance
Weighing balance

Diagram of balance
Difference between weight and mass

Mass	**Weight**
It is measured in kilograms or grams	It is measured in Newtons (N)
Mass is the amount of matter in a body	Weight is the force that pulls objects

	downwards
Mass does not change from place to place	Weight changes from place to place

Density

It is mass per unit.

Density = mass (M) or weight (grams per millimeter) (g/m/
Volume

Note:

A hydrometer is an instrument used for measuring the density of different liquids

Activities about find density of both irregular and regular objects

Floating and sinking

Floating is when an object is put in water and it stays on top of it.

Objects float on water because they are less dense than water

Object float on water because their density is less than that of water

Example of objects which float on water , cork, wood, plastic rubber, boats , sponge etc

Sinking

Sinking is when an object is put in water and it goes to the bottom of the water. Objects sink in water because their density is greater than the density of water. Objects sink because they are more dense than water e.g. stones, sand, soil, metals, glass, nails etc

Note: A sinking object displaces water equal to its volume while a floating object displaces water equal to its weight.

TERM III

FOOD AND NUTRITION

What is food?

Food is something good to eat.

Or

Food is a liquid or solid which carries out one or more of the life function

What is nutrition?

Nutrition is the process by which foods is taken in and used by the body.

What is feeding?

Feeding is the taking in of food

Why do people eat food (reasons?)

They are summarized in 5Hs as:-

- hunger : because our stomach feel empty
- habit : because it is time of day when we normally eat food
- health: in order to be healthy and live
- happiness: we enjoy eating certain foods
- hospitality: it's a customer to after/give something to eat /drink to a visitor

Uses of food in the body

- to provide energy
- responsible for body growth
- to repair worn out body tissues
- to protect the body against diseases

Balanced diet

A balanced diet is a meal containing all food values in their right amounts

A balanced diet is made up of seven classes of food.

They include;

- proteins (grow food)
- carbohydrates (Go good)
- vitamins (glow food)
- fats and oils
- minerals salts
- water
- roughages

NB: Failure to include any of the food valves in the diet causes nutritional deficiency diseases.
Nutritional deficiency diseases are body disorders caused due to lack of a certain food value in the diet

Proteins

These are body building foods
They are also called grow foods

Uses of proteins in the body

- responsible for body growth
- they repair worn out body tissues
- they make anti-bodies and enzymes
- they repair worn out body cells

Sources of proteins

- fish

- eggs
- beans
- milk
- meat
- soya
- grass hoppers
- white ants
- mushrooms
- chicken

NB: Lack of proteins in the body causes a nutritional deficiency diseases called kwashiorkor

Signs and symptoms of kwashiorkor

- swollen face
- little brown hair which can easily fall off the head
- swollen hands and legs
- the press of the skin takes long to come back to its position

Prevention of kwashiorkor

- feeding the children on food containing more proteins
- take the child to hospital eg (mwana mugimu ward in mulago)

Carbohydrates

These are energy giving foods
They are also called go food

Sources of carbohydrates

- honey
- cassava
- millet
- posho
- jam
- bread
- sweet potatoes
- irish potatoes
- yams
- milk
- rice
- maize
- wheat

Lack of carbohydrates in the diet causes a nutritional deficiency diseases called marasmusu or starvation

Signs and symptoms of marasmus

- Very bright eyes
- Thinness
- Under weight
- Swollen pot belly (stomach)
- Face look like that of an old person
- Always hungry

Prevention of marasmus

- continue breast feeding children to two years
- give enough good food

Vitamins

These are health giving food

Or these are also protective food

They are also called grow food

NB: There are a number of vitamins good for our health which includes A,B, B_2, C , D, E .

