**TREASURED KIDS SCHOOLS**

**SCHEME OF WORK FOR P.4 SCIENCE TERM I 2020**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WK** | **PD** | **THEME** | **SUB-THEME** | **CONTENT** | **COMPETENCES** | **METHODS** | **ACTIVITY** | **LIFE SKILLS AND VALUES** | **INSTRUCTIONAL MATERIALS** | **REF** |
| **1** | **1** | **WORLD OF LIVING THINGS**  **WORLD OF LIVING THINGS** | **PLANT LIFE**  **PLANT LIFE** | **Types of plants**   * Flowering plants * Non flowering plants.   **Flowering plants**   * Definition. * Examples of flowering plants * Parts of a flowering plant. * Functions of each part. * Systems of a flowering plant   **Main parts of a flowering plant**   1. Leaves   - Structure  - Uses of leaves.  - Types of leaves.  - Leaf venation  **Process in leaves**   * Photosynthesis * Transpiration  1. **Stems**   - Types of stems.  - Function of the stem.  - Ways how weak stems  climb others.   1. **Roots**   - Describe roots.  - Functions of roots.  - Types of roots.   1. **Flowers**   - Definition  **-** The structure  - Functions of parts of a  flower.  - Uses of a flower to man  and plants.  **Pollination**   * Definition. * Types of pollination. * Agents of pollination. * Characteristics of wind and insect pollinated flowers.   **Fertilization**   * Definition. * Where it takes place in a flower. * Reproductive parts of a flower.   \*Pistil  \*stamen  **Seeds**   * Definition * Structure of seeds * Types / classes / groups of seeds. * Functions of seeds.   **Germination**   * Definition * Types of germination. * Conditions necessary for germination. | **Language competence**  The learner:   * Spells the words correctly. * Pronounce the given words correctly.   Subject competences  The learner:   * States the types of plants. * Name the parts of a flowering plant. * Discusses the functions of parts of a flowering plant.   **Subject competences**  The learner:   * States the type of stems * Describes the functions of stems and roots. * States the uses of flowers to man and plants.   **Language competence**  The learner:-   * Pronounces the words correctly. * Spells the given words correctly.   **Subject competences**  The learner:   * Defines fertilization. * Identifies the reproductive parts of a flower. * Draws different structures of seeds and the different types of germination.   **Language competences**  The learner:   * Pronounces the given words correctly. * Spells’ and writes the words correctly. * Make correct sentences using the given words. | -Guided discovery  -Discussion  -Demonstration  -Question and answer.  -Explanation | -Note taking  -Drawing  -Naming | Critical thinking.  Problem solving.  Decision making.  Effective communication | * Prepared chart. * Leaves. * flowers | Comp. Science Pupils book 4.  MK integrated scie pupils bk 4 |
|  |  | **WORLD OF LIVING THINGS** | **GROWING CROPS** | **Crops**   * Definition * Common crops grown   \*Maize  \*Sorghum  \*Peas, etc  **Groups of crops**   * Perennial crops. * Annual crops. * Definition and examples of the above groups of crops.   **Garden tools**   * Examples * Uses of each garden tool. * Caring for the garden tools.   **Crop growing practices**  **Land preparation**   * Tools used. * Activities involved in land preparation. * When land is prepared (season)   **Planting materials selection.**   * Why it is done? * Qualities of a good planting material (viable seeds) * How different crops are planted (propagation)   **Planting**   * Methods / ways of planting. * Description of the methods. * Advantages and disadvantages of each method. | **Subject competences**  The learner:-   * Identifies common crops grown. * States the groups of crops and explains each. * Identifies garden tools and their uses.   **Language competences.**  The learner:   * Spells, pronounce, reads and write given words correctly.   **Subject competences**  The learner:-   * Identifies tools used in land preparation. * Describes how different crops are propagated or planted. * Identifies methods of planting.   **Language competences**  The learner:-   * Pronounces, spells, reads, writes and makes sentences using the given words. | -Question and answer.  -Discovery  -Inquiry  Demonstration | -Answering question  -Writing  -Demonstration | -Awareness  -Creative thinking  -Care  Responsibility | * Real objects (plants) * A chart with garden tools. |  |
|  |  | **WORLD OF LIVING THINGS** | **GROWING CROPS** | **Nursery bed**   * Definition * Crops first planted in a nursery bed. * Define transplanting. * Advantages and disadvantages of a nursery bed. * Hardening off   **Caring for crops**   * Weeding   \*Definition  \*Examples of weeds  \*Importance  \*Dangers   * Manure * Watering   **Pruning**   * Definition * Tools * Advantages and disadvantages.   **Thinning**   * Definition * Advantages.   **Mulching**   * Definition * Examples of mulches. * Advantages and disadvantages of mulching. | **Subject competences**  The learner:   * Defines a nursery bed. * Identifies crops first planted in a nursery bed. * Discusses ways of caring for crops.   **Language competences**  The learner:-   * Reads and writes the words. * Makes correct sentences using the given words. | Discussion  Question and answer.  Explanation |  |  |  |  |
|  |  | **WORLD OF LIVING THINGS** | **GROWING CROPS** | * Staking * Gap fitting * **Pests and disease control** * Definition of pests. * Examples of pests. * Effects of pests and diseases. * Diseases of some crops. * Signs of diseases. * Ways of controlling pests and diseases * **Harvesting** * Definition * When to harvest and why? * Tools used in harvesting. * **Food preservation** * Definition * Methods of preserving food. * **Storage** * Examples of storage pests. * Types of stores. * Qualities of a good store. | **Subject competences**  The learner:-   * Defines a pest. * Gives examples of pests. * Discusses ways of controlling pests and disease.   **Language competences**  The learner:   * Pronounces, spells, reads the given words correctly.   **Subject competences**  The learner:-   * Identifies examples of storage pests. * States the types of stores.   **Language competences**  The learner:-   * Pronounces, spells the words correctly. | Discussion.  Explanation. | Defining.  Writing.  Reading | Responsibility  Concern.  Honesty. |  |  |
|  |  | **OUR ENVIRONMENT** | **Weather changes around us.** | * Definition of weather and climate * Types of weather. * Elements of weather * Weather struments * Structures of weather instruments. | **Subjects**  The learner:-   * Describes the changes in weather. * Makes accurate measurements of rainfall. * Uses thermometer to measure temperature. | -Group work.  -Guided discovery.  -Question and answer.  -Guided discussion. | Answering both oral and written questions. | -Effective communication  -Critical thinking  -Creative thinking.  -Problem solving. | Weather chart.  Clinical thermometer  A chart showing clinical thermometer. | Comprehensive book four pg.  Mk.scie Bk 4  Integrated Bk. 4. |
|  |  | **OUR ENVIRONMENT** | **Weather changes around us.** | .**Types of rainfall.**   * Formation of rain. * Advantages of rain and disadvantages.   **Sunshine**   * Advantages and dangers of sunshine.   **Cloud cover**   * Types of clouds and their characteristics. * Advantages of clouds.   **Wind**   * Defnition. * Instrument used to measure. * Advantages of wind.   **Humidity:**   * Definition. * Instrument used to measure. * Advantages of humidity.   **Atmosperic pressure**   * Definition. * Causes. * Instrument used.   **Temperature**   * Definition * Instrument used * Types of thermometer.  1. **Clinical thermoter**.   - Structure.  - Liquid used and reasons why they are used.  - Normal body temperature of  both scales.   1. Minimum and miximum **thermometer.**   - Structure. | * Draws a simple weather chart. * Names the parts of thermometer.   Languages.  The learner:-   * Explains orally the water cycle. * Pronounce, spell and write parts of a clinical thermometer. |  |  | -Self-awareness.  -Pre diction |  |  |
|  | **3**  **4** | **HUMAN HEALTH** | **Personal Hygiene** | **Personal hygiene.**   * Definition. * Ways of keeping our body clean. * Items used in keeping our bodies clean. * How to keep things at home clean. e.g   \* Bedroom  \* Beddings  \* Kitchen   * Importance of keeping our bodies clean.   \* Remove germs.  \* Remove dirt.  \*Avoid bad smell.  \* Keep health.  \* Be smart. | **Subject:**  The learner should be able to:-   * Define personal hygiene. * State ways of keeping our bodies clean. * Give the importance of personal hygiene. * Demonstrate clean body activities.   **Language.**   * Spell the words correctly. * Pronounce the words correctly. * Write the words in correct spelling. | -Discussion.  -Discovery  -Demonstration  -Observation  Question and answer. | -Combing hair.  -Brushing teeth.  -Washing the face.  -Cutting finger nails short. | -Appreciation.  -Caring.  -Responsibility  -Self esteem  -Assertiveness | - Comb  - Water  - Tooth paste.  - Tooth brush.  - Nail cutters. | MK. Intergrated primary Science Bk. |

**TREASURED KIDS SCHOOLS**

**SCIENCE LESSON NOTES FOR P.4 TERM I 2020**

**PLANT LIFE**

**PLANTS**

**Types of plants**

1. Flowering plants
2. Non flowering plants.

**Non – flowering plants**

These are plants which do not produce flowers.

**Examples of non flowering plants.**

* Pines
* Ferns
* Mosses
* Eucalyptus
* Liverworts
* Conifers
* Lichens

**Differences between plants and animals**

**Plants Animals**

* Plants make their own food- Animals do not make their own food.
* Plants have chlorophyll - Animals do not have chlorophyll.
* Plants move by growing - Animals move freely from one place to another.

**Flowering plants**

These are plants that bear flowers.

**Examples of flowering plants**

* Mangoes
* Maize
* Pawpaws
* Peas
* Coffee
* Cotton
* Oranges
* Grapes
* Jackfruit
* Acacia

**STRUCTURE OFA FLOWERING PLANTS**

**Systems of a flowering plants.**

1. Shoot system
2. Root system

**Shoot system**

The system of the plant above the ground level.

It develops from the plumule of the seed.

**Parts of a shoot system**

1. Leaves
2. Fruits
3. Node
4. Terminal bud
5. Stem
6. Flower
7. Internodes
8. Auxiliary bud

**LEAVES**

**Part of a leaf**

Veins

Midrib

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Apex

Leaf margin

Stomata

Leaf blade / Lamina

Leaf base

Leaf stalk

**Functions of each part**

**Leaf stalk (petiole)**: To supply water to the leaf from the branch / stem.

**Leaf base**: Fixes the leaf on the stem.

**Midrib . Mid vein**: Transports water and nutrients from the leaf stalk.

**Veins:**

1. Supply water and minerals from the mid vein to all parts of the leaf.
2. Collect manufactured food from all parts of the leaf to the mid vein.

**Stomata:**

1. For breathing
2. For transpiration

**Lamina (leaf blade)**

1. For respiration
2. For making food / photosynthesis.

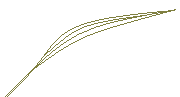
**Leaf venation**

This is the arrangement of veins in the leaf.

**Types of leaf venation**

1. Net work leaf venation
2. Parallel leaf venation.

**Parallel leaf venation**

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**Example of plants with parallel venation**

1. All cereals such as maize, millet, maize, rice, sorghum
2. Grass
3. Sugar cane.

**Net leaf venation**



**Examples of plants with network venation**

1. All legumes such as beans, peas, soya beans, ground nuts
2. Jack fruit
3. Mango plant.

**Types of leaves**

1. Simple leaves
2. Compound leaves

**Simple leaves**

These are leaves with one leaflet on the leaf stalk.

**Characteristics of simple leaves**

1. They have one leaflet on the stalk.
2. They have one margin.
3. They have one leaf stalk

**Kinds of simple leaves**

* Simple entire

**Plants with simple entire leaves**

1. Mango
2. Jackfruit
3. Avacado.

* Simple serrated leaves

Example

Black jack.

* **Simple lobbed leaves**
* Simple palmate leaves

Example

Pawpaw

* Simple lanceolate leaf
* Simple divided leaf

**Compound leaves**

These are leaves with more than one leaflet on the stalk.

**Characteristics of compound leaves**

* They have many leaflets.
* They have many leaf stalks.

**Kinds of compound leaves.**

* Compound pinnate leaves e.g. acacia.
* **Compound bi – pinnate leaves e.g. Jacaranda**
* **Compound trifoliate e,g. beans, soya.**
* **Compound digitate of cassava**

**Uses of leaves to people**

1. Some leaves are eaten as food e.g. cabbage
2. For sale
3. For making shelter for man.
4. For decation e.g. palm leaves.
5. For beverage e.g. tea leaves.
6. For herbal medicine e.g. mango guavas etc.
7. For feeding domestic animals.
8. For making mats.
9. For study purpose.

**Uses of leaves to a plant**

1. For making food (photosynthesis)
2. For breathing
3. For transpiration.
4. Some store food as the plants e.g. onions.
5. Some are used for propagation, e.g. bryophyllum and onions.

The onion bulbil / bulb

**Functions of parts of the onion**

1. Foliage leaves: make food for the onion.
2. Storage leaves: Store food for the onion.
3. Scale leaves: Protect the inside parts.
4. Auxiliary bud: Grows in to a new plant.
5. Stem: holds the leaves together.

**Transpiration**

It is the process through which plants lose water to the atmosphere through leaves.

**Importance of transpiration to plants.**

* It cools the plants.
* It helps the plants to suck more water from the soil.

**Importance of transpiration to the environment.**

* It helps in rain formation.

**Illustration to show how transpiration occurs.**

**How plants control the rate of transpiration**

* By shedding off the leaves.
* Some plants have small leaves.
* Some plants have thick leaves with few stomata.
* Some plants have wax on their leaves e.g. banana.
* Some plants have thorns on stems and leaves e.g. cactus, aloevera.

**Factors affecting the rate of transpiration**

* Size of the leaves: The bigger the leaves , the higher the rate of transpiration
* Temperature: the higher the temperature, the higher the rate of transpiration.
* Humidity: the higher the humidity, the lower the rate of transpiration.

**Photosynthesis**

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

**Photo :** means light.

**Synthesis:**  means to build / make / manufacture.

**Conditions for photosynthesis**

Chlorophyll: traps sunlight energy

Sunlight provides energy to the leaf.

Carbondioxide and water: raw materials.

NB: The raw materials for photosynthesis are carbondioxide and water.

The bi – product of photosynthesis are oxygen and water, starch.

**Stems**

**Uses of a stem to a plant.**

1. It transports water and mineral salts from the roots to the leaves.
2. A stem transports food from the leaves to other parts of the plant.
3. Some stems are used for propagation e.g. cassava, sugar cane.
4. A stem supports the leaves and branches of a plant.
5. Some stems are used for breathing.
6. Some stems store food for the plant e.g. irish potatoes, sugar cane.

**Uses of stems to people**

1. Some stems are eaten.
2. Some stems are used for firewood.
3. For herbal medicine.
4. For making timber.
5. For sale.
6. For study purposes.

**Uses of stems to other animals**

1. Some stems are used as food.
2. Some are habitats for some animals e.g. ants, birds.

**Types of stems.**

* Upright stems (Erect stems) e.g. Mangoes, Oranges, Maize.
* Climb stems e.g. cucumber, yam, pea plants, morning glory
* Under ground stems e.g. stem tubers: They are swollen underground stems with stored food e.g. Irish potatoes, coco yams.
* Creeping stems e.g. sweet potatoes.
* Rhizomes e.g. ginger, curry, turmeric. Rhizomes are horizontal underground stems.

