PRIMARY WORK BOOK

ESSENTIAL BACK UP TOOL FOR SUCCESS

ESSENTIAL BACK UP TOOL FOR SUCCESS IS A SERIES OF LEARNING THE SOURCE MATERIALS ORGANISED FOR USE AFTER THE TEACHER HAS INTRODUCED AND EXPLAINED THE CONCEPT TO THE LEARNER.

ESSENTIAL BACK UP TOOL FOR SUCCESS COVERS PRIMARY SYLLABUS FROM **PRIMARY ONE TO PRIMARY SEVEN** IN ALL SUBJECT ASPECTS THAT IS ENGLISH, SOCIAL STUDIES, INTEGRATED SCIENCE, MATHEMATICS, LITERACY (FOR LOWER CLASSES) AND RELIGIOUS EDUCATION.

THIS TOOL IS WELL SUMMARISED WITH RELEVANT EXPLANATIONS, FOLLOW UP EXERCISES AND ACTIVITIES IN LINE WITH TERM ONE WORK AS PRESCRIBED BY THE NATIONAL CURRICULUM DEVELOPMENT CENTER , UGANDA.

EACH OF THE ABOVE ASPECTS HAS A VARIETY OF DIFFERENT FORMS OF ACTIVITIES TO ENHANCE MASTERY.

THIS WORK BOOK IS ORGANISED BY MARKS GATE INTERNATIONAL (MGI) IN CORROBORATION WITH STANDARD HIGH SCHOOL ZZANA (STAHIZA)

THIS TOOL HAS SERIES IN TERMS THAT IS (TERM ONE, TERM TWO, TERM THREE)

Here in is an extract of the material that compose a whole book. In case you are interested in the

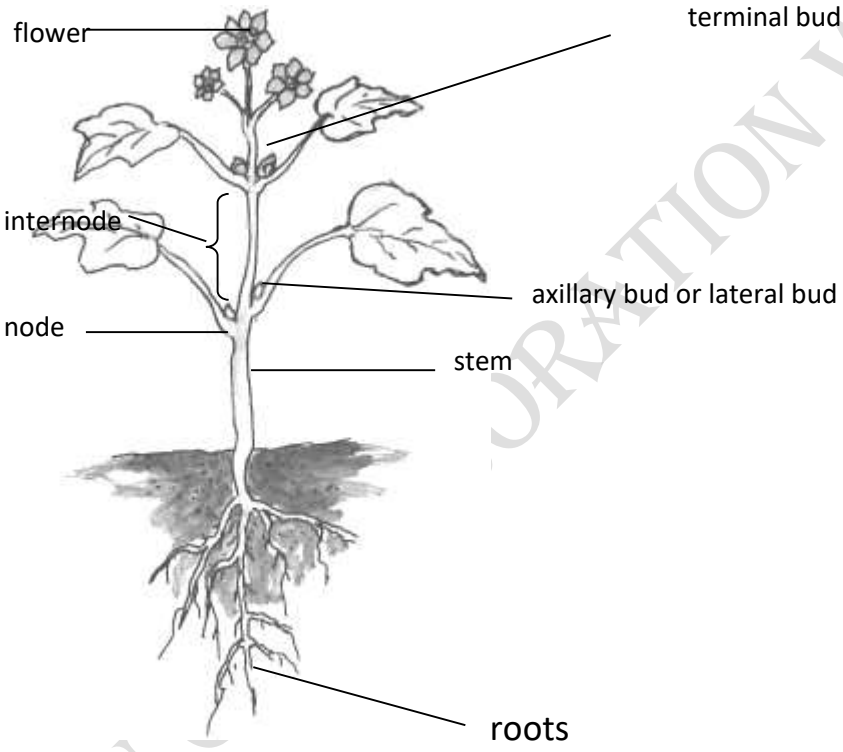
PRIMARY FOUR INTEGRATED SCIENCE FOR TERM ONE

THEME: THE WORLD OF LIVING THINGS

TOPIC 1: PLANT LIFE

Flowering plants

- These are plants that bear flowers. They include plants like beans, maize etc.



