

# 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 complete sets of books, contact;**  
**0772511120/0705283741**

# PRIMARY THREE WORK BOOK FOR TERM ONE

Theme: Our environment

## New words

-Living organisms	- weathering	- earthquake	- deforestation
decomposition	- mineral salt	- earthworm	- erosion -
Bacteria	- dissolve	- Decay/rot	

**Environment** means things around us. Environment is people and their surrounding

## Components of environment

Living components of environment

-plants -animals

Nonliving components of environment

-Air -Water -Soil

## **Soil**

**Soil** is the top layer that covers the earth's surface. Soil is formed through the following processes

-Decomposition  
-Weathering – *main way soil was formed.*

**Decomposition** is the process through which dead plants and animals rot or decompose to form soil.

## **Causes of decomposition**

✓ Fungi ✓ bacteria

**Weathering** is the breaking down of small rock particles from the parent or main rock to form soil.

## **Causes of weathering**

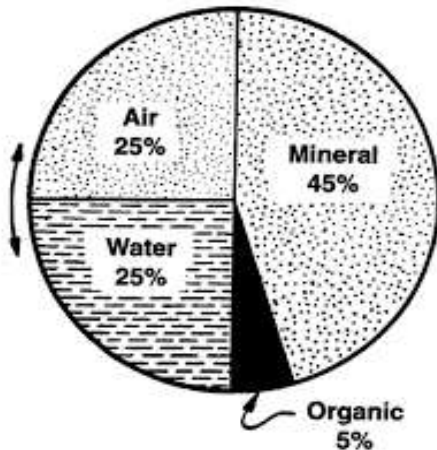
✓ Earth quake	✓ Landslides
✓ Human activities	✓ Acidic rain
✓ Animal movements	

## Components/composition of soil

These are things that make up soil.

- rock particles
- humus/organic matter
- water
- air
- living organisms
- dissolved mineral salts

### illustration of their composition



#### (a) Rock particles

These are pieces of rock that have broken away from the parent rock. The process by which particles break from the parent rock is called **weathering**.

#### (b) Humus

This is the part of soil is formed from plant and animal material when they decay.

#### Importance of humus in soil

- Humus helps to hold the soil particles together
- Humus helps the soil to hold more water and air.
- Humus is food for soil organisms.

#### (c) Experiment to show that soil contains humus

##### Things to be used (Apparatus)

- Soil sample, empty glass, water

##### Steps followed

- Get a big glass
- Pour in soil up to the level shown in the picture below

- Add water to the glass
- Now cover the glass and shake it and put it down.
- Observe the material in the glass at the top
- In your observation you might have seen some dark coloured material floating on the surface of the water. This organic matter is called **humus**.



### **Evaluation activity**

1. What is soil?

\_\_\_\_\_

2. How is soil formed?

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

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

3. What are the components of soil?

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

iv) \_\_\_\_\_

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

v) \_\_\_\_\_

iii) \_\_\_\_\_

vi) \_\_\_\_\_

4. The breaking up of rocks to make soil is called \_\_\_\_\_

**(decomposition, weathering)**

5. \_\_\_\_\_ is when plants and animals die and rot to form part of soil called humus.

6. Give three reasons why humus is important in the soil.

- i) \_\_\_\_\_
- ii) \_\_\_\_\_
- iii) \_\_\_\_\_

7. Write two groups of the components of the environment.

- i) \_\_\_\_\_
- ii) \_\_\_\_\_

### (a) Water

Water occupies spaces between rock particles.

#### Importance of water in the soil

- It dissolves mineral salts in the soil so that they can be absorbed by plant roots.
- It is absorbed by plant roots and used during the process of photosynthesis.
- It helps to keep the soil cool.

#### Experiment:

##### Finding out the presence of water in the soil

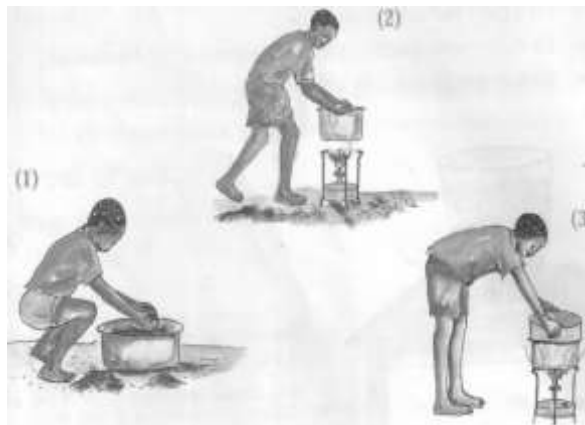
1. Get some garden soil and put it in a saucepan.
2. Cover the saucepan with another saucepan.
3. Put the sauce pan on fire.
4. After sometimes removes the saucepan on top.

#### Observation

Water droplets are seen on the cover.

#### Conclusion

Water droplets show that soil contains water.



## (b) Air

Air is found in spaces between the soil particles.