Vitamins are written using capital letters

Vitamins protect our bodies against some diseases

Types of vitamins and their uses

Vitamins	Sources	Function	Disease	Signs and symptoms
A	Green vegetables, fish, milk, butter, eggs, margarine	To keep good eyes sight	Night blindness	• Poor eye sight • Reduced night vision • Cataracts on eyes
B_1	g.nuts, rice, wheat , green vegetables	For the health growth of the body	Beriberi	• Retarded growth • Lose of appetite • Weakness
B_2	g.nuts, rice, wheat , green vegetables	It keeps the skin healthy	Pellagra	• Skin disorder • Sores on eye and mouth membrane
C	Fresh fruits, and green vegetables	It keeps the skin gums and blood vessels health	Scurvy	• Bleeding gums • Poor healing of wounds • No resistance to diseases • Anaemia

D Its formed under the skin by the sun	Liver, milk, eggs, butter, margarine	For strong formation of bones and teeth	Rickets	• Soft bones • Weak teeth • It brings abnormal formation of bones
E	Butter, green vegetables, spinach, liver	For health reproductive system		Embryo and sperms die

Mineral salts

They are also called protective or health giving foods (grow food0

Mineral salts	Sources	Function /use	Deficiency
Calcium	Beans, cheese, milk fish, eggs , grains	Strengthens bones, and teeth Prevents	Rickets
Iodine	Sea fish, iodine , salt, sea water	For proper working of the thyroid glands	Goiter (swelling in the neck)
Sodium chloride (salts)	Salt, fresh meat, fish, smoked fish, processed foods	Help in muscle activity Help in transmitting nerve signals Maintain fluid balance in the body	
Iron	Meat, liver., kidney, egg york	Help in formation of haemoglobin	Anaemia
Phosphorous	Dairy food, meat, fish. Milk, cheese , eggs , cereals, green, leafty vegetables	Combines with calcium for strong bones and teeth Help in absorption of carbohydrates	
Fluoride	Tooth paste , fish , bones, fluoridated water (mineral water)	Makes tooth enamel more resistant to decay	

Fats and oils

They provide the body with more heat and energy

In mammals fats are stored under the skin

Sources of fats

Milk

Butter
Cheese
Egg york
Ground nuts
Simsim
Ghee
Palm oil

Functions

- To provide warmth and games
- To protect the heart and the kidney
- To assist in making body cells

NB: Too much fats and oils in the body causes obesity
Obesity is the condition which results from eating more fats and oil foods.

Causes of obesity
Over eating and inactivity
Eating more foods than is needed by the body for growth and work
NB: Obesity can cause heart diseases e.g pressure

Water
Sources of water
Tea, coffee, milk, soup, fruit, drinks, concentrated battle drinks etc

Uses of water in the body

- It helps in easy digestion and absorption of food
- It reduces body temperature by sweating
- If forms the basis of the blood as plasma
- Water is present in the synovial fluid so it reduces friction
- It helps in the removing of waste materials eg urine, sweat
- It quenches thirst]

Roughages
These are undigested fibres from cell walls of plants

Sources of roughages

- Green leafy vegetables
- Bread and flour
- Apples
- Oranges
- Dried fruits
- Flesh fruits

- Nuts and seeds

Importance of roughages

- It prevents constipation
- It reduces the risks of bowl cancer
- It allows easy food digestion
- Allow easy movement of the food through the walls of intestines
- It encourages food chewing
- It adds bulk to the diet

Diet for special groups of people (vulnerable groups)

Vulnerable groups are groups of people which are easily harmed by not having enough different foot nutrients

They include;

- Pregnant mothers
- Breast feeding mothers
- Babies
- Weaning babies
- The sick
- The elderly
- Labourers (workers)
- Sports men and women

Pregnant women

Proteins

- To help their babies inside them grow
- To repair their bodies

Carbohydrates

- To help their babies inside them grow
- To repair bodies

Vitamin

- To protect the unborn baby against diseases

Mineral salts

- To have enough blood in the body
- For the unborn baby to grow strong bones and teeth

Breast feeding mothers

Carbohydrates

To get energy

Foods that will help her make breast milk for the baby eg fruits like; milk, porridge, juice, tea,

Babies

The best food for babies is breast milk

Why is breast milk the best for babies?