Types of flowering plants

a) Monocotyledonous plants

These are plants whose seeds have one cotyledon.

Examples of monocots

- maize
- sorghum
- millet
- rice

Characteristics of monocots

- They have parallel leaf venation.
- Their seeds undergo hypogeal germination.
- They have seeds with one cotyledon.
- They have fibrous root system.
- They have herbaceous stem

b) Dicotyledonous plants

These are plants whose seeds have two cotyledons.

Examples of dicotyledonous plants.

- Beans
- Ground nuts
- soya
- peas

Characteristics of Dicots

- They have network leaf venation.
- They have tap root system.
- Their seeds undergo epigeal germination.
- They have seeds with two cotyledons.
- They have woody stems.

ACTIVITY ONE

1. What are flowering plants?

   ……

   ……

2. Name the three system of a flowering plant.

   a) ……

   b) ……

   c) ……

3. What are monocotyledonous plants?

……

……

4. Give any three examples of such plant.

a) ……

b) ……

c) ……

5. State any three characteristics of dicotyledonous plants.

a) ……

b) ……

c) ……

6. Why is a bean plant regarded as dicotyledonous plants?

……

……

7. Apart from bean plant, name any other three exams of dicotyledonous plants?

a) ……

b) ……

8. What is epigeal germination?

……

……

9. Give any two conditions necessary for epigeal germination to take place.

a) ……

b) ……

10. What type of germination does monocotyledonous seeds under goes?

……

PARTS OF FLOWERING PLANTS

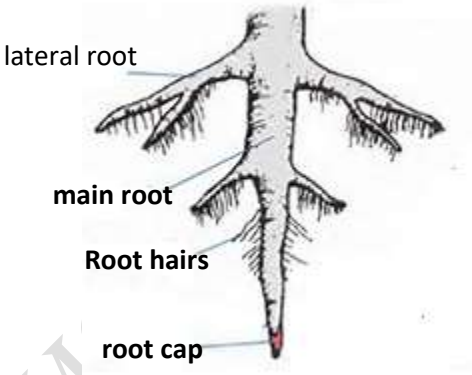
➢ ROOTS

- These are parts of a plant which grow in the soil.
- A true root system develops from the radicle of the embryo.

Types of root system

- Tap root system
- Fibrous root system

1. Tap root system



- ✓ **Root hairs:** absorb water and mineral salts from the soil.
- ✓ **Tap *roots*:** Fix the plant into the soil.
- ✓ **Root cap:** Protects the growing tip of a root.

- ✓ **Lateral root:** Hold the plant firmly in the soil.

NB: *Tap root system is the characteristic of dicotyledonous plants such as beans, soya, peas etc.*

2. <u>Fibrous root system.</u>

This is the type of root system where there are many roots growing randomly from the radicle of a seed. Fibrous roots are found in monocotyledonous plants. Like; maize, sorghum, millet and wheat.

<u>Illustration</u>

<u>ACTIVITY</u>

1. Name the part of a plant that grows in the ground.

   ……

2. State any two parts that make up the root system.

   a) ……

   b) ……

3. How are root nodules useful to the dicotyledonous plants?

   ……

   ……

4. State the use of the organisms found in root nodules.

   ……

5. Of what importance are roots to the plant?

   a) ……

   b) ……

c) ……

d) ……

6. Name the two parts of a bean seed that make up the embryo.

   a) ……

   b) ……

7. Why are tap roots classified under primary roots?

   ……

   ……

8. Why is maize called a monocotyledonous plant?

   ……

   ……

Types of Roots

- **Tap roots**
- **Fibrous roots**
- **Adventitious roots**

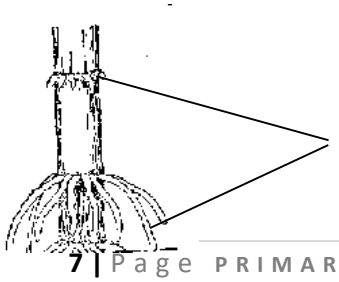
Examples of adventitious roots.