### Importance of air in soil

- It is used by the plant roots and other living organisms in the soil for breathing
- It is used by seeds during germination
- It also keeps the soil cool

### Experiment to show that soil contains air

#### Things needed

- glass
- lump of soil

#### Steps followed

- Get a lump of dry garden soil and put it in a container.
- Add water to this soil and observe what takes place



#### Observation

Air bubbles are seen coming out of the soil.

#### Conclusion

Air bubbles show that soil contains air

## (d) Living organisms.

There are two kinds of living organisms found in the soil, those which can be seen and those which cannot be seen with our naked eyes. Those which can be seen with our naked eyes include **earthworms** and insects like **termites**, **ants** and **crickets**. Those which cannot be seen with our naked eyes include **bacteria and fungi**.

### Importance of living organisms in the soil

- Bacteria and fungi help in decomposition
- Termites, ants and earthworms break down plant materials into smaller particles
- Some living organisms help in soil aeration.

### Animals that live in soil:

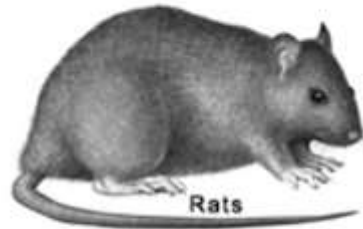
- Moles
- Worms
- Termites
- Squirrels
- Bacteria



Guinea pig



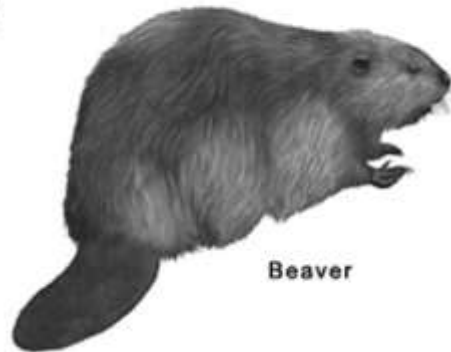
groundhog



Rats



Porcupine



Beaver

### Mineral salts

- These mineral salts are absorbed by plant roots and make them healthy and strong.

### Examples of mineral salts needed by plants

1. Magnesium
2. Iron
3. Potassium
4. Calcium
5. Phosphorus
6. Nitrogen

## **Activity**

1. Underline the mineral salts found in soil.

**Iron, nitrates, nitrogen, bacteria, potassium**

2. Give two examples of living organisms which cannot be seen with our naked eyes.

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

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

3. Which component of soil is used by plants to make their own food?

\_\_\_\_\_

4. \_\_\_\_\_ is a living component of soil.  
(humus, water, earthworm)

5. Draw and name two living organisms which live in soil.


6. Give two importance of living organisms in the soil

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

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

iii) \_\_\_\_\_

iv) \_\_\_\_\_

## **Soil erosion:**

This is the removal of top soil by its agents

## **Agents of soil erosion**

Fast flowing water.

- Strong wind.
- Moving animals.

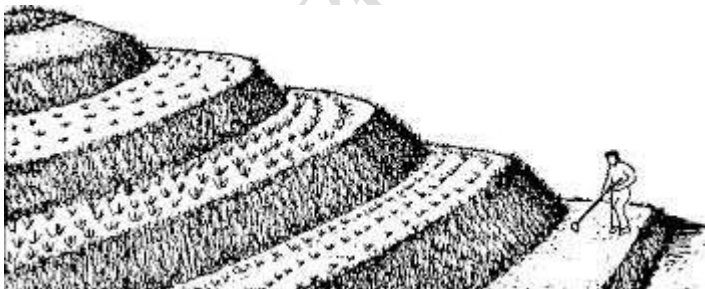
## **Causes of soil erosion**

- Over grazing.
- Deforestation
- Bush burning.
- Mono cropping.
- Over stocking
- Over cultivation

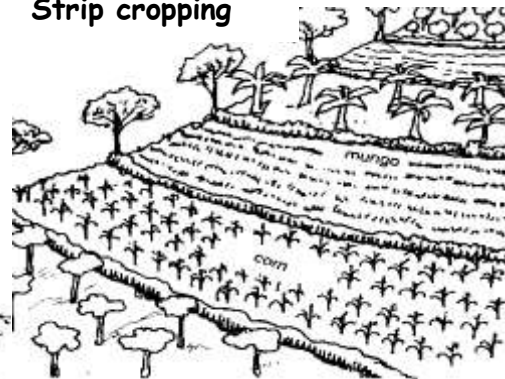
## **Control of soil erosion**

- 1) By mulching –the covering of top soil with dry plant materials.
- 2) By terracing on hilly area
- 3) Contour ploughing
- 4) Planting trees.
- 5) Planting grass on bare land.
- 6) Crop rotation.
- 7) Re -afforestation – planting of trees where they were cut down.

**Terracing**



**Strip cropping**



**Mulching**



### **Examples of mulches**

- ✓ Dry grass
- ✓ Banana leaves
- ✓ Coffee husks etc.

### **Advantages of mulching:**

- Improves soil fertility.
- Controls growth of weeds
- Controls soil erosion
- Keeps moisture in the soil

### **Disadvantages of