- It provides a balanced diet (meal)
- Its cheap
- It protects the baby against disease
- It is ready there to take at any time
- It promotes love between the baby and mother
- Its at body temperature
- It dose not waste time to prepare

Weaning babes

What is weaning?

This is a process of making the baby get used to other foods while still breast feeding

Weaning process begins at 6months. Weaning babies should be given soft food because they do not have teeth to chew the food.

These foods include;

Porridge, baby soya, milk, mashed sweet potatoes, irish potatoes.

Weaning babies should be given foods that provide a balanced diet

The sick

- Proteins for body repair
- Vitamins for their bodies to be strong enough to fight diseases
- Energy giving food to provide them a lot of energy
- Give a lot of fruit and milk
- Fluids to prevent dehydration and replace lost water

Milk it contains all food values

NB: The sick need to be fed from time to time (frequently) because they eat little at a time.

Labourers (workers)

These workers include sports men and women

Food they need;

Carbohydrates

Plenty of it because they do heavy work and perform heavy activities.

Proteins: for body repair because they lose a lot when performing their activities.

A lot of drinks because they lose a lot to water through sweating

MALNUTRITION

This poor or bad feeding

Or

This is when the body does not receive enough of the essential food values.

NB: If a person results into nutritional deficiency diseases. (NDD)

Nutritional deficiency diseases

These are diseases caused due to lack of certain food values in one's diet

Causes of malnutrition (underfeeding)

- Eating too much carbohydrate food
- Lack of protein containing foods in the body

Symptoms of malnutrition

- Chronic fatigue (tiredness)
- Loss of interest in work
- Low concentration at work
- Poor spirit of doing things

NB: In babies malnutrition usually occurs during weaning

Signs of a healthy person

- Mentally alert and enjoys physical and mental activities
- Energetic
- Has good eyes sight
- Has clear skin, good hair and in good conditions
- Has well bones and good teeth
- Not fatty
- Has well formed muscles

THE DIGESTIVE SYSTEM

Terms used

Digestion: This is the breakdown of food into smaller solute substances that can be used by the body.

Egestion: This is the removal of undigested food from the body

Absorption: This is the process by which digested food is taken into the blood stream to be used by the body

Indigestion: This is the condition where food is not properly digested.

Ingestion: This is the process of talking in food in the mouth

Alimentary canal: Is a muscular tube running form the mouth to the anus

Peristaltic: is a wave like contractions of the walls of the alimentary canal

NB: the digestion of food begins from the mouth and ends in the small intestines.

The digestive system

A Mouth
B Gullet
C Stomach
D Liver
E Gall bladder
F Duodenum
G Ileum
L Colon
M Rectum
N Anus
K Pancreas
H Appendix

Digestion in the mouth

Digestion begins in the mouth.
In the mouth, food is chewed by the teeth and rolled into bolus by the tongue.
Food in the mouth is mixed with saliva to

i) Soften it
ii) Lubricate the gullet during swallowing

Saliva is a digestive juice produced from the mouth by the salivary glands.
Saliva contains an enzyme called salivary amylase which digests cooked starch
NB: An enzyme is a chemical that speeds up food digestion.

The gullet

The gullet is tube that leads to the stomach
Its also called oesophagus
The gullet pushes each bolus of food towards the stomach in a wave like movement called peristalsis.

Food in the stomach

Food stays in the stomach for about 3-4 hours
Food in the stomach is thoroughly culmed (turned over an over) into enzyme by an action process called peristalsis.
The stomach walls produce a digestive juice called gastric juice and an acid called hydrochloric acid.
The hydrochloric acid kills germs that escape with food during swallowing.