- Prop root
- Stilt roots
- Buttress roots
- Storage roots
- Clasping roots
- Breathing roots

1. Prop roots

These are adventitious roots commonly found on stems of cereal plants e.g. maize.

- They develop from nodes near the ground level.
- They usually develop during flowering stage.
- Prop roots help to give extra support to the plant.



Prop roots

2. Buttress roots.

These are parts of the plant that develop and enlarge from the stem near the ground.

Illustration.

3. Clasping roots.

These are roots found on climbing plants.

Illustration

4. Breathing roots.

These roots grow from the ground upwards.

Illustration

5. Stilt roots

These roots are found on plants which grow in muddy areas or swamps.

Illustration

6. Storage roots.

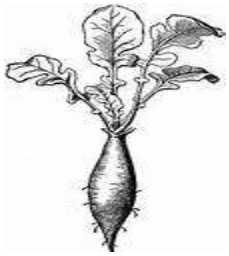
- These are special roots which store food.
- They mainly store starch.

Examples of storage roots.

a. carrots b. -sweet potatoes c. -cassava

A. carrot

Illustration



B. Cassava root tuber

Cassava is propagated / planted by use of stem cuttings.

Illustration

C. Sweet potato tuber

This is a swollen adventitious root.

Illustration

Note: A root tuber is an adventitious root or lateral root which stores food.

OSMOSIS

Osmosis is the movement of solvent molecules from an area of low salt concentration to an area of high salt concentration through a semi- permeable membrane.

Uses of roots to Plants

- Roots fix the plant firmly in to the soil.
- They absorb water from the soil.
- Some roots store food for the plant.

Uses of roots to man

- Some roots act as food.
- Some roots are used as herbal medicine.
-

➢ **STEMS**

The stem has the following parts;

- Terminal bud
- Axil
- A branch or flower
- A node

- The growing tip of a plant called **the terminal bud**.
- The angle between the leaf and the stem called **the axil**.
- The axillary bud which grows into **a branch or flower.**
- **A node** is the part on the stem where the leaf is fixed.
  An internode; the distance between two nodes.

Note: *The axillary bud is also called* ***the*** *lateral bud.*

ACTIVITY:

1. What is a root tuber?

   ……

   ……

2. Name any two examples of root tubers.

   ……

   ……

3. Why is Irish potatoes called stem tuber?

   ……

   ……

4. State the importance of prop roots to plants.

   ……

5. Give any two uses of roots to man.

   a) ……

   b) ……

6. State any four uses of roots to plants.

   a) ……

   b) ……

   c) ……

   d) ……

TYPES OF STEMS

They include:

- Upright or erect stems
- Underground stems
- Weak stems.

1 Upright or erect stems

These stems are found on either dicotyledonous or monocotyledonous plants. They grow straight in space.

Examples include;

- woody plants -pineapples
- Beans -maize
- Peas -soya beans

2. Underground Stems

These are stems which grow underground and store food.

Examples include

- Stem tubers
- Rhizomes
- Bulbs
- Corms

Characteristics of Underground stems.

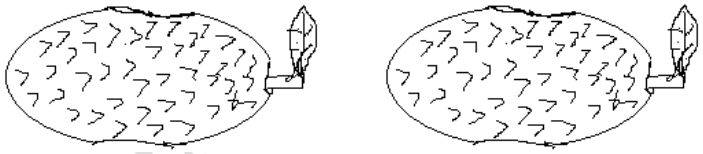
- They have scale leaves.
- They have buds.
- They have adventitious roots.

- **A Stem tuber**

- These are swollen underground stems which store food.
- They have buds.
- They have scale leaves.

Examples of Stem tubers include;

Irish potato



NB: What you have finished is a **small part** of the material that compose a **whole book**. In case you are **interested** in the complete set of this book, contact;

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