Note: Sugarcanes are not stem tubers because they are n ot found underground.

**Ways plants climb others**

1. Using tendrils: e.g. passion fruits, cucumber, peas, pumpkins etc.
2. Using hooks or thorns: e.g. bougainvillea.
3. By twinning (clasping): e.g. morning glory, some beans, sponge.

Why do some plants climb others\?

1. For support
2. To get enough sunlight.

**Root system**

It is the part of a plant below the ground level.

**Types of root systems**

1. Tap root systems.
2. Fibrous root systems.

**Part of a tap root system**

**Examples**

1. Mangoes
2. Beans
3. Oranges
4. Jackfruit

Main root: supports the plant firmly in the ground.

Lateral roots: supports the plant firmly in the ground.

Root hairs: suck water and mineral salts from the soil.

Root cap: Protects the tip of the roots.

**FIBROUS ROOT SYSTEM**

They grow from one point at the base of the stem. Plants with fibrous root system are; maize, sorghum, millet, rice, wheat.

NB: All cereals have fibrous root system and parallel leave venation.

**Types of roots.**

* Prop roots:

- They are commonly found on cereals

- Their main purpose is to give extra support to a plant.

**Plants with prop roots**

1. Maize
2. Sugarcane
3. Sorghum
4. Burley

* Adventitious roots

They develop from the stems of a plant.

Plants with adventitious roots

1. Onions
2. Bananas
3. Pumpkins
4. Pineapples.
   * Breathing roots
   * Clasping roots
   * Buttress roots
   * Stilt roots.

**Uses of root to people**

1. Some roots are eaten.
2. Some roots are used for making herbal medicine.
3. Some roots are sold to get money.
4. For study purposes.
5. Some roots have nodules which make the soil fertile.

**Uses of roots to plants.**

1. They hold the plant firmly in the soil.
2. They suck water and mineral salts from the soil.
3. Some roots are used for breathing.
4. Some roots store food for the plant e.g. cassava, sweet potatoes.

**Root tubers**

They are swollen underground roots with stored food.

**Examples**

1. Sweet potatoes
2. Cassava
3. Carrots

**Flowers**

A flower is a reproductive part of a plant.

Uses of flowers to plants

* For reproduction.

**Uses of flowers to people**

1. For decoration
2. Showing love
3. For sale.
4. For making perfume.
5. They are used as wreaths.
6. Some flowers are eaten.
7. Some are used as a sign of welcome (bouquet)

**Uses of flowers to other animals**

1. Bees collect nectar and pollen from flowers.
2. Humming birds, sun birds collect nectar from flowers.

**Structure of a flower.**

**Importance of each part**

Flower stalk: Holds the flower on the stem.

Sepals: Protect the flower when it is still young.

They make food for the flower.

NB: A group of sepals is called calyx.

Anthers: Produce pollen grains.

Filament: Hold the anthers.

Stigma: Receives pollen grains during pollination.

NB: A group of stigmas is called carpel.

Style: Holds the stigma up right.

Allows pollen tubes to pass through to the ovary.

Petals: Brightly coloured petals attract pollinators e.g. birds, insects.

Ovary: Develops into a fruit after fertilization.

Ovules: Develops in to seeds after fertilization.

**Pollination.**

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

**Types of pollination**

* Self pollination.
* Cross pollination.

**Self pollination**

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

Movement of pollen grains.

Plants which carry out self pollination.

* Tomatoes
* Wild marigold.

**Cross pollination**

It is the transfer of pollen grains from the anthers to the stigma of different plants but of the same kind.

Movement of pollen grains.

**Plants which carry out cross pollination**

1. Maize
2. Coconut
3. Pawpaw
4. Cow peas
5. Passion fruits

**Difference between self pollinated flower and cross pollinated flowers.**

|  |  |
| --- | --- |
| **Self pollinated** | **Cross pollinated** |
| * Filaments are longer than styles * Pistils and stamen on the same flower. * Large amounts of pollen grains produced. * Anthers raised higher than the stigmas. | * Styles are longer than filaments. * Pistils and stamen on different flowers. * Small amounts of pollen grains produced. * Stigmas raised higher than anthers. |

**Agents of pollination**

An agent of pollination is anything that carries pollen grains from the anthers to the stigma.

**Examples of agents of pollination.**

1. Insects like bees, butterflies, months, beetles.
2. Birds like sun birds, humming birds.
3. Animals like man.
4. Wind.

**Different between wind pollinated flowers and insect pollinated flowers**

|  |  |
| --- | --- |
| **Insect pollinated flowers**   * Have brightly coloured petals. * Have large petals. * Produce good scent. * Produce nectar. * Produce few pollen grains. * Have sticky stigma * Have heavier pollen grain | **Wind pollinated flowers**   * Have dull coloured petals * Have small petals. * Produce no scent. * Produce no nectar. * Produce a lot of pollen grains. * Have hairy stigma. * Have lighter pollen grains |

**Seeds**

A seed is a fertilized ovule

**Classes / Types / Groups of seeds**

1. Monocotyledonous / monocot seeds
2. Dicotyledonous / Dicot seeds.

**Monocotyledonous seeds**

These are seeds with one cotyledon

**Examples of monocot seeds**

* Maize
* Wheat
* Rice
* Millet
* Sorghum

NB: These seeds are also called cereals or grains.

**Maize grain (fruit)**

* A maize grain is not called a seed but it is called a fruit.
* It is called a fruit because it has two scars.

**Scars of a maize grain**

1. Style scar
2. Stalk scar

**External parts of a maize grain / fruit.**

**The internal parts of a maize grain / fruit**

**Functions of each part.**

Testa (seed coat): protects the inside parts of the grain.

Radicle: develops into root system.

Plumule: develops into shoot system.

Embryo: grow into a new plant.

Endosperm: It stores for the embryo.

Cotyledon: It absorbs food from the endosperm

Simplifies the food for embryo during germination.

Style scar: The part where the style was attached.

**Dicotyledonous seeds.**

These are seeds with two cotyledons.

Examples of dicotyledonous seeds

* Beans
* Peas
* Groundnuts
* Oranges
* Simsim etc

**Characteristics of dicotyledonous seeds**

1. They have two cotyledons.
2. They have tap root system.
3. They store food in the cotyledon.
4. They have network leaf venation.
5. They undergo epigeal germination.

**External parts**

**Internal parts**

**Functions of each part:**

Cotyledon : Stores food for the embryo.

Testa/ seed coat: Protects the inside parts of a seed.

Radical : Develops into root system.

Plumule : Develops into shoot system.

Scar / hilum : Is where the seed is attached to the pod or fruit.

Micropyle : A hole that allows in air and water into the seed during germination.

Embryo : (Radicle and plumule): Grows in a new plant.

**Seed germination.**

It is the growing of a seed into a seedling.

A seedling is a young plant.

**Conditions for germination**

1. Water
2. Warmth
3. Oxygen

**Importance of each conditions.**

Water : It softens the testa for the embryo to pass.

Oxygen : It is used for respiration.

Warmth: Provides the right temperature for germination.

**The process of germination**

1. Water enters the seed through the micropyle.
2. The testa softens, relaxes and allows the embryo to pass through.
3. The cotyledon can either remain in the ground or come out of the ground.

**Types of germination**

1. Epigeal germination
2. Hypogeal germination.

**Epigeal germination.**

The type of germination where the cotyledon comes out of the ground / soil.

Plants with epigeal germination.

1. Beans
2. Soya
3. Peas
4. Groundnuts
5. French beans
6. Simsim.

Hypogeal germination

It is the type of germination where the cotyledon remains in the soil.

**Plants with hypogeal germination**

1. Maize
2. Wheat
3. Sorghum
4. Millet
5. Oats
6. Barley

Topical exercise questions

1. How is transpiration important to the environment?
2. State the gas needed during germination.
3. How are flowers important to plants?
4. Maize grains has two scars namely \_\_\_\_\_\_\_\_\_\_\_\_ and stalk scar.
5. How is chlorophyll useful during photo synthesis?
6. Draw a maize grain and show the endosperm.
7. Give one example of insect pollinator.
8. Below is a diagram showing away a plant uses for climbing.

Name it.

1. Which part of a flower attracts pollinators like insects?
2. Name one example a root tuber.
3. What type of leaf venation has a maize plant?
4. Why do some plants climb others?
5. In the space below draw a well labeled stamen.
6. Mention one function of a stem to a plant.
7. Briefly explain the term “seedling”

**GROWING CROPS**

**Crops**

A crop is a plant grown for a purpose.

**Types of crops**

1. Cereals
2. Legumes
3. Root crops
4. Fruit crops
5. Vegetables

**Cereals**

Cereals are some times called grains or monocots.

**Examples of cereals**

* Maize
* Millet
* Sorghum
* Rice
* Wheat
* Barley

**Leguminous crops (Legumes)**

* They have nodules on their roots.
* They have seeds in pods.

**Examples of legumes**

* Beans
* Peas
* Groundnuts
* Soya beans

**Root structure of a leguminous crop**

Root nodules:-

* Swellings found on roots of leguminous plants.
* They keep nitrogen fixing bacteria.

NB: Nitrogen fixing bacteria trap nitrogen from air and change in to nitrates as plant food.

**Fruit crops**

* Mangoes
* Apples
* Pumpkins
* Pawpaw
* Pine apples.

**Root crops**

* Sweet potatoes
* Cassava
* Carrots

**Vegetables**

* Cabbage
* Spinach
* Lettuce
* Dodo
* Nakati
* Bbuga

**Groups of crops**

1. Annual crops
2. Perennial crops

**Annual crops:**

These crops grow, produce and die within a year.

**Examples:**

* Beans
* Maize
* Soya beans
* Millet
* Sorghum
* Rice etc

**Perennial crops**

These crops grow, produce and die in more than a year.

Examples:-

* Tea
* Coffee
* Cocoa
* Mago
* Banana

**Garden tools and their uses**

|  |  |
| --- | --- |
| Hoe | * Digging * Planting * Weeding * Harvesting |
| Spade | * Mixing manure * Lifting soil. |
| Rake | * Leveling soil * Collecting weeds. |
| Wheel barrow | * Carrying soil * Carrying manure * Carrying harvests |
| Slasher | * Cutting grass * Cutting weeds |
| Axe | * Cutting big trees * Chopping wood |
| Panga | * Cutting small branches * Cutting trees. * Harvesting sugar cane |
| Forked hoe | * Digging hard ground * Digging stony ground |
| Watering can | * Watering crops * Watering seedling |
| Trowel | * Transplanting * Carrying seedlings |
| Garden fork | * Mixing manure |
| Pick axe | * Digging in rocky ground. * Digging in stony soils. |
| Secateur | * Pruning crops |
| Pruner | * Pruning crops |
| Hand fork | * Light weeding * Removing seedling from soil. |
| Sprayer | * Spraying crops. |
| Knives | * Harvesting * Pruning * peeling |
| Tape measure | * Spacing crops in the garden. |
| Sickle | * Harvesting. |

**Care for garden tools**

* Washing after use and drying them.
* Keep the tools in dry place.
* Painting some of them.

**Crop growing practices.**

1. **Land preparation**

It is done during dry season to:-

* + Prevent the weeds from germinating again after digging and ploughing.
  + Avoid the soil from sticking on to the hoe or plough.

**Ways of preparing land**

* Digging
* Ploughing
* Slashing / clearing
* Cutting big trees
* Harrowing
* De – trashing.

**Garden tool / implements used in preparing land**

* Hoes
* Ox ploughs
* Tractors
* Slashers
* Rakes
* Panga
* Axe

**Importance of preparing land**

1. To soften the soil.
2. Digging and ploughing allows water into the soil.
3. It makes planting easy.
4. Allows air in to the soil.
5. Cutting away big trees opens space for crops to get enough sunlight.
6. **Selecting viable planting materials**
7. Examples of planting materials.
8. Seeds
9. Suckers
10. Stem cuttings
11. Rhizomes
12. bulbs
13. **Qualities of good planting materials**
14. They should be mature
15. They should not be damaged
16. They should be free from pests.
17. They should be free from diseases.
18. They should not be too old.
19. They should be of the same variety.
20. **Importance of selecting planting materials**
21. It prevents wastage of land.
22. It ensures quality plants.
23. It prevents wastage of time.
24. It prevents wastage of labour.

**Planting and sowing**

This is putting of planting materials in the soil to germinate.

NB: Planting is done during wet / rainy season.

**Reasons for planting crops in wet season.**

* There is enough water for seed germination.
* The soil is soft for easy growth of roots.

**Methods of planting**

1. Planting in rows
2. Broadcasting method.

**Row planting**

This is when planting materials are put in the soil in lines.

**Advantages of row planting**

* It makes weeding easy.
* It makes harvesting easy.
* It controls easy spread of pests and diseases.
* It avoids wastage of seeds and other planting materials.
* It allows proper spacing of crops.

**Disadvantages of row planting**

* It needs a lot of labour.
* It is time consuming.

**Example of plants planted by row planting**

* Maize
* Cassava
* Beans
* Pineapple
* Potatoes.

**Broad casting method**

This is the putting of seeds in the soil while scattering them.

**Advantages of broadcasting methods**

1. It saves time.
2. It does not need a lot of labour.
3. It does not waste nutrients in soil.

**Disadvantages of broadcasting methods**

1. It makes weeding difficult.
2. It makes harvesting difficult.
3. Pests and diseases can easily spread.

**Nursery bed.**

A nursery bed is a small garden where seedlings are grown before they are transplanted.

NB:

* Trowel is the garden used during transplanting.
* Transplanting is best done in the evening.

**Transplanting**

This is the transfer of seedlings from a nursery bed to the main garden.

**Why transplanting is done in the evening**

* It prevents wilting of the seedlings.
* There is little loss of water from the soil through evaporation.

**Garden tool used for transplanting.**

**Examples of plants grown in a nursery bed.**

1. Tomatoes
2. Onions
3. Coffee
4. Cabbbages
5. Passion fruits.

**Importance of a nursery bed**

1. It gives a farmer time to prepare the main garden.
2. It protects seedlings from heavy rain drops.
3. It protects seedlings from strong sunshine.
4. It helps farmers to select healthy seedlings.
5. It helps water to sink deeply in to the soil.

**Advantages of early planting**

* Crops make full use of rainfall for the season.
* Cereals mature early therefore get good market.
* Crops grow fast enough and compete with weeds for light nutrients and water before they flow.

**Gap filling**

The planting of sees or seedlings where they did not germinate in the garden.

Staking

Provision of extra support for plants with weak stems.

**Caring for crops.**

Ways in which farmers care for their crops in the garden

1. Thinning
2. Watering
3. Weeding
4. Manuring
5. Applying fertilizers.
6. Staking
7. Mulching
8. Providing shade.
9. Pruning.

**Weeding**

This is removal of unwanted plants from the garden.

**Examples of weeds**

1. Spear grass.
2. Elephant grass.
3. Black jack
4. Star grass
5. Wandering Jew
6. Guinea grass

**Garden tools for weeding**

1. Hand fork
2. Slasher
3. Hoe

**Dangers of weeds in the garden**

1. They compete for light, water, nutrients and spade with crops.
2. They encourage easy spread of pests.
3. They encourage easy spread of diseases.
4. They make harvesting difficult.