Gastric juice contains two enzymes namely;

i) Rennin
ii) Pepsin

Absorption of common salts, alcohol, some drugs takes place in the stomach.
Note: Renin acts on proteins in the breast milk in young children
Pepsin acts (digest) proteins in other foods in adults.

The liver
The liver produces a green substance called bile
Bile is stored in the gall bladder
Bile contains bile salt which emulsify (breakdown) fats

Use of the liver

i) Produces bile
ii) The liver stores iron
iii) Stores vitamin a and d
iv) The liver manufactures plasma proteins
v) Controls blood sugar
vi) Converts poisonous substances into harmless ones

The duodenum
This is a U-shaped part about 25 cm long
It's the first part of the small intestines

The pancreas
Produces pancreatic juice which contains enzymes that complete digestion carbohydrates, fats and proteins.
These are;

i) Amylase
ii) Lipase
iii) Trypsin

The ileum
The walls of the ileum produce an intestinal juice to complete digestion which ends here.
Absorption of food takes place here
Its has finger like projections called vili which absorbs digested food.
The blood vessel called hepatic portal vein takes blood rich in digested food to the liver.

The large intestines
The large intestines is made up of two parts namely; colon and rectum
The absorption of water takes place in the large intestine.

The rectum
The undigested food is stored in the rectum
The layer undigested food stays in the rectum, the harder it gets
The undigested food is passed out through the anus as faeces

Diseases and disorders of the digestive system

Diseases

Appendiatis

Caused by bacteria when they enter the appendix and make it smell
One feels pain in the lower right side of the abdomen
It causes death when it bursts
It can be cured by removing the appendix through surgery.

Peptic ulcers

These are wounds or sores found in the stomach or small intestines
They ache when hydrochloric acid gets into contact with them
They are caused by one taking long without eating food smoking and Alcohol
Ulcers ache a lot when one is hungry

Worms

These can block the small intestines when they become many.
They hinder the movement of food in the alimentary canal

Disorders

Heart burn

It's a burning pain which occur within the chest
Caused by eating lots of starch

Constipation

This happens when one takes long without passing out faeces

Causes

- tack of roughages in the body
- taking little drinks /water
- irregular meals
- lack of body exercises

How to avoid constipation

- eating fruits and vegetables
- including roughages in the diet
- drinking plenty of water after

Indigestion

This is the condition when the food is not properly digested.

Causes of indigestion

- Eating to much
- Improper chewing of food
- Eating humidly
- Poor dental formula

Avoiding indigestion

- Eating enough food at a time
- Chewing food properly
- Drinking Water After Eating

Vomiting

Vomiting is ejecting food from the stomach through vomiting can be caused by eating strange foods and sickness.

Intestinal obstruction

This is caused when intestines twist themselves

How to care for the digestive system

- We can do this by practicing good eating habit.
- Washing hands before and after eating
- Do not talk with food in the mouth
- Chewing food properly and eating slowly
- Eating balanced diet
- Eating well cooked food
- Resting after eating
- Having regular exercises
- Brushing teeth after every meal

The teeth

There are two sets of teeth namely;

i) The milk set (teeth)
ii) The permanent set (teeth)

The milk teeth

They are the first to develop in a person's jaw
These tastes up to 6years
They start falling out and by the age of 13years
They are replaced by the permanent set
The milk teeth are 20 in number
The milk teeth are made up of only three types of teeth namely;

i) Incisors
ii) Canines
iii) Pre-molars

Arrangement of milk in the jaw

Types	Incisors	Canines	Pre-molar	Total
Upper jaw	4	2	4	10
Lower jaw	4	2	4	10
Total	8	4	8	20

Permanent teeth

The permanent teeth last for the rest of a person's life is well cared for

They are 32 (thirty two) in number
The permanent teeth (set) are made up of four types of teeth namely;

i) Incisor
ii) Canines
iii) Premolars
iv) Molars

The permanent teeth replace the milk teeth

Types	Incisors	Canines	Pre-molar	Molars	Total
Upper jaw	4	2	4	6	16
Lower jaw	4	2	4	6	16
Total	8	4	8	12	32

Incisors
They have sharp straight edges
The edges is like a chisel
They are four (4) in each jaw
They are used for biting and cutting
They are well developed in rats, mice, rabbits and squirrels

Diagram of an incisor tooth
The canines
They have sharp pointed edges
They are used for tearing flesh
In man, they are too (2) in each jaw
They are most developed in dogs, cats, leopards, lions because they use them for hunting
They are absent in the rabbits

Diagram of a canine tooth

Pre-molars
They have flat blunt ridges
They are used for

- crushing
- chewing
- grinding

In man they are four (4)
They have one root

Diagram of a pre-molar tooth

Molars

They have flat blunt ridges

They have two or more roots

They are used for

- chewing
- crushing
- grinding

They are six in each jaw

Diagram of a molar tooth

The regions of teeth

The mouth has three regions namely;

i) crown
ii) neck
iii) the root

Diagram showing the region of teeth

Crown

This is the part of the tooth above the gum. Its mainly the enamel

The neck

This is the part of the tooth on the same level with the gum where the crown joins the root

The root

Its the part of the tooth which is in the jaw bone

Internal parts of the canine tooth

E Enamel
D Dentine
PC Pulp cavity
BV Blood vessel
SN Sensory nerves
G Gum
C Cement

Note: All the types of teeth have the same parts

The molar teeth

E Enamel
D Dentine
PC Pulp cavity
BV Blood vessel
SN Sensory nerves
G Gum
C Cement

Functions of the parts of the teeth

Enamel
It prevent the wear and tear of the tooth
Its the hardest part of the tooth
The enamel is made of salts called calcium and phosphates which make it stronger

Dentine
It contains living cells and channels through which the tooth receive food

Pulp cavity
Contains blood vessels and sensory nerves
The blood vessel bring in digested food to the tooth
The sensory nerves are sensitive to heat cold and pain

Cement
It helps to fix to the tooth in the socket
Gum
Provides support to the tooth in the jaw bone

Jaw bone
Holds the tooth in position

Teeth diseases

- Dental caries or tooth decays
- Plaque
- Periodontal tooth disease

Dental caries (tooth decay)
Tooth decay is caused by bacteria when they act on sugars and starch that remain in the teeth
The bacteria produce an acid called lactic acid
The lactic acids begin the wear and tear of the enamel and dentine leading to the formation of the cavities

If the cavities are not seen early, the bacteria will attack the pulp cavity causing boils with pus at the roots with a lot of pus
Cavities can be filled with dental amalgam by the dentists
If they are ignored, the tooth has to be removed

Plaque
Plaque is coatings on the teeth
Plaque is caused by saliva containing crown down spread to most parts of the crown downwards, it gum inflammation or swellings called gingivitis
If plaque is neglected, it forms black of the or swallowing s called calculus

Periodontal diseases
Its an infection of the gum and tooth sockets
Its caused when plaque is neglected resulting into gingivitis

Signs of gingivitis

- Bleeding gum
- Bad breath
- The gum goes away from the crown exposing the cement

Note: if gingivitis is neglected

- The fibres in cement break down
- The gum continues to recede
- The tooth becomes loose and fall out

General ways of caring for the teeth (Coral hygiene)

Oral hygiene

Is the general cleanliness of the mouth?

Activities involved in oral health

- Flossing the teeth (using a string)
- Brushing the teeth
- Having a balanced meal
- Rinsing the mouth
- Tooth picking (using tooth picks)
- Visiting a dentist for check up

Other ways of caring for the teeth

- Avoid very hot and cold foods as they weakened the teeth
- Avoid sweets and sweetened foods as they attract bacteria that cause tooth decay
- Have plenty of flesh fruits and vegetables as they help to clean the teeth