**Ways of controlling weeds.**

1. Slashing
2. Spraying / using herbicides.
3. Up rooting
4. Crop rotation
5. Mulching
6. Digging.

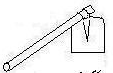
**Advantages of weeding a garden**

1. It reduces the competition for light, nutrients, water and space in the garden.
2. It makes harvesting easy.
3. It controls the easy spread of diseases.
4. It prevents the easy spread of crop pests.

**Uses of weeds to people.**

1. Some weeds are used as herbal medicine.
2. Some weeds are used as mulches.
3. Some weeds are used as animal feeds e.g. elephant grass for cattle.

**Manuring**

It is the putting of fertilizers in the soil to make it more fertile.

**Sources of manure**

* Animal dung and urine
* Plant remains
* Green plants.

**Types of manure (natural fertilizers)**

1. Compost manure: It is got from plant materials and animal wastes.
2. Green manure: It is got from ploughed, buried and rotten green materials like legumes.
3. Farm yard manure (F.Y.M): It is got from farm animal wastes, urine and decayed material.
4. Organic mulches: It is got through mulching using dry plant materials.

**Mulching**

Mulching is the covering of top soil with dry plant materials.

NB: Mulches are plant materials used for mulching.

**Examples of mulches**

* Elephant grass
* Coffee husks
* Banana leaves
* Chopped stems of bananas.
* Spear grass.

**Advantages of mulching**

* It keeps water (moisture) in the soil.
* It controls soil erosion.
* It makes the soil fertile.
* It controls the rapid growth of weeds.

**Disadvantages of mulching**

* Mulching keeps pests.
* Some mulches can grow into weeds.
* Mulching is a fire hazard
* It is tiresome.

**Pruning**

This is the removal of unwanted parts from a plant

**Advantages of pruning**

* It reduces the easy spread of crop diseases.
* It reduces competition for sunlight, water, nutrients and air.
* It improves on crop yields.

**Garden tool for pruning**

**Thinning**

It is the removal of excess plants in the garden / nursery bed.

**Advantages of thinning**

* It reduces competition for crop nutrients.
* It reduces the easy spread of pests.
* It reduces the spread of crop diseases.
* It improves on crop yields.

**Control of pests**

A pest is an animal that destroys crops.

**Examples of crop pests.**

* Army worms
* Birds
* Rats
* Termites
* Maize stalk bore
* Locusts
* Squirrels
* Aphids
* Cotton stainer
* Snails
* Banana weevil
* Maize weevil

**Dangers of crop pests.**

* They weaken plants.
* They lead to low produce.
* They lead to poor growth of crops.
* They destroy crops.

**Ways of controlling crop pests.**

* Spraying pesticides.
* Using scare crows
* By crop rotation.
* Planting pest free materials.
* Regular weeding.
* Up rooting and burning infected crops
* Proper spacing.
* Early planting.

**Crop diseases**

**Some crop diseases.**

|  |  |
| --- | --- |
| Disease | Plant attacked |
| Cassava mosaic  Leaf rot | Cassava plant |
| Tomato blight | Tomatoes |
| Ground nut Rosette | Groundnuts |
| Leaf spot  Maize streak | Maize |
| Powderly mildew | Mangoes, pawpaws, turnips |
| Smuts | Sugarcane, maize, sorghum |
| Rust | Cereals mill, maize, barley, wheat |
| Panama | Banana |

**Ways of controlling crop diseases**

* By crop rotation.
* Spraying chemicals.
* Uprooting and burning of infected crops.
* Planting healthy materials.
* Proper spacing
* Early planting.

**Crop rotation**

It is the growing of different types of crops on the same piece of land seasonally.

**Advantages of crop rotation**

* Keeps the soil fertile.
* Controls soil erosion.
* Controls crop pests.
* Controls crop diseases.

NB:

1. Legumes are alternated with non – leguminous plants.

Why: They make soil more fertile since legumes and nutrients to the soil.

1. Shallow rooters are alternated with deep rooters.

Why? This balances the use of nutrients from soil at different levels.

**Uses of water in soil**

* It makes the soil soft for roots to grow easily.
* It is used for seed germination.
* Plants use water to make food.
* It softens the ground for easy weeding.
* Cools the plants during transpiration.

**Harvesting**

This is collecting of ready (manure) crops from the garden.

* It is done during the dry season to dry harvests.

**Some garden tools for harvesting**

|  |  |
| --- | --- |
| **Tool** | **Purpose** |
| Sickle | Harvesting cereal crops |
| Hoe | Harvesting root crops. |
| Panga | Harvesting sugarcane, banana. |

**Methods of harvesting**

1. Hand picking (e.g coffee, oranges etc)
2. Cutting stems (e.g. sugarcane, banana)
3. Up rooting (e.g. groundnuts, cassava)
4. Digging (e.g. potatoes).

**Storing of food**

Keeping of food safely for future use.

**Reasons why farmers store food.**

1. To be eaten in dry season.
2. For planting in next season.
3. To be sold when market prices are better.

**Places where food can be stored**

1. In granaries
2. In soils
3. In refrigerators / freezers

**Qualities of a good store**

* It should be well ventilated.
* The roof should be leak proof.
* It should have rat guards.
* It should be clean and dry.

**A diagram showing a granary.**

**NB:**

1. Rat guard prevents rats from entering the store.
2. Leak proof roof prevents damping and rotting of the seeds.

**Some storage pests**

* Rats
* Maize weevil
* Bean weevil
* A storage beetle.
* Harvest mite

**Food preservation**

Is the preventing food from going bad.

**Methods of preserving food**

|  |  |
| --- | --- |
| Sun drying | Cassava, sweet potatoes, maize, Irish potatoes, Onions, millet, rice, sun flower, wheat, beans, soya beans, peas. |
| Freezing | Oranges, mangoes, avocados, sweet banana, Irish potatoes, cucumber, cabbage, water melon. |
| Tinning | Beans, Tomatoes. |

**TOPICAL QUESTIONS**

1. How do we call plants with root nodules?

2. Mention one example of a root tuber.

3. In the space below draw a garden tool for transplanting.

4. Give one example of a crop grown in a nursery bed.

5. Which season is best for harvesting?

6. Define crop rotation.

7. Apart from broadcasting methods of planting, name the other method.

8. Suggest one use of weed to people.

9. Write F.Y.M in full.

10. Give one disease that attacks tomatoes in the garden.

11. (a) What is harvesting?

(b) Mention two tools for harvesting.

(c) Suggest one method of harvesting.

12. (i) Give the meaning of the word pest!

(ii) Name two storage pests you know.

(iii) State one danger of pests to crops.

13. (a) Write two qualities of good planting materials.

(b) Mention one example of planting materials.

(c) Suggest one importance of early planting.

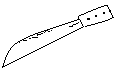
14. (a) Give two ways of preserving food.

(b) Why are rat guards put on the granary.

(c) List one place where food can be stored.

15. (a) Which term is used for covering of top soil with dry plant materials?

(b) Write three examples of mulches.

16. Name the garden tools below:-

 (i) (ii)

**WEATHER CHANGES AROUND US**

**WEATHER**

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

**Note:** The average weather condition of a place recorded for along period of time is called **climate**

**Types / states / conditions of weather**

* Rainy
* Sunny
* Cloudy
* Windy

**Weather chart**

**Elements of weather (factors**

Rainfall - Humidity - Air pressure

Sunshine - Temperature -

Cloudy cover - Wind

**Rain fall**

* Rain is water falling in separate drops from clouds.
* Rainfall is the amount of rainwater that falls in a certain area at a certain time.

**Types of rainfall**

There are three types of rainfall namely:-

1. Relief rainfall
2. Convectional rainfall
3. Cyclonic rainfall.

**Relief rainfall**

This is a type of rainfall received around mountainous and hilly places.

It is also known as aerographic rainfall.

Diagram

Convectional rainfall:-

This is the type of rainfall received on land and places near water bodies.

It is formed in the same way as the water cycle.

**A diagram to illustrate a water cycle.**

**Experiment to show a water cycle (diagram)**

**Note:**

Water cycle is a process by which rain is formed.

The water cycle involves the following process:

1. **Evaporation:**

This is a process by which water changes to vapour.

1. **Transpiration:**

This is the process by which plants lose water to the atmosphere in form of water vapour through the stomata.

1. **Condensation:**

This is the process by which vapour changes to water.

**Cyclonic rainfall:**

This type of rainfall is received as a result of warm air meeting cold air in a certain place.

**Diagram**

**Note:**

**1.** Rainfall is measured by an instrument called **rain gauge.**

2. Rainfall is measured in **millimeters.**

3. The rain gauge must be placed in an open place where rain is not destructed in order to get the correct amount of rainfall received.

4. The rain gauge should raised 30cm above the ground to prevent running water from entering the measuring cylinder.

**A diagram of a rain gauge.**

**Uses of rainfall (advantages)**

* Rainfall provides water for domestic use, industrial use, etc.
* Rainfall waters plants.
* It helps farmers crops to grow quickly and have good yield.
* It cools down the temperature in the atmosphere.
* It also softens the soil for easy cultivation.
* It increases the volume of water in water bodies for easy generation of hydro electricity power.

**Disadvantages (dangers) of too much / heavy rainfall**

* Too much rainfall cause floods.
* A lot of rainfall causes delay in transport.
* A lot of rainfall causes very cold temperature.
* Brings difficulty in constructing roads, houses etc.
* Too much rainfall can spoil crops and buildings.
* It also kills people.

**SUNSHINE**

Sunshine is measured by an instrument called sunshine recorder.

**Diagram of a sunshine recorder**

**Note:**

* Sun is the main natural source of heat and energy.
* It provides us with vitamin D with the help of the skin.

**Advantages / uses / importance of sunshine**

* It helps in rain formation.
* It dries harvested crops.
* It helps plants to make their own food.
* Helps our skin to make vitamin D.
* It kills some germs.

**Disadvantages / dangers of too much sunshine**

* It makes it very hot.
* Too much sunshine makes the soil hard for cultivation.
* It dries water sources.
* It kills animals and plants.

Clouds

Clouds are grouped according to their heights and general shape.

**Types of clouds**

(a) **Circus clouds**

- They look like feathers in the sky.

- They are the furthest in the sky at a height of 800m to 16000m above the ground.

(b) **Cumulus clouds**

- They are white clouds which resemble cotton piles with a flat bottom.

- They can develop into thunder and thus they may indicate rain.

(c) **Stratus clouds:**

- They are nearer the earth than the cumulus.

- They are a sign of fair weather.

(d) **Nimbus clouds**:

- They are clouds that bring us rain or give us rain.

- They are nearest to the earth.

- They are dark grey in colour.

**HUMUDITY:**

* This is the amount of water vapour in the atmosphere.
* When there is a lot of water vapour in the air, the weather is said to be humid.
* Humidity is measured by an instrument called **hygrometer**  or a wet and dry bulb.

**Diagram**

**TEMPERATURE:**

* This is the hotness or coldness of a baby or a place.
* The instrument used to measure temperature is called a **thermometer.**
* A thermometer is read in two scales namely:-

\* Degrees Celsius / centigrade

\* Degrees Fahrenheit.

**Types of thermometers**

These are two types of thermometers namely:-

* Clinical thermometer
* Minimum and maximum thermometer.

1. **Clinical thermometer**

- It is used in hospitals by doctors, nurses, etc to measure the human body temperature.

- The temperature of a human body must remain constant at 370C or 98.40F except when the person

is sick or has fever.

- The clinical thermometer is placed in the following places:-

\* In the mouth under the tongue to prevent biting and breaking the bulb.

\* In the arm pit.

\* In the anus

\* In the vigina.

**Diagram of a clinical thermometer**

**Minimum and maximum thermometer**

* It is sometimes called the six’s thermometer because it was first made by James six.
* The minimum and maximum thermometer is used to measure the lowest and highest temperature of the day.
* It uses both alcohol and mercury.

**Diagram**

**Note:**

1. In a weather station, we find the Stevenson screen where delicate weather instrument are kept.
2. A Stevenson screen is painted white to reflect heat.

**Diagram of a Stevenson screen**

**WIND**

* Wind is moving air.
* The instrument used to measure the direction of wind is called a **wind vane.** The arrow of the wind vane points in the direction from which wind is blowing.

**Other wind instruments**

* **A wind sock**  measures the direction and strength of wind but it points in the direction in which wind is blowing.
* **Anemometer** measures the speed of wind.

**Diagram of wing instruments**

**Advantages of wind:-**

* Wind helps to bring cold air in warm places.
* Wind helps in pollination of plants.
* Wind helps farmers to remove husks from their seeds (used in winnowing)
* Wind helps in the formation of rainfall.
* Wind dries wet things e.g. paint, clothes, etc.

**Disadvantages of wind**

* Wind can spread diseases like tuberculosis.
* Wind can take away top soil (causes soil erosion)
* Strong wind throws down houses, buildings and trees.
* Wind causes storms on land, lakes, seas, oceans and become a transport problem.

**ATMOSPHERIC PRESSURE**

* This is the force exerted by air in the atmosphere.
* It is caused by the movement of wind or air from one place to another.
* Atmospheric pressure is measured by an instrument called a barometer.

**Diagram of a barometer.**

**PERSONAL HYGIENE**

* Personal hygiene is the keeping of our bodies and the things we use clean.
* It is also the general cleanliness of our bodies.

**Ways of keeping our bodies clean (How to keep our bodies clean)**

* Bathing regularly.
* Cutting finger and toe nails short.
* Brushing teeth everyday.
* Washing hands after visiting the toilet or latrine.
* Washing hands after a physical task like digging picking rubbish etc.
* Washing hands before eating or touching food.
* Washing clothes regularly.
* Washing beddings regularly
* Combing hair daily.
* Ironing clothes and bedding.

**Items or things used in keeping our bodies clean**

* Water (clean) - bathing sponge - Towel
* Tooth paste - soap - Nail cutters / razor blade
* Tooth brush - comb - Dental floss
* Teeth picks - Ear buds

**How to keep things / items at home clean.**

1. Beddings and clothings: - Washing them

- Ironing

- spreading under the sunshine

- Spraying with insecticides

1. Utensils: - Washing

- Drying them

1. Kitchen: - Sweeping

- Mopping

- Scrubbing

- Removing cob webs.

**Importance of keeping our bodies clean**

* It controls the spread of germs.
* It prevents bad body smell.
* It prevents skin diseases.
* It prevents teeth diseases.
* It prevents lice, mites and ticks.
* To remove dirt.
* To be smart.

**END OF TOPIC QUESTIONS**

1. What do you understand by personal hygiene?

2. State any two ways of keeping our bodies clean.

3. Identify any two items used in keeping our bodies clean.

4. Why is brushing our teeth regularly important to our bodies?

(i) \_\_\_\_\_\_\_\_

(ii) \_\_\_\_\_\_\_\_

5. Suggest two reasons why people iron their clothings and bedding.

(i) \_\_\_\_\_\_\_\_\_\_\_\_

(ii) \_\_\_\_\_\_\_\_\_\_\_\_

6. Why do we wash our hands with soap and clean water after latrines or toilets?

7. Why do we cut our finger and toe nails short?

8. Raymond, a pupil in P.4 ate an un washed mango in the morning. Identify any two diseases he is likely to face.

9. How do we keep the following items at home clean?

(a) Beddings and clothings:

(i) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(ii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) utensils:

(i) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(ii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Why is keeping our bodies clean important? Give three reasons.

**SIR APOLLO KAGGWA SCHOOLS**

**SCHEME OF WORK FOR P.4 SCIENCE TERM II 2019**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WK** | **PD** | **THEME** | **SUB-THEME** | **CONTENT** | **COMPETENCES** | **METHODS** | **ACTIVITY** | **LIFE SKILLS AND VALUES** | **INSTRUCTIONAL MATERIALS** | **REF** |
| **1** | **1** | **HUMAN HEALTH** | **OUR FOOD** | **OUR FOOD**   * Definition:   \*Food  \*Feeding  \*Nutrition   * **Sources of food**   \*Super markets  \*Markets  \*Shops  \*Gardens   * Why we eat food.   (5Hs)   * Uses of food in the body. * Balanced diet.   \*Definition  \*Components of balanced diet (classes of food)   * Sources of food values.   Carbohydrates:  Vitamins  Proteins  **Deficiency disease etc.**   * Definition * Examples * Causes * Sign of symptoms of each disease. * Prevention. * Ways in which food gets contaminated, bad feeding habits. * Prevention of food contamination. * Prevention of simple dishes locally. | **Subject:**   * Define   \*Food  \*Feeding  \*Nutrition  \*Balanced diet  \*Defience disease   * State why we eat food?. * Give some sources of food. * Mention some of the components of balanced diet.   **Language**   * Pronounce, spell, write and read words and sentences correctly.   **Language competence**  The learner:-   * Pronounces the words correctly. * Spells the given words correctly. | -Guided discovery  -Group discussion.  -Think pair share. | - Note making.  - Collecting food sources of food values.  -Groping them according to food values.  -Drawing and painting different food stuffs. | -Appreciation.  -Care  -Love | * Real objects (food stuffs) | Comp. Science bk 4. Pg.  MK integrated scie pupils bk 4  Pg. |
|  |  | **HUMAN BODY** | **THE TEETH** | **TEETH**   * Sets of teeth. * Types of teeth and their uses. * The tooth structure. * Functions of the internal parts of the tooth. * Regions of the tooth. * Diseases and disorders of the teeth. * How to care for the teeth. | **Subject**  The learner:-   * Identifies sets of teeth. * Describes the different types of teeth and their functions. * Draws different types of teeth with correct labeling.   **Languages**   * Reads, writes, pronounces words and sentences correctly. | -Discussion.  -Question and answer.  -Group work.  Guided discovery. | * Matching types of teeth to diagrams. * Drawing and labeling teeth structures. * Practicing brushing of teeth. * Answering oral and written questions. | -Effective communication.  -Self awareness.  -Critical thinking.  -Problem solving.  -Decision making.  - Confidence  -Care  -Acceptance | -A chart showing different types of teeth. | Comprehensive scie Bk. 4 pg. 151 – 164.  Intergrated scie. Bk. 4 pg. 112 – 118.  Fountain scie. Bk. 4 pg 119 - 129 |
|  |  | **HUMAN BODY ORGAN** | **Major body organ**   * Definition - Organ. * Examples of major body organs.   \* Eyes  \* Brain  \* Ears  \* Stomach  \* Nose  \* Bladder  \* Heart  \* Lungs  \* Liver  \* Tongue.   * Structure showing location of each body organ. * Structure of each part and function. * Diseases and disorders. * Care for each body organ. | **Subject:**   * Identify different body organs. * Define: Organ. * State ways of caring for our body organs. * Draws and labels body organs.   Language:   * Reads, pronounces, spells and writes words correctly. * Answers simple comprehension questions correctly. | -Discussion  -Guided discovery.  -Question and answer.  -Demonstration. | * Singing a song. * Note making. * Drawing. * Answering both oral and written questions. | -Selfawareness  -Responsibility  Confidence  -Fluency.  -Effective communication  -Creative thinking  -Critical thinking. | - Chart showing  body organs. |  |
|  |  | **HUMAN HEALTH** | **SANITATION** | * **Definition**   - Its elements   * Importance of good sanitation. * Germs and diseases   - Definition  - Where they are found.  - Types of germs  - How they are spread.  - Dangers of germs.  - The germ cycle (4Fs).   * **Rotting**   - Definition  - Importance of rotting  - Causes of rotting.  - Dangers of rotting.   * Ways of protecting against germs and diseases in our environment. | **Subject**  The learner:-   * Identifies sanitation concerns. * Draws diagrams on transmission of germs (germ path). * Carries out activities of keeping the environment clean.   **Language**   * Spells, write and pronounce words correctly. | -Discussion  -Demonstration.  -Question and answer.  -Guided discovery. | -Drawing the germ path.  -Answering oral and written questions.  -Demonstrating way of keeping classroom clean. | -Self esteem.  Effective communication.  -Critical thinking.  -Problem solving.  -Care  -Love  -Respect. | * Brooms. * Dustbin * Water * Plates * Prepared chats. | Comp. scie BK. 4.  Integrated Scie. Bk.4  MK. Bk. 4 pupils scie. |

**SIR APOLLO KAGGWA SCHOOLS**

**SCIENCE LESSON NOTES FOR P.4 TERM II 2019**

**OUR FOOD**

Food is anything good to eat or drink

Feeding is the taking in of food.

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

**Uses of food to the body**

1. Food provides energy to the body.
2. Food keeps the body healthy.
3. Food builds the body.
4. Food provides warmth to the body.

**Why we eat food**

We eat food everyday for the following reasons 5Hs

* To satisfy Hunger
* To be healthy.
* Because it is a habit.
* Because of hospitality.
* Because of happiness.

**NB:** The above reasons are known as the 5Hs, i.e .

1. Hunger (because our stomachs are empty.
2. Health.(because we need to live)
3. Habit (it is time of the day when we normally go out).
4. Happiness. (because we enjoy eating certain foods)
5. Hospitality (because we have guests and its our custom to offer them food)

**Ways people get food**

* By growing it in the garden.
* By buying it from shops, markets, supermarkets etc.
* By fishing from lakes, swamps, rivers etc.
* By hunting.
* By gathering from forests and bushes.

**Places where people get food**

1. From shops
2. From the garden
3. From the supermarkets
4. From markets
5. From lakes, rivers swamps etc.
6. From forests

**BALANCED DIET**

Balanced diet is a meal containing all food values in their right amounts.

What makes up a balanced diet?

A balanced diet is made up of (3) three classes of food.

**Classes of food**

The three major classes of food include the 3Gs i.e.

* Go foods / Energy giving foods?
* Grow foods / Body building foods.
* Glow foods / Health giving foods / Protective foods

**Others include: the food values**.

* Fats and oils
* Proteins
* Carbohydrates
* Water and mineral salts
* Vitamins
* Roughages

**PROTEINS**

These are body building foods.

**Uses:**

* Proteins helps in making new body cells.
* Proteins help in replacement of worn out tissues

**Sources of proteins**

(a) **Animal proteins**

* Beef
* Chicken
* Fish
* Eggs
* Grasshoppers
* White ants
* Pork.

(b) **Plant proteins**

* Beans
* Soya beans
* Ground nuts
* Peas

**CARBOHYDRATES**

These are food values that give us energy

**Sources of carbohydrates**

1. Maize
2. Millet
3. Cassava
4. Rice
5. Sorghum
6. Sweet potatoes
7. Irish potatoes
8. Coco yams
9. Matooke
10. Sugar cane

**VITAMINS**

These are health giving foods

**Types of vitamins**

* Vitamin A
* Vitamin B1
* Vitamin B2
* Vitamin C
* Vitamin D

**Uses of vitamins**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Vitamin | Source | Importance | Deficiency disease | Sign / Symptoms |
| A | 1. Liver  * Cheese * Butter * Margarine * Milk * Eggs * Spinach * Carrots  1. Palm oil | 1. Increases resistance to diseases 2. For good night vision | * Poor night vision (Night blindness) | 1. Blurred objects 2. Poor eye sight 3. Reduced night vision |
| B1 | * Unpolished cercal. * Beans * Ground nuts * Green leafy vegetables * Meat * Yeast | * For mental health * For proper growth | * Beriberi | * Poor growth * Paralysis * Forgetfulness * Lack of appetite * Body weakness. |
| B2 | * Beans * Lean meat * Liver * Yeast * Kidney * groundnuts | * For mental growth. * For proper growth | * Pellagra | * Body weakness * Poor growth |
| C | * Oranges * Lemons * Guavas * Tomatoes * Mangoes * Pawpaw * Fresh green vegetables | * For strong skin membrane. | * Scurvy | * Bleeding of the GSM. * Poor healing of wounds. * Reduced resistance to diseases. * Poor growth of skin. |
| D. | * Butter * Milk * Cheese * Egg yolk * Liver * Fish liver oil | * For absorption of calcium. * For strong bones and teeth. | * Rickets | * Weak bones. |

**FATS AND OILS**

**Use:**

They use energy giving food so provide energy and heat.

**Sources of fats and oils**

* Milk
* Butter
* Cheese
* Egg yolk
* Ground nuts
* Margarine

**Note:** Fats are solids while oils are liquids at room temperature.

**WATER AND MINERAL SALTS**

**Use:**

They are health giving foods so keep us health.

**Types of Mineral salts**

* Iron
* Calcium
* Phosphorus
* Iodine
* Sodium
* Potassium
* Magnesium

**IRON**

**Use:**

For making red blood cells.

**Sources of iron**

* Meat
* Liver
* Calcium
* Milk
* millet
* Green vegetables e.g. spinach
* Beans

NB: Phosphorus, magnesium also strengthen bones and teeth.

**IODINE**

**Use:**

For proper functioning / working of the thyroid gland.

**Sources of iodine**

* Sea fish / sea foods
* Iodized salt.

**DEFICIENCY DISEASES**

Diseases caused by lack of certain food values in the body.

1. **Kwashiorkor**

(a) It is caused by lack of enough proteins in the diet.

(b) Signs of kwashiorkor

- Swollen belly

- Swollen moon face

- Swollen feet and hands.

- Skin rash.

- Brown hair.

**Prevention of Kwashiorkor**

- Eat foods rich in proteins.

2. **Marasmus**

(a) It is caused by lack of enough carbohydrates in the diet.

(b) Signs of marasmus

- Old man’s face

- Pot belly.

- Thin body

- Always hungry

- General body weakness.

**Prevention of marasmus**

* Eat foods rich in carbohydrates.

3. **Anemia A**

- It is caused by lack of enough iron in the diet.

- It is prevented by eating foods rich in iron like liver, eggs, cereals, kidney, etc.

**GOITRE**

- It is caused by lack of enough iodine in the diet.

- It is prevented by eating food rich in iodine like the sea foods and iodised salt.

**Signs of Goitre**

- Swelling in the neck.

**Reasons breast milk is the best food for a baby**

* It has all food values needed by the baby.
* It has anti bodies which protect a baby against diseases.
* Breast milk is clean.
* Breast milk is always ready for feeding.
* Breast milk is easily digested.

**FOOD HYGIENE**

Food hygiene is the keeping of food free from germs.

**Proper handling of food**

- Washing hands before preparing food.

- Wash hands before serving food.

- Wash fruits and vegetables before eating them.

- Prepare food in a clean place.

- Serve food in clean containers

**Importance of proper handling of food.**

* It prevents food contamination.
* It preserves food for future use.
* It protects the food from pests.

**Ways food gets contaminated**

* Serving food with dirty hands.
* Serving food in dirty utensils.
* By some disease vectors e.g. crockroaches and houseflies.
* Preparing food in dirty environment.
* By dust falling on covered food.

**Dangers of poor handling of food.**

* It spreads germs
* It causes the food to go bad.
* It may cause food poisoning.

**Good eating habits**

* Wash hands before eating food.
* Sit upright when eating food.
* Swallowing food after chewing it properly.
* Chewing food with mouth closed.
* Putting small lumps of food in the mouth at a time.

**Dangers of bad eating habits**

* Eating food with unwashed hands contaminates food and may lead to diarrhea.
* Bending while eating food interferes with movement of food in the alimentary canal.
* Swallowing food before chewing properly can lead to indigestion it can also lead to chocking.
* Taking when food is in the mouth leads to spitting food on other people near you.

**FOOD PRESERVATION**

Is the keeping of food for along time without getting / going bad.

**Ways of preserving food.**

* Sun drying e.g. cassava, beans.
* Salting e.g. meat.
* Smoking e.g. fish.
* Tinning / bottling / canning.
* Freezing e.g. milk.
* Refrigerating e.g. oranges, green vegetables, milk.
* Roasting e.g. meat.
* Boiling and heating.

**FOOD SECURITY**

This is when a family / community has enough food for eating all year round.

Food security can be achieved through.

* Growing
* Proper food storage
* Preservation of food.
* Practicing proper farming methods.

**Importance of food security**

* The family has enough food to eat throughout the year.
* It prevents deficiency diseases in the family.

**MAJOR BODY ORGANS**

* An organ is a group of tissues that perform the same function.
* A tissue is a group of body cells.
* A cell is the smallest unit of the body

**Examples of major body organs**

Eyes Brain Lungs Tongue

Ears Stomach Liver

Nose Heart Bladder

* Structure / diagram showing location of the major organs.
* Structure of each organ, function, diseases and disorders, care.

1. **Eyes:**

* Eyes are found on the head.
* They are protected by the eye sockets in the skull.
* People have a pair of eyes.

Function: Eyes are used for seeing / sight / vision.

**Diseases of eyes.**

1. Trachoma
2. River blindness
3. Conjunctivitis (Pink eye / red eyes)
4. Night blindness.
5. Blindness (This is a disorder)

**Care for the eyes**

* Wash eyes with clean water and soap regularly.
* Avoid looking at bright light directly.
* Do not strain your eyes by reading in dim light.
* Do not hold book too close or far when reading.
* Visit eye clinic for regular check up and tests. - (Oculist optician)

2. **Ears**

* Ears are found on the head.
* People have two ears on the head.
* Ears are sense organs for hearing.
* The outer ear (pinna) is used for collecting sound waves.
* The ear also helps in body balance.

**Structure of the ear**

**NB:** There is wax in the auditory canal to trap dust and other foreign bodies.

**Disorders of the ear**

**-** Partial deafness

- Permanent deafness

- Foreign bodies (these prevent sound waves from reaching the ear drum).

- Rapture (tear) of the ear drum

**Care for ears**

- Wash the ears daily and keep them dry.

- Do not push objects into the ears.

- Do not use sharp objects for cleaning your ears.

- Do not direct your ear to loud sound.

3. **The Nose**

- It is located at the front of the face.

- It has two nostrils used for taking air into and out of the body (lungs).

- The nose is the sense organ for smelling.

The nose has hairs (cilia) and that traps any foreign bodies like dust, dirt. Or Cilia filters air before it goes to the lungs.

1. **The Brain**

- This is the most important organ of the body.

- The brain is found in the head.

- It is protected by the skull.

**Uses of the brain**

1. For thinking.
2. For recall / remembering.
3. For body balance.
4. For storing information.
5. For learning / reasoning.

**Diseases / Disorders**

Epilepsy, cerebral malaria, meningitis etc.

**Care for the brain**

1. Having enough rest.
2. Avoid drugs like alcohol, marihuana, tobacco.
3. Eat a balanced diet.
4. Having physical exercises to refresh the brain daily.
5. Early treatment of malaria.
6. **The stomach**

- It is located in the abdomen.

* The stomach is part of the digestive system.
* It is bag like and elastic.

**Uses of the stomach**

- The stomach stores food for sometime.

- It digests food (proteins)

- It produces an acid (HCI) which kills germs in the food eaten.

**Diseases of the stomach**

Peptic ulcers, Diarrhoea, Dysentery, Cholera, etc

**Disorders of the stomach**

Constipation, indigestion, vomiting, Diarrhea, etc

**Care for the stomach**

- Avoid drinking alcohol as it causes wounds on the stomach lining.

- Drink a lot of water to prevent constipation.

- Eat a balanced diet.

- Avoid smoking as this makes ulcers worse.

- Avoid prolonged hunger as it causes ulcers.

- Doing physical exercises.

1. **Lungs**

**-** Lungs are found in the chest.

**-** They are protected by the rib cage.

- People have two lungs.

**Uses of lungs**

- Lungs are used for breathing.

- They break down food to release energy.

- They pass out carbondioxide and excess water vapour.

**Diseases of lungs**

Tuberculosis, Diphtheria, whooping cough (pertussis), Pneumonia, influenza (flue), Bronchitis, lungcancer, Emphesema, Asthma, etc.

**Care for the lungs**

- Avoid tobacco smoking.

- Avoid dusty places.

- Avoid crowded places.

- Take infants for immunization against TB, whooping cough and diphtheria.

- Do regular physical exercises.

- Isolate people with tuberculosis.

1. **The liver**

It is located in the upper part of the abdomen.

**Structure of the liver.**

The gall bladder stores bile.

**Uses of the liver**

- The liver regulates body sugar.

- It produces bile.

- It stores iron, glycogen and vitamin A and D.

- It removes poisonous substances from blood.

**Diseases of the liver**

- Hepatitis, liver cancer, cirrhosis (liver disease)

**Care for the liver**

- Avoid drinking too much alcohol (it causes cirrhosis).

- Have a balanced diet.

- Boil water for drinking to avoid hepatitis.

1. **The Heart**

- The heart is found in the chest cavity.

- It is protected from physical damage by the ribcage.

- People have one heart.

**Use:**

The heart pumps blood to all parts of the body.

**Structure of the heart**

The heart is made up of a tough muscle called **Cardiac muscle.**

**Diseases of the heart**

- Hypertension (High blood pressure)

- Heart attack (coronary thrombosis)

- Low blood pressure

- Blood cancer (Leukaemia) etc.

**Care for the heart**

- Doing regular physical exercises.

- Eating a balanced diet.

- Avoid smoking to avoid blood clots in the coronary artery.

1. **Kidneys and the urinary bladder**

The kidneys and urinary bladder are found in the lower abdomen

**Uses**

1. **Kidney**

* It filters blood (it removes urea excess water and mineral salts from blood.)

1. **Urinary bladder**

* It stores urine before it is passed out.

1. **Ureter**

* Carries urine from kidneys to the urinary bladder.

1. **Urethra**

* Passes urine out of the urinary bladder

**Care for the kidney and urinary bladder**

**-** Avoid drinking alcohol.

- Do not hold urine for a long time in the bladder.

- Drink plenty of water.

**Diseases of the kidney / urinary bladder.**

- Kidney failure, kidney stoves, Bilharzia

1. **The Tongue**

- It is found in the mouth.

**Uses**

- It is a sense organ for tasting.

- It rolls food into a bolus and pushes it to the gullet for swallowing.

**Disorders of the tongue**

Burns, cuts, blisters.

**Care for the tongue**

- Do not eat hot food. This may damage the taste buds.

- Do not put sharp objects in the mouth.

1. **The skin**

This is the largest organ of the body found all of the outside.

**Uses of the skin**

- It removes sweat from the body.

- It regulates body temperature (i.e. through sweating and growth of goose pimples when it is hot and cold respectively).

- The skin prevents germs from entering our bodies.

- It protects our muscles from damage.

**Diseases and disorders of the skin.**

|  |  |
| --- | --- |
| Diseases | Disorders |
| Leprosy  Ringworm  Measles  Scabies  Boils | Cuts  Blisters  Skin rash  Pimples (acne)  Dryness / cracks |

**Care for the skin.**

- Bathing regularly using clean water and soap.

- Apply Vaseline to keep the skin soft.

- Do not share under wears, towels, combs with infected people.

**TOPICAL REVISION QUESTIONS – BODY ORGANS**

1. Name any four major organs in our bodies.

2. Identify the sense organs for;-

(a) Hearing

(b) Tasting

(c) Sight / Vision / Seeing

(d) Touch / Feeling

(e) Smelling.

3. Nose is to man as ……………………….. is to cockroaches.

4. Write any one cause of deafness.

5. How useful are the hairs found in the nose?

6. Study the diagram of the ear below and answer the questions about it.

1. Name part x on the human ear.
2. How useful is the wax found in part S?

7. Mention one disease which attacks our eyes.

8. What good health practice should be carried every morning to keep our eyes clean?

9. Mention one way of keeping the skin healthy.

10. Which organ is called the “pump of the body”.

11. In which part of the body is the brain protected?

12. State two functions of the brain.

13. Why is it important to take a rest?

14. How many pairs of lungs does man have?

15. Name part S on the diagram of lungs below:-

16. Mention one immunisable disease which attacks the lungs.

17. Why are physical exercises good to our bodies?

18. Which body organ produces bile?

19. Draw a diagram showing the stomach.

20. How can we keep the stomach in proper health?

21. Which body organ removes wastes from blood?

22. Why is it bad to hold urine in the urinary bladder for a long time?

23. Name one organ found in the

(a) Head

(b) Chest cavity.

(c) Abdomen

**HUMAN TEETH**

A tooth is a hard bone like structure in vertebrates used for breaking food into smaller pieces.

**Sets of Teeth**

1. Milk teeth (Deciduous teeth)
2. Permanent teeth

**Milk teeth**

They are 20 in number and the first to grow in young children. Milk teeth start growing from the age of 6 months and at the age of around 7 years.

These teeth begin to fall ot and are replaced by the permanent teeth.

**Permanent teeth**

This is the second and final set of teeth in the mammals growth.

A person starts developing permanent teeth at 13 years.

An adult normal person has 32 permanent teeth consisting of incisors, canines, premolars and molars.

**Types of teeth**

- Incisors

- Canines

- Premolars

- Molars.

**Incisors:**

They are used for cutting and biting food.

They are chisel shaped.

**Diagram of an incisor.**

**Canines**

They are used for tearing food. They are more developed in dogs cats, leopards, lions etc.

Canines are sharp and pointed.

**Diagram of a canine**

**Premolars**  
Premolars are used for grinding, chewing and crushing food.

They are broad, blunt and flat ridged.

**Diagram of a premolar.**

**Molars**

Molars are used for grinding chewing and crushing food.

They are broad, blunt and flat ridged.

**Diagram of a Molar:**

**Dental formula**

Is the arrangement of teeth in the jaws.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Incisors | Canines | Premolars | Total | Molars |
| Lower Jaw | 4 | 2 | 4 | 16 | 6 |
| Upper Jaw | 4 | 2 | 4 | 16 | 6 |
| Total | 8 | 4 | 8 | 32 | 12 |

**REGIONS OF A TOOTH**

**Parts of a tooth**

- Enamel

- Dentine

- Pulp cavity

- Blood capillaries / vessels

- Gum

- Cement

- Jaw

**Functions of parts of the tooth**

**Enamel:**

* The hardest part of the tooth.
* It is the hardest substance in the body made of calcium of phosphorus.
* Enamel prevents wear and tear of the tooth.

**Dentine:**

* It keeps replacing the enamel as it may wear off due to friction.

**Pulp cavity**

* It is the most sensitive part of the tooth.
* It contains blood vessels and sensory nerves.

**Blood vessels**

They carry digested food and oxygen to the tooth.

**Sensory nerves**

They are sensitive to heat, pain and cold.

The tooth begins painting when bacteria destroys the pulp cavity.

**Cement**

- It fixes the tooth in position

- It protects the tooth.

**Gum**

* Gives extra support to the tooth in the four bone.

Jaw bone

- Holds the tooth in one position.

- Protects the tooth

**Diseases of the tooth**

Tooth decay (Dental caries)

It is caused by bacteria.

Bacteria acts on sugar and starch remains on the teeth producing lactic acid that wears and tears the enamel and makes a hole in the dentine and pulp cavity.

Pain begins when the bacteria destroys the pulp cavity.

**NOTE**: Dental amalgam (cement) can e used to fill the holes made on the teeth.

**Periodontal Gum Disease**

Cracked teeth

Improper growth of teeth

Broken teeth

Cancer

Burning tongue

Bad breaths.

**Dental Hygiene**

Is the way of keeping our teeth free from germs.

**Care for our teeth (Dental Hygiene)**

- Brush the teeth after every meal.

- Avoid drinking very hot and cold things.

- Avoid eating too much sweets.

- Rinse your mouth with water and salt after every meal.

- Eat plenty of fruits and vegetables.

- Visit a dentist regularly for dental check ups.

- Eat a balanced diet.

**Things used in caring for our teeth**

* Tooth brush - Clean water
* Tooth paste - Small sticks
* Strings etc.

**How to brush our teeth**

* Brushing the teeth should be up and down movement of the tooth brush but not side ways.

Reasons why we brush our teeth

* Prevent tooth decay
* Prevent bad breath.

**SANITATION**

Sanitation is the general cleanliness of our environment.

Sanitation is a way of keeping our environment clean.

**Elements of sanitation / activities under sanitation**

* Sweeping the compound, houses etc.
* Mopping houses, classrooms etc.
* Slashing bushes around our homes, school, road sides, water sources.
* Picking and burning rubbish.
* Proper disposal of garbage and rubbish.
* Draining stagnant water around our homes and schools.
* Dusting tables and chairs.
* Removing cobwebs from the kitchen latrines and houses.
* Digging water channels along the roads, in the schools and home compounds.

**Importance of sanitation**

* Prevents the spread of germs.
* Promotes good health in community.

**Items used in keeping proper sanitation**

* Brooms
* Rake
* Rag / mop
* Water
* Soap
* Slasher
* Drier
* Scrubber
* Rubbish pit
* Spade
* Bins
* etc

**Germs and diseases**

A germ is a living organism that cause diseases.

**Types of germs**

These include;

Virus

Bacteria

Protozoa

Fungi

**Where germs are found**

**Germs are found in;**

* Faeces and Urine
* Contaminated water
* Soil
* Air
* On dirty clothes
* On dirty beddings
* Under dirty finger nails.

**How germs enter our bodies**

* Through eating contaminated food.
* Through the nose when we breathe in.
* Through open wounds and cuts
* Through skin contact with infected persons.
* Through sharing clothes with an infected person.
* Through vectors.

**THE GERM PATH (4FS)**

These stands for

1. Faeces
2. Flies
3. Food
4. Fingers

**Control of the spreading of germs**

* Boil water for drinking.
* Wash hands before eating food.
* Wash hands after visiting the latrine or toilet.
* Destroy the breeding places of vectors.
* Kill the vectors by spraying.
* Cover food.
* Have proper disposal of garbage.
* Have children immunized.

**ROTTING / DECAY**

* Rotting is the breakdown of organic matter by bacteria.
* It requires warmth, darkness and moisture.

**Importance of rotting / decay**

* Rotting produces humus from dead organic matter.
* It destroys garbage heaps.
* It destroys faeces in latrines and sewage systems.

**Dangers of rotting**

* Rotting produces a bad smell.
* Rotting is a source of germs.
* Rotting causes wounds to be septic.

**Common diseases caused by germs**

|  |  |
| --- | --- |
| **Diseases** | **Causative germ** |
| Trachoma | Virus |
| Red eyes | Bacteria |
| Cholera | Bacteria |
| Typhoid | Bacteria |
| Dysentery | Bacteria / amaoba |
| Diarrhoea | Bacteria / virus |
| Ring worm | Fungus |
| Chicken pox | Virus |
| Diphtheria | Bacteria |
| Pneumonia | Bacteria / virus |
| Tetanus | Bacteria |
| Measles | Virus |
| Polio | Virus |
| Whooping cough (Pertussis) | Bacteria |
| Scabies | Itch mites |
| Malaria | Plasmodium (Protozoa) |
| Rabies | Virus |
| Typhus fever | Ricketsia |

**TOPICAL REVISION QUESTIONS**

1. What do you understand by term Sanitation?

2. Mention any five activities involved under sanitation.

3. Suggest any two importances of sanitation to a community.

4. Give any four items used in keeping proper sanitation.

5. What is a germ?

6. Outline any four types of teeth.

7. How can germs spread from one person to another? (Give three)

8. Suggest any three places where we can find germs.

9. Write 4Fs in their correct order.

10. Mention any two ways of controlling the spread of germs in our environment.

11. Define rotting?

12. Give any two importances of rotting to our environment.

13. Mention two dangers of rotting to our environment.

14. Which type of germ causes the following diseases

(a) Trachoma (b) Cholera (c) Diphtheria (d) Malaria (e) Polio

**SIR APOLLO KAGGWA SCHOOLS**

**SCHEME OF WORK FOR P.4 SCIENCE TERM II 2012**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WK** | **PD** | **THEME** | **SUB-THEME** | **CONTENT** | **COMPETENCES** | **METHODS** | **ACTIVITY** | **LIFE SKILLS AND VALUES** | **INSTRUCTIONAL MATERIALS** | **REF** |
| **1** | **1** | **HUMAN HEALTH** | **VECTORS AND DISEASES** | **Common Vectors**   * Definition of vectors * Examples of common vectors * Cockroaches * Ticks * Bedbugs * House flies * Mites * Rats * Lice * Mosquitoes * Tsetse flies   \* Life cycle of vectors  \* **Diseases spread by each**  **vector**   * Body structure * Their habitat * Their feeding habits * Their life cycles * How they protect them selves from enemies   **How vectors spread diseases.**   * Bites * Dirty body * Dirty environment   **Prevention and control**   * Proper hygiene * Covering food. * Spraying * Biological control. * Sleeping under a treated mosquito net. | The learners:-   * Defines vectors * Identifies some common disease vectors * Describes characteristics of some disease vectors. | -Guided discovery  -Question and answer  Discussion. | - Naming  - Drawing  - Answering questions | - Awareness  - Care  Responsibility  -Self awareness  -Decision making | * A chart with some vectors. |  |
|  |  | **WORLD**  **OF**  **LIVING**  **THINGS** | **Animal life (Rabbits)** | **Definition of terms**   * Rabbitary * Rabbit keeping   **External parts of a rabbit**  **Breeds of rabbits**   * Local * - Exotic * Examples of exotic breeds.   Importance / uses of rabbits.   * Advantages of keeping rabbits over other animals. * Housing in rabbits. * Management practices. * Diseases of rabbits and their control. * Keeping farm records. | **Subject**   * Defines new terms. * Names external parts of a rabbit. * Names breeds of rabbits. * Lists examples of exotic breeds. * Explains the uses of rabbits * Describes the habitat for rabbits * Demonstrates skills in keeping rabbits. * Names diseases of rabbits and their control. | Guided discovery  Discussion  Demonstration  Question and answer.  Group work field trip. | * Drawing. * Note taking * Answering oral and written questions.   . | -Effective communication.  -Critical thinking.  -Creative thinking.  -Decision making  -Problem solving.  -Appreciation  - Patience  -Care  -Fluency | -Prepared chart |  |
|  |  | **HUMAN HEALTH** | **Accidents poisoning and first Aid** | **Accidents**   * Definition * Types of accidents * Causes of accidents * Prevention of accidents   **First Aid**   * Definition * Reasons for giving first aid. * Responsibilities of a first aider. * Qualities of a first aider. * First aid kit (box) * How to use a first aid kit. * Components of the first and kit and uses. * Places where we find first aid box | The learner:-   * Names common accidents and poisoning at home, on the way to, from and at school. * States causes of accidents and poisoning. * Demonstrates how to take care of one who has taken poison.   **Language**   * Talks about common accidents. * Reads and writes words, sentences and stories about accidents. | -Guided discussion  -Group work.  Demonstration. | * Collecting first aid items. * Making a first aid box. * Demonstrating how to give first aid. | -Critical thinking.  -Problem solving  -Coping with stress.  -Care  Sympathy  -Responsibility | -Real first aid materials.  - Chart showing  common  accidents. |  |
|  |  | **HUMAN HEALTH** | **Road traffic accidents, sprains, strains, bruises**  **wounds** | * Definition of road accidents. * Causes of road traffic accidents. * How to cross the road e.g. from zebra crossing. * How to prevent road traffic accidents.   Injuries / Fractures  **Types of injuries.**   * Fractures (types and their first aid) * Sprains and strains (their first aid). * Dis location and its first aid. * Bruises and their first aid. * Blisters and their first aid. * Wounds and their first aid. |  |  |  |  |  |  |
|  |  | **Accidents, poisoning and First Aid** | * Definition of * Poison * Poisoning * Common poisons in our homes. * Causes of poisoning. * Signs of poisoning * First aid * How to prevent poisoning. |  |  |  |  |  |  |
|  |  | **COMMUNICABLE DISEASES AND WORM INFESTATION** | **Diarrheal diseases** | * Definition of Diarrhoea. * Examples of diarrhoeal diseases. * Causes * Prevention. * Dehydration (Definition) * Its causes * Signs * (Use of ORS) * Rehydration (Definition) * Preparation of ORS and SSS. | * Identifies diarrheal diseases. * Describes the spread of the above diseases. * Demonstrates the preparation of ORS and SSS. * Draw the structure of a tape worm. * Tell how tape worms enter our bodies. | -Demonstration  -Discussion  -Guided discovery  -Question and answer | -Note making  -Preparing ORS and SSS | -Critical thinking  -Problem solving  -Decision making  -Self awareness | * Water * Sugar * Salt * Spoons * Chart |  |
|  |  |  | **Intestinal worms** | Definition:   * Intestinal worms * Parasites * Examples of intestinal worm  1. Tape worms   - Structure  - How it spreads  - How it feeds  - What it feeds on  - Effect on body prevention  and control   1. Hook worms  * Structure * How they enter into the body. * How they feed. * Prevention and control.  1. Round worms  * Structure. * How they enter into the body. * How they feed. * Prevention and control.  1. Thread worms  * Structure * How they enter into the body. * How they feed. * Prevention and control.  1. Pin worms  * Their structure * Feeding habits * How they enter the body. * Prevention and control  1. Whip worms and guinea worms  * Structure * How they enter our bodies. * Their feeding habits * Prevention and control | The learner:-   * Describes the habits of pin worms. * Describes the habits of whip worms and guinea worms. |  |  |  |  |  |

**SIR APOLLO KAGGWA SCHOOLS**

**SCIENCE LESSON NOTES FOR P.4 TERM III 2018**

**COMMUNICABLE INTESTINAL DISEASES, WORM AND INFECTIONS**

**DIARRHOEAL DISEASES**

Diarrhea refers to the passing out of watery stool many times a day (frequently).

Examples of diarrhoeal diseases include:

* Cholera
* Typhoid
* Diarrhoea
* Dysentery

**Causes of diarrhea**

* Diarrhoea is caused by either bacteria, virus or certain parasites like worms.
* Germs enter our bodies when we drink or eat contaminated water and food.
* Most diarrhoeal diseases are spread by 4Fs (Faeces, Flies Food and Fingers.)

**DEHYDRATION**

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

**Causes of dehydration**

There are two causes of dehydration namely:-

* Diarrhoea and vomiting.
* Diarrhoea and vomiting can lead to loss of water and important salts of sodium and potassium.

**Signs of dehydration**

* Sunken eyes
* Dry lips
* Sunken soft spot on baby’s head (fontanella)
* Little or no urine is passed out (dark yellow in colour
* A pinch of a skin takes long to go back to its shape.
* The person is sleepy and easily gets annoyed (irritable)

**Prevention of diarrhea**

* Left over food should be covered.
* You should wash hands before eating and after visiting the toilet.
* Boil drinking water.
* Proper disposal of feaces in toilets or pit latrines.
* Wash fruits and vegetables before eating them.
* Destroy breeding places for houseflies.
* Dump house hold refuse (rubbish) in dust bins, rubbish pit and burn them.
* Etc.

**Treatment for diarrhea and dehydration.**

* Give extra fluids like oral rehydration salts, fruit juices etc.
* Feeding on solid foods like boiled rice, cassava, posh etc.

**How to mix Oral rehydration salts**

1. Wash your hands.

2. Measure a litre of boiled cooled water in a clean container.

3. Open the packet of oral rehydration salts and put it in the one litre of water.

4. Mix the oral rehydration salts and water very well.

5. Taste the solution. It should never taste very salty. Do not boil the solution.

6. Give the drink to the person with diarrhea.

NOTE: A small child should drink atleast one quarter of tumpeco after every stool while an adult should take atleast one half of a tumpeco after each steal.

**How to mix salt sugar solution**

1. Wash your hands.

2. Measure one litre of drinking boiled water into a clean container.

3. Measure one leveled teaspoon of salt and eight leveled teaspoons of sugar in water.

4. Mix the salt and sugar into water well to make a solution.

5. Taste the solution it should never taste salty.

6. Give the drink to a person with diarrhea as already mention.

**COMMUNICABLE INTESTINAL DISEASES WORMS AND INFECTION**

**INTESTINAL WORMS**

Worms are parasites which live inside our bodies and feed on either blood or digested food.

A parasite is a living organism which lives and feed on another living organism for survival.

Examples of intestinal worms include:-

* Hook worms - Guinea worms
* Round worms - Fluke worms
* Tape worms - Thread worms
* Pin worms
* Whip warms

**HOOK WORMS**

* They are about 8 – 13mm in length
* They live in small intestines where they hook themselves to the walls of the intestines with their hooked mouth and feed on blood.
* The female lays eggs which pass out in stool or feaces.
* The eggs hatch out in water or damp soil and enter through bare feed especially around the ankles.
* They penetrate the skin and enter the blood streams where blood carries them to the lungs.
* From lungs they are coughed to the gullet and swallowed to the stomach and then to the small intestines where they stay.
* Hook worms are dangerous because when they become many in number they suck blood and cause anemia (Hook worm anemia)

**Structure of hook worms**

**Signs and symptoms**

* Abdominal discomfort
* Loss of weight
* Body becomes tired and weak.
* Diarrhoea
* The tongue, gums, eyelids and finger nail becomes pale.

**Prevention**

* Wear shoes if possible especially in wet places.
* Always use latrines and afterwards wash your hands with water and soap.

**Treatment**

* Go to be examined by doctor in the hospital.
* Eat meat, fish, eggs and dark green leafy vegetables.

**ROUND WORMS**

* They are about 15 – 35cm long.
* They live in the small intestines and feed on digested.
* Children can get round worms in contaminated food dirt around houses, in gardens and get round worms eggs in the finger nails.
* Round worms enter our bodies through eating un washed fruits and raw vegetables where the eggs may be attached.
* When one eats un washed fruits and vegetables the eggs get into mouth, stomach and into the intestines and remain feeding or digested food.
* When they are many in number, they block the intestines and cause constipation or diarrhea

**Structure of round worms**

**Signs and symptoms**

* Abdominal pain.
* Fever, diarrhea and restlessness.
* Grinding of the teeth in children.

**Prevention**

* Wash your hands before eating anything.
* Do not play in dirty places.
* Do not share plates because others may not have washed their hands.
* Wash fruits and vegetables before eating.
* Wash hands after visiting the latrine.
* Defecate in latrines only.
* Cut finger nails to avoid keeping round worm eggs.

**Treatment**

* Seek medical advise immediately you think you have round worms.

**TAPE WORMS**

* They grow to more than 30ft or 10m long.
* They enter our bodies through eating half cooked beef or pork and live in our small intestines.
* They hook themselves on the walls of the intestines and suck digested food.
* When mature, the tape worms shed their segments containing thousands of mature eggs which are passed through feaces or stool.
* The mature eggs can stay up to one year on grass until either a cow or pig eats the grass with the eggs.
* When the eggs are swallowed by either pig or cow, they enter their bodies into their blood and go for another stage of development in the mucus.

**Structure**

**Signs and symptoms**

* The person becomes weak.
* A person passes out stool with tapeworm mature eggs segments.
* The person passes out watery diarrhea.

**Prevention and treatment**

* Do not eat half cooked meat.
* Go for treatment as soon as possible.

**THREAD WORMS**

* They resemble hook worms but they are smaller than the hook worms.
* They enter our bodies through bare feet and travel by blood to the lungs where they are coughed to the small intestines.
* The adults lay eggs and hatch out while still in the intestines.
* The larva comes out with stool and contaminate the soil from where they again, enter a new host through the bare feet.

**Structure of thread worms**

**Signs and symptom**

1. The person becomes weak.
2. The person passes out stool with larvae.
3. There is coughing like someone suffering from bronchitis a disease of the lungs.
4. Watery diarrhea.

**Treatment and prevention**

* Wear shoes whenever possible especially in wet places.
* Always use latrines or toilets.
* Take the person for treatment.

**PIN WORMS**

* These live in the larva intestines especially in the rectum.
* The female crawls out at night through the anus and lays its eggs around the skin.
* This cause itching around the anus especially at night.
* They are white in colour and small of about 8 – 13mm long.
* When the infected person scratches the itching part and later handles food staff or puts fingers in the mouth, the eggs become swalled therefore reinfecting him / herself.
* If the eggs hatch out around the anus. The worms crawls back into the large intestines.
* However, if the infected person shares edible with someone without washing hands, the eggs are spread and the next person will swallow the eggs and become infected.
* The eggs can be contaminated beddings, under wears, knickers and they can be spread through this way.

**Structure**

**Signs and symptoms**

* Abdominal discomfort.
* Lack of sleep
* Restlessness.

**Prevention and control**

* Seek treatment from a qualified health worker.
* Have an infected person wear tight fitting shorts to prevent scratching of the anus.
* Change under clothing and bedding daily.
* Scrub toilet seats with soap and water everyday.
* Have family members treated.
* Wash hands with soap and clean water after the toilet.
* Cut finger nails short and kept clear.

**WHIP WORMS**

* They are about 35 to 50mm in length with the head smaller than the tail. This is why they are called whip worms because they look like whips worms because they hook like whips.
* They live in the large intestines without causing any symptom.
* They produce large numbers of eggs.
* If great in number, they cause diarrhea and intestinal discomfort.
* The eggs pass out with stool and hatch out in the soil.
* They enter our bodies in the same way as the round worms’

**Structure**

**GUINEA WORMS**

* These worms are common in Northern Uganda especially Gulu, Kitgum, Moroto, Kotido, districts.
* They lay their eggs when the infected person steps in water sources e.g. Rivers and wells.
* The eggs remain in water until some one else comes to collect water for home use.
* If the person drinks contaminated water, he drinks the guinea worm eggs.
* When eggs hatch into larvae in the small intestines they penetrate through the walls of the intestines to reach the blood circulatory system.
* They then go to the lower parts of the legs and sometimes the scrotum.
* Here they grow, swell and latter bursts causing a wound and adult guinea worm comes out half way ready to lay eggs.
* If the new infected person steps in water source the worm lays very many eggs.

**SIGN**

* Swelling and bursting of the infected part on the leg.
* A wound which may not heal easily develops
* Adult guinea worm hungs outside the infected part.

**Prevention**

* No treatment so far.
* Infected person should not step in water sources.
* Filter and boil drinking water.
* Drink water from boreholes only.
* Pulling out the adult guinea worm by a skilled person.

**BILHARZIA BLOOK FLUKES**

* These are small worms of about 1 – 2cm long.
* They live in the veins around either the bladder, large intestines or small intestines.
* They are also called schistosoma.

**General ways of preventing the spread of worms.**

* Filter and boil drinking water.
* Do not play in dirty water.
* Proper cooking of meat so that no red parts are left.
* Wash fruits and vegetables.
* Wear shoes whenever possible especially in wet places.
* Keep your finger nails short and clean.
* Always use latrines not bushes and water sources for urinating and dropping faeces.
* Etc.

**TOPICAL REVISION QUESTIONS**

1. Briefly explain the meaning of diarrhea.

2. Mention any four examples of diarrhoeal diseases.

3. What is dehydration.

4. Suggest any two causes of dehydration.

5. Mention two signs and symptoms of a dehydration person.

6. Give two ways of preventing diarrhoeal diseases.

7. List down the steps taken when mixing SSS.

8. What is meant by:-

(i) Intestinal worms

(ii) Parasite

9. Give four examples of intestinal worms.

10. Why are hook worms and whip worms referred or called so?

11. Mention any two intestinal worms that live in

(a) Small intestines

(b) Large intestines

12. How can one get the following worms?

(a) Hook worms

(b) Round worms

(c) Tape worms

13. Suggest any two signs and symptoms of intestinal worms.

14. Why are we advised to wear shoes or sandals when going in a latrine?

15. Identify the worms below

(a) (b) (c)

**VECTORS AND DISEASES**

**Diseases**

A disease is an illness or disorder caused by an infection. Diseases are divided into two types namely:-

1. **Communicable or infectious or transmissible diseases**

These are diseases that can be spread from one person to another.

**Note**: they are caused by a germ

Examples include:-

* Malaria
* HIV / AIDS
* Trachoma
* Cholera
* Diarrhoea

2. Non – communicable or non – infectious or non transmisable diseases.

These are diseases that cannot be passed from one person to another.

They include:-

- Nutritional deficiency diseases e.g. Kwashiorkor, marasmus.

- Sickle cell anaemia (inherited disease(

- Cancer like skin cancer, blood cancer, breast cancer, etc.

**VECTORS**

* Vectors are living organisms that spread disease germs.
* Germs are living organisms that cause diseases.

**Examples of common vectors**

* House flies - Ticks
* Tsetse flies - Lice
* Cockroaches - Mad dogs
* Mosquitoes - Mites
* Fleas - Water snails
* Black fly - Bed bugs

**Life cycle of vectors**

These are two types of life cycles namely

1. Complete metamorphosis: This is the life cycle with four stages of development / growth. These stages are eggs. Larva, pupa and adult.

**Examples of vectors which undergo complete metamorphosis**

- House flies

- Mosquitoes

- Black flies

2. Incomplete metamorphosis: This is the life cycle with three stages of growth. These stages are eggs, nymph and adult.

**Examples of vectors which undergo incomplete metamorphosis**

- Cockroaches

- Fleas

- Bed bugs

**The life cycle of a housefly.**

**Structure of a housefly**

**Diseases spread by a housefly**

**1. Dysentery**

These are two types of dysentery namely:-

* Amoebic dysentery (caused by amoeba)
* Bacillary (by bacteria)

Dysentery is caused by the following germs:

1. Bacteria (shigella)
2. Protozoa (entamoeba)

**How is dysentery spread**

* By drinking contaminated water.
* By flies falling on our food.
* By eating contaminated food.

**Signs and symptoms of dysentery**

* Severe diarrhea stained with blood.
* Loss of appetite.
* Dehydration

**How dysentery is prevented**

* Use toilets or latrines all the time.
* Keep toilets or latrines clean.
* Wash hands before touching or eating any food.
* Wash fruits and vegetables before eating them.
* Destroy all bleeding places of house flies to stop them from multiplying

2. **Cholera**

- It is a very infectious disease that can kill in a very short time (6 – 24hrs)

- It is caused by the vibro cholera bacteria.

**Signs and symptoms of cholera**

* + Serious diarrhea
  + Vomiting
  + Body weakness
  + Dehydration

**How to control and prevent cholera**

* Use latrines / toilets daily.
* Cover left over food to avoid flies.
* Wash hands with soap and water to remove germs.
* Wash fruits and vegetables before eating them.
* Boil water before drinking it.

3. **Typhoid**

Typhoid fever is caused by a bacteria called salmonella typhi.

**How typhoid is spread**

* By drinking contaminated water.
* By flies falling on our food.

**Signs and symptoms of typhoid**

* Persistent fever with headache.
* Increasing body pain and diarrhea.
* Abdominal pain.

**How to prevent and control typhoid**

* Cover all foods and drinks.
* Use toilets / latrines daily.
* Drink clean boiled water.
* Observe good food hygiene.
* Wash hands with clean water and soap before eating food.
* Wash hands with clean water and soap after latrine / toilet.

4. **Trachoma**

* It is a highly contagious / infectious disease which affects the eyes.
* It is caused by a virus called Chlamydia.

**How is trachoma spread**

* Sharing of the same basin of water with an infected person.
* Shaking hands with another infected person and then transfer the hands to the eyes.
* Sharing of towels and handkerchiefs with an infected person.

**Signs and symptoms of trachoma**

* Redness and itching of the eyes.
* Swelling of the eye lids.
* Pain while looking at light.
* Watery discharge from the eye lids.

**Prevention and control of trachoma**

* Avoid sharing basins, towels and handkerchiefs with an infected person.
* Avoid shaking hands with an infected person.
* Get treatment as soon as possible because trachoma can make one blind.

1. **Diarrhea**

* It is caused by either bacteria, virus or worms.
* These germs enter our bodies when we eat or drink contaminated water and food.
* Most diarrhoeal disease are spread by the 4Fs i.e.

Faeces Flies Food Fingers in that order.

**MOSQUITOES**

There are three types of mosquitoes namely:-

1. The anopheles mosquito.
2. Culex mosquito.
3. Aedes or Tiger Mosquito.

**Life cycle / History of an anopheles mosquito**

**Life history of an aedes / Tiger and culex Mosquito**

1. The mosquito lays its eggs in stagnant water.
2. The eggs hatch into Larva, pupa, adult.
3. The larva stage of a mosquito is called a wriggler.

**Note:**

1. A mosquito goes through a complete metamorphosis.

2. Mosquitoes have a sucking mouth part called a proboscis which they use to feed.

**Illustration**

**Habitat of Mosquitoes**

Mosquitoes lay their eggs in stagnant water or they breed in stagnant water.

**Types of Mosquitoes**

1. **The anopheles mosquito**

This mosquito spreads a germ called plasmodia (ium). This germ (Plasmodium) is spread by a female anopheles mosquito which cause Malaria.

A male anopheles mosquito doesn’t bite human beings. It instead feeds on nectar of flowers and juices of plants.

2. **Culex Mosquito**

* This mosquito spreads a worm called **filarial** which causes **elephantiasis.**
* Elephantiasis makes legs to grow big and look like those of elephants hence the name elephantiasis.
* The female culex mosquito feeds on blood before it lays eggs in stagnant water.

3. **Aedes / Tiger mosquito**

* This mosquito spreads a virus which causes either yellow fever or dengue fever in human beings.
* The mosquito spreads the virus from an infected person to another and it lays eggs in stagnant water.

**Note:** Yellow fever can be prevented by **immunization**

**Signs and symptoms of malaria**

* Tiredness or weakness.
* Rise in the body temperature.
* Rapid breathing and rapid pulse rate.
* Serious sweating of 2 – 4 hours.
* Abdominal pain, diarrhea and vomiting.
* Shivering and chattering of teeth.

**How to control Mosquitoes**

* Destroying any area with stagnant water.
* Slashing or cutting long grass near home or school.
* Spray insecticides to kill mosquitoes.
* Keep fish in ponds and dams to feed on mosquito larva.
* Pour oil on stagnant water. This stops the larva from breathing by cutting off oxygen supply.
* Sleep under a treated mosquito net.
* Using screens on ventilators to prevent mosquitoes from entering.

**COCKROACHES**

* A cockroach has a flat body. Most cockroaches are dark brown while others are black.
* A cockroach is an insect with three main body parts i.e. head, thorax abdomen.

**Feeding habits of cockroach**

* Cockroaches mainly move at night looking for food and water and during day time, they do not move.
* Cockroaches are active at night.

**A note:**  A moth is also an active insect at night.

* Cockroaches feed on our food and they transmit germs on it.

**Habitat**

* Cockroaches hide or live in dark places like behind cupboards, Old cookers, behind refrigerators, boxes, book shelves, latrines etc.

**Life cycle of a cockroach**

* A cockroach undergoes an incomplete metamorphosis.
* The female lays eggs in an egg case.
* The eggs hatch into nymphs.
* Nymphs look like adult cockroaches but have shorter or n wings.
* Later, nymphs change into adults.

**Dangers of cockroaches**

* Cockroaches carry germs which cause diseases to us.
* Cockroaches damage our books.
* They spoil our clothing.

**Diseases spread by cockroaches**

Cockroaches are suspected of carrying germs (pathogens) which cause diseases.

The disease include:-

* Polio
* Leprosy
* Typhoid
* Diarrhoea
* Amoebic dysentery
* Cholera
* Food poisoning

**Prevention and control of cockroaches**

* Cover all the food.
* Keep the house clean.
* Smoke the latrine regularly.
* Spray the cockroaches with insecticides.
* Keep covered food in the cupboard.

**TSETSE FLIES**

Tsetse flies breed in

1. Thick vegetation
2. Along river banks
3. Shady vegetation

**Note:**

1. A tsetse fly undergo complete metamorphosis.

2. A tsetsefly does not lay eggs. The eggs are just hatched within the abdomen.

**Diseases spread by tsetse flies**

Tsetse flies transmit a germ called tryponosoma which cause

1. Sleeping sickness (in human beings)

2. Nagana in (Animals)

**Note:**

1. Sleeping sickness and Nagana are transmitted by a female tsetsefly.
2. The female tsetse fly feeds on blood.
3. The male tsetsefly feeds on plant juices.

**Signs and symptoms**

* Prolonged fever
* Loss of body weight.
* Body weakness
* One becomes sleepy.

**Prevention and control**

* Spray insecticides to kill tsetse flies.
* Use traps to trap adult tsetse flies.
* Treat the infected ones in hospitals.

**BLACK FLY**

* It is small and black
* It is also called Jinja fly or simutiun fly.

**Note:**

1. A black fly breeds in fast flowing rivers where it lays its eggs.
2. It undergoes a complete metamorphosis.
3. A black fly spreads a filarial worm called **anchocerca vulvulus which causes river blindness.**

**Signs and symptoms of river blindness.**

* Lumps appear on legs and hips.
* Severe skin itching.
* Skin rashes appear on the body.

**Prevention and control**

* Spray insecticides to kill the adult black fly and its larvae.
* Treat infected people.

**ITCH MITES**

* Itch mites spread a worm which lives and multiplies inside our skins. These worms cause a disease called **scabies.**

**How is scabies spread?**

* Through skin contact i.e. shaking hands with infected people.
* Sharing clothing, beddings with infected people.
* Sharing basins of water with infected people.

**Signs and symptoms of scabies**

* A lot of itching and scratching on the skin.

**Prevention of scabies**

* Wash the body with clean water and soap.
* Iron clothes after washing them.
* Do not share clothings and beddings with infected people.

**LICE**

There are three types of lice namely:-

1. The body lice: They live in clothing. Their eggs are found in the folds and seams of clothings.

2. Hair lice: They live in the hair on our heads. They are spread by infected combs, hair brushes, hats, turbans.

3. Crab lice: they live on the hair around our private body parts. They are spread when the male and female partners join their private parts during sexual intercourse.

**Note**: The lice suck blood, cause itching, irritation and also spread / transmit diseases called typhus fever and relapsing fever.

**How are lice spread**

* Keeping hair short.
* Washing clothings
* Ironing clothes.
* Combing hair every day.
* Spread beddings in sunshine.
* Do not share clothes.

**RATS FLEAS**

* Rat fleas are carried by rats.
* They transmit bacteria which causes bubonic plague.
* Bubonic plague is caused by a virus called yersinia perstis

**Signs and symptoms**

* High fever.
* Swelling in the neck arm pits.
* Headache.

**Prevention and control**

* Kill all rats.
* Spray with insecticides to kill fleas
* People should be given anti – plague immunization in case of an out break.

**WATER SNAILS**

Water snails transmit the schistosoma worm which causes bilharzias (Schistosomiasis)

**Where does the schistosoma live in the body?**

* In the urinary bladder.
* Large intestines
* Small intestines.

**How do we get bilharzias**

* Bathing contaminated water.
* Drinking contaminated water.
* Swimming in water.

**Signs and symptoms of bilharzias**

* Passing out blood in urine. - enlargement of the liver and spleen
* Passing out blood in faeces.

**How to prevent bilharzias**

* Wearing shoes when walking in wet places e.g. swamps.
* Boiling water for drinking.
* Removing water plants in water sources.
* Use latrines / toilets for proper disposal of wastes.

**DOGS**

* Dogs transmit a virus which cause rabies.
* Other animals which transmit rabies include:-

- Infected foxes.

- Infected domestic cats.

**Signs and symptoms of rabies**

* Infected dogs become un controllable and became mad.

**Prevention and control**

* Kill all suspected mad dogs.
* Vaccinate all dogs with anti – rabies vaccine

**TICKS**

* Ticks transmit a germ called rickettsia which causes typhus fever
* Ticks live on bodies of both wild and domestic animals.
* They feed by sucking blood from animals.

**Prevention and control of ticks.**

* Spray all domestic animals e.g. dogs and cats.
* Dip / spray all domestic animals e.g. cattle.
* Keep the kraal clean.

**Note:** Ticks are not insects because they have eight legs and have no wings.

**SUMMARY**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Vector** | **Disease (s)** | **Cause** |
| 1. | Housefly | * Cholera * Typhoid * Trachoma * Dysentery * Diarrhoea | * Bacteria (Vibro cholera) * Bacteria (salmonella typhil) * Virus (Chlamydia) * Bacteria (Shigella) * Virus, bacteria, worm |
| 2. | Mosquitoes   1. Female anopheles 2. Culex mosquito 3. Tiger / aedes mosquito | * Malaria * Elephantiasis * Dengue fever and yellow fever | * Protozoa (Plasmodium) * Filaria worm. * Dengue fever virus and yellow fever virus. |
| 3. | Cockroach | * Leprosy * Polio * Food poisoning * Cholera * Diarrhoea * Dysentery | * Bacteria * Virus * Bacteria (salmonella) * Bacteria (Vibtro cholera) * Virus, bacteria worms. * Protozoa (entamoeba) |
| 4. | Tsetse fly | * Slepping sickness in man. * Nagana in animals | * Protozoa tryponosoma * Protozoa tryponosoma. |
| 5. | Black fly | * River blindness | * Worm (onchocerca vulvulus) |
| 6. | Rat fleas | * Burbonic plague | * Bacteria (Yersinia pestis) |
| 7. | Itch mites | * Scabies | * worm |
| 8. | Water snail | * Rabies | * Virus |
| 9. | Dogs | * Typhus fever * Relapsing fever | * Bacteria * Bacteria |
| 10. | Lice | * Typhus fever | * Bacteria (rickettsia) |

**END OF TOPIC QUESTIONS**

1. (a) What are communicable diseases?

(b) State any two examples of the above diseases.

2. What is the difference between a germ and a vector?

3. How is the larva stage of a housefly useful?

4. Give any vectors which undergo incomplete metamorphosis.

5. What name is given to the breathing organs of an insect?

6. How is a housefly able to spread germs?

7. What name is given to the

(a) Larva stage of a housefly?

(b) Adult stage of a house fly.

(c) Larva stage of a mosquito.

8. List down the diseases spread by the following mosquitoes:

(i) Female anopheles mosquito \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(ii) Culex mosquito \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(iii) Aedes / Tiger mosquito: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. Identify the diseases of a mosquito that can be prevented by immunization.

11. Give any two dangers of cockroaches to man.

12. How is a nymph different from an adult cockroach?

13. Identify the disease that is spread by a tsetsefly in a

(a) man \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) animals \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. Why are ticks not insects?

15. Name the germ that causes malaria.

16. Complete the table below:-

|  |  |
| --- | --- |
| Vector | Disease |
| Culex Mosquito  Rat fleas  Water snails | Scabies  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**ACCIODENTS, POISONING AND FIRST AID**

**Accidents:**

What is an accident?

An accident is a sudden happening that can cause harm or death

**Or:** It is an expected injury to the body.

**Examples of accidents in our community**

* Fractures - Poisoning - Falls - cuts
* Burns - Drowning - Electric shocks - wounds
* Scalds - Bites (i.e. snake) - Bruises - road traffic accidents

**Road traffic accidents**

Traffic refers to the movement of vehicles and people in a particular area.

Road traffic accidents are sudden happenings that cause death or harm to road users.

Examples of road users include:-

1. Pedestrians: These are people who walk along roads on foot.
2. Cyclists: These are people who ride motorcycles and bicycles.
3. Drivers and passengers:
4. Animals e.g. cattle, camel, horses, donkeys.

**Causes of road traffic accidents.**

* Over loading
* Over speeding.
* Driving under the influence of alcohol.
* Failure to follow road signs.
* Playing on roads.
* Poor conditions of roads.
* Overtaking in sharp corners.
* Careless crossing of roads.
* Driving vehicles in dangerous mechanical conditions (D.M.Cs)

**Prevention of road traffic accidents**

* Following or observing road signs.
* Avoid over loading vehicles.
* Never drive while drunk.
* Avoid playing on or near roads.
* Buildings should be atleast 20 metres from the road.
* Put zebra crossings on busy roads.

**How to cross a busy roads**

1. First stop alongside the road.
2. Look right - look left.
3. Look right again.
4. If the road is clear then cross but don’t run.

**Burns**

Definition: This is an injury caused by dry heat e.g.

* Hot metals
* Flat iron.
* Burning fire.
* Electric heaters
* Growing charcoal.

**Effects of burns**

Dehydration - Severe pain

Severe wounds

**Scalds**

Definition:

This is an injury caused by wet heat of

* Hot water
* Hot tea
* Hot porridge.
* Steam.

**First Aid for burns and scalds**

* Put the injured part in cold water on pour cold H2O over the injured part.

**Why do we put or pour cold H2O?**

1. To reduce heat in the skin.
2. To reduce destroying the body cells.

**How to prevent burns and scalds?**

1. Cook from a raised fire place.
2. Avoid playing near cooking places or open fires.
3. Keep young children out of fire reach.
4. Construct fire guards around fire places.
5. Teach children the dangers of fire or hottings.

**Why do we treat burns and scalds?**

To reduce changes of infections.

**POISONING**

Poison is any substance which affect health or cause death when taken.

Poisoning is the act of taking in something poisonous to the body.

**Types of poison common in our community (homes, schools)**

* Rat poison
* Insecticides, pesticides, herbicides.
* Liquid cleaners e.g. jik.
* Paraffin, diesel or petrol.

**Signs and symptoms of poisoning**

* Vomiting
* Rapid breathing
* Fever and sweating.
* Loss of body balance
* Mental confusion
* Internal and external bleeding.

**First Aid due to poisoning**

1. The first aid for poisoning by paraffin or diesel. Give a casualty plenty of fluids to drink; to dilute the paraffin or petrol in the body.

Why is it not good to make a person who has taken petrol a paraffin to vomit?

Vomiting can damage the throat and lungs.

2. The first aid for a person who has taken rat poison or any other type of poison is to make the casualty vomit.

How do make the casualty vomit?

* By giving him / her water mixed with soap.
* By placing the finger in his / her mouth.

**FRACTURES**

A fracture is a broken or cracked bone.

**Types of fractures.**

There are four types of fractures namely;-

1. Simple fracture (closed)
2. Compound fracture
3. Green stick fracture.
4. Comminuted fracture (complicated fractures

**Simple or closed fracture**

This is when the broken bone remains inside the skin.

**Signs and symptoms of a simple fracture.**

* The affected part swells.
* Too much pain around the injured part.

**Illustration**

**Compound (Open fracture)**

This is when the broken bone comes out of the skin.

**Signs and symptoms**

* Severe bleeding occurs.
* Broken bone comes out of the skin.

Illustration

**Green stick fracture**

* This is when a bone bends but remains inside the skin.
* It is common in your children because they have soft bones.

**Illustration**

**First Aid for fractures**

* Tie splints around the injured part.

Qn: Why do we tie or apply splints around the fractured part?

* Splints keep or hold the fractured bone in position so as to prevent further injuries.

**Sprains, strains and dislocation**

* A sprain is a torn or stretched ligament.
* A strain is a torn or stretched muscle.
* A dislocation is when a bone is displaced at a joint.

NB: Ligament join bones to bones.

**Signs and symptoms of sprains, strains and dislocation.**

* A lot of pain is felt.
* Swelling around the joint.
* Difficulty in moving the limbs.

**First Aid**

* Wrap a cold wet bandage around the injured part.
* Apply splints if it is a dislocation.

**Cuts**

**Effects of cuts.**

* They cause wounds.
* Cuts cause bleeding.

**Types of cuts.**

**Minor cuts.** These are cuts which do not go deep in the skin.

**First Aid for minor cuts.**

* Wash the injured part with clean water and soap.

**Deep cuts** are those which go deep in the skin.

**First Aid for deep cuts.**

Tie the cut with a clean bandage.

**Signs of cuts**

Severe bleeding.

**Bruises**

What is a bruise?

A bruise is a body swelling caused by internal bleeding.

**Causes of bruise**

* Accidental hitting of the body parts.

**First Aid for bruise.**

* Apply a cold compress i.e. tie a cold wet piece of cloth on a bruise.

**Wound**

Definition: A wound is a tear of the body tissues.

**Types of wounds**

1. Incised wounds: Are wounds caused by sharp objects that cause open bleeding. e.g. razor blade, knives.

**Lacerated wounds**

These are wounds caused objects with irregular edges e.g. barbed wires, animal teeth; animal claws.

**Contused wounds**

These are wounds caused by direct blows by some objects.

**Punctured wounds.**

Are wounds which have a small opening but very deep. They are caused by very sharp pointed objects

e.g. needle, nails, arrows, spears etc.

**Snakes bites**

The first aid for snake bites is to tie a cloth above the bitten part.

**Why:**

Top prevent poison from moving to the heart.

**FIRST AID**

**Definition:**

This is the immediate / first / Initial help given to a casualty before taken to the health centre.

**Who is a casualty?**

A casualty is an accident victim or is a person who has got an accident.

**Note:** The major reason for giving first aid is to save life.

**Why do we give fist aid?**

1. To save life.
2. To reduce pain.
3. To promote quick recovery.
4. To reduce / stop bleeding.
5. To prevent further injuries.

**Who is a first aider?**

A first aider is a person who gives / offers first aid services.

**Qualities of a good first aider.**

* Should be observant.
* Should be knowledgeable.
* Should have common sense.
* Should be sympathetic.
* Should be skilled.
* Should be clean.
* Should be kind.

**Responsibilities of a good first aider.**

* To help the casualty as quickly as possible.
* To assess / examine the situation of the casually to take the casualty to the health unit.

**First aid kit**

This is a collection of things used to give first aid.

**First aid box:**

This is a container where things used to give first aid are kept.

**Places where a first aid box can be found**

* Schools - Airport
* Homes - Aeroplanes - Industries
* Offices - Vehicles
* Petrol stations

**Items found in a first aid box**

1. Razor blades : Used to cut plasters and bandages.

2. Safety pins : To fasten the bandage.

3. Bandage : Used to tie broken bones

4. Pair of scissors : Used to cut plasters and gauze.

5. Surgical spirit : Used to wash and kill germs around.

6. Pain killer : Used to kill pain.

7. Cotton wool : Used to clean cuts.

8. Clinical thermometer : Used to measure human body temperature

9. Surgical gloves : Used to prevent contamination.

10. Plaster : Used to cover wounds and cuts.

11. Splints : Used to tie and keep the broken in position.

**Note:**

1. Arm sling holds the broken bone in position.

2. Stretcher is used to carry casualties who can’t walk to the health unit (centre)

3. First aid kit is used to give first aid.

**Stretchers**

**TOPICAL QUESTIONS**

1. What is an accident?

2. Identify any two common accidents in our homes.

3. How useful are the following during first:-

(a) Stretcher.

(b) Sling

(c) Splints.

4. (a) Define a fracture.

(b) Why is a green stick fracture common among young children?

(c) What first aid can you give to some one who has got a fracture?

(d) State any two causes of fractures.

5. (a) Explain the term poisoning.

(b) State any two common causes of poisoning in our homes.

**TOPIC: KEEPING RABBITS**

**Terms used in keeping of rabbits.**

1. This is the rearing of rabbits.
2. Hutch / pen : This is the home / housing structure of a domestic rabbit.
3. Borrow : This is a habitat / home of a wild rabbit.
4. Buck : This is a mature male rabbit.
5. Doe : This is a mature female rabbit.
6. Bunny / kit : This is a young rabbit.
7. Litter : This is a group of young rabbits born together at the same time by one

doe.

**External parts of a rabbit**

Diagram showing

* Head
* Eyes
* Ears
* Nostrils
* Back
* Thighs
* Tail
* Whiskers
* etc.

**Reasons why people keep rabbits / uses of rabbits**

* Rabbits provide us with meat which is a source of proteins.
* Rabbits are sources of income / money when sold.
* The dung of rabbits can be used as manure in our gardens.
* Some rabbits are kept for their fur.
* Rabbit skins are used to make articles like bags, shoes, etc.
* Rabbits can be kept as pets (for pleasure)

**Advantages of keeping rabbits over other animals.**

* Rabbits need less food than other animals like goats.
* They do not need a lot of land.
* Management practices like feeding and housing are easily carried out.
* Rabbits multiply quicker than other animals.
* They mature quickly.
* They are cheaper to buy.

**Breeds of rabbits**

1. **Local rabbits**

- These have been kept in Uganda for a long time.

- They are resistant to most diseases.

- They take long to mature.

- They are hardy to harsh weaker conditions.

- They have many different colours.

- They are smaller than exotic breeds.

- They can live in the bush.

- They dig holes in the ground where they live.

**Exotic breeds of rabbits**

* These breeds were imported from other countries.
* They have the same colour.
* They produce bigger quantities of meat.
* They have the same weight and size.
* Their young ones carry parents habits.

**Differences between local and exotic breeds of rabbits.**

|  |  |
| --- | --- |
| **Local breeds** | **Exotic breeds** |
| * Have different colours * Grow slowly * Small in size. * Resistant to diseases. | * Produce young ones with the same colour. * Grow fast. * Big in size. * Easily get sick. |

**Examples of exotic breeds of rabbits.**

They include the following:-

1. Angora rabbit.

2. Californian rabbit

3. Chinchilla rabbit.

4. Ear – lops

5. Newzealand white

**Characteristics of exotic breeds of rabbits**

1. The Angora rabbit

* They are white in colour.
* They produce fine silky hair which has ready market in Europe.
* They produce good quality meat.

2. **California rabbit**

* The body is white with the nose; tail and feed are black or dark brown.
* Grow faster than other breeds of rabbits.
* They weigh up to 5kg when mature.

3. **Chinchilla rabbit**

* They are grey in colour.
* Lighter compared to New Zealand and California.
* They weigh 3½ kg when mature.
* They are kept for meat.
* Their skins have ready market in Europe.

4. **Ear – lops**

* They are bigger compared to others (6kg when mature)
* Their ears drop on the sides of the head.
* They grow slowly compared to other breeds.

5. **New Zealand white**

* They are white in colour.
* Have short legs and produce a lot of meat.
* Have pink eyes.
* The doe produces 25 – 30 rabbits per year.
* Can reach 5kg when mature.

**Qualities of good rabbits to rear**

The following factors should be considered when selecting good rabbits to rear.

* Select healthy rabbits with a shinny coat, bright eyes, dry clean nose, without any discharge from the eyes.
* Select rabbits that have plenty of hair and are well shaped.
* Select rabbits that produce a lot of meat.

**Housing of rabbits**

**Qualities of a good rabbit house (hutch):**

* Should be strong enough to keep off predators.
* Should be raised from the ground to protect rabbits from dogs and other wild animals.
* It should always be kept clean.
* Should be kept dry to minimize breeding of germs.
* Should allow enough air entering it.
* Should not leak on rainy dogs.

**Materials used to construct a hutch**

Wood, nails, wire mesh, iron sheets, etc.

**Types of hutches (with diagrams)**

* Morrant hutch
* Caged modern hutch
* Caged wire mesh hutch (the wire mesh allow enough air and light to enter the hutch).

**Management practices in rabbit keeping**

(a) Feeding: Rabbits can be fed on the following

* Pellets
* Banana peelings
* Potatoe peelings
* Cabbage leaves.
* Green vegetables
* Carrots
* Sweet potatoes leaves.
* Green grass.

**Points to note:**

* Pellets are manufactured animal feeds.
* Rabbits should be given a block of salt to lick, to provide from them with mineral salts.
* They should be given salt dissolved in water.
* Does with young ones need more water in order to make milk for their litter.

(b) **Reproduce in rabbits**

* The act of producing young ones in rabbits is called Kindling.
* The buck mates with the doe.
* The doe then becomes pregnant.
* The doe takes 30 days to produce young ones.
* This period of pregnancy is called Gestation period.
* The doe prepares a soft bed made of soft hair from its body when it is about to produce.
* It produces between 7 – 11 young ones. If more are produced, they should be killed as the doe’s milk may not be enough for all of them.
* The buck should not be kept together with the doe as it may kill the young ones.

**Common Diseases of Rabbits**

1. Coccidiosis

**Signs and symptoms**

* Diarrhoea with blood (dysentery)
* Rabbits have swollen stomach.
* Rabbits lose weight (become small and thin)
* They have rough hair.

**Control of coccidiosis**

* Keep the hutch clean.
* Feed rabbits on clean food and water.
* Put drugs in clean drinking water.

2. **Scours**

**Signs and symptoms**

* Rabbits stop feeding.
* Pain in the stomach.
* Rabbits develop diarrhea

**Control of scours**

* Do not give rabbits wet and mouldy grass.
* Do not give rabbits young grass.
* Clean the hutches and spray regularly.

3. **Ear cancer**

**Signs and symptoms.**

* Itching ears.
* Ears develop wounds with a discharge and become painful.
* Control of ear cancer.
* Clean the ears using paraffin on cotton.
* Do not overcrowd the rabbits in one hutch.

4. **Pheumonia**

**Signs and symptoms**

* Rabbits begins shivering.
* Difficult breathing
* Rabbits lose appetite.
* They have high temperature

**Control of Pneumonia**

* Keep hutches dry and clean.
* Keep rabbits away from rain.
* Treat rabbits with dugs.

5. **Colds**

**Signs and symptoms**

* The rabbit sneezes a lot.
* Rabbit has a runny nose.

**Ways of preventing diseases in rabbits**

* Always keep rabbit hutches clean and dry.
* Avoid rain into hutches.
* Keep sick rabbits away from others.
* Feed rabbits well.
* Avoid over crowding rabbits in one hutch.
* Always call a veterinary officer to check on the health of rabbits.

**Keeping records on a rabbit farm**

Records means the written information on a farm e.g.

* Feeds records.
* Health records.
* Production records
* Breeding records
* Financial records.

**Importance of keeping records.**

* It helps to tell where to profit or loss is made.
* It enables the farmer to plan better for the farm.

**TOPICAL REVISION QUESTIONS**

1. Give the meanings of the following words.

(a) Rabbitry (b) Hutch (c) Doe (d) Kindling

2. Of what importance is rabbit keeping to a Uganda? (Give 4 ways)

3. Why do you think it is cheaper to keep rabbits than cows?

4. Name three exotic breeds of rabbits.

5. Write two disadvantages of rearing exotic rabbits.

6. List two locally available materials that rabbits can feed on.

7. What do we call the manufactured feeds for animals like rabbits?

8. Name three diseases of rabbits.

9. Why should a hutch be kept dry?

10. Okello’s rabbit has difficulty in breathing. What disease is it suffering from?

11. How can farmers prevent rabbit diseases? (Give three ways)

12. How does a rabbit move?

13. Kid is to goat as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is to rabbit.

14. What is the gestation period of a doe?

15. Why should a hutch be raised from the ground?

16. Why should a doe with young ones be given enough water.

17. Why are rabbits given a block of salt to lick?

18. Why should a buck and doe be allowed to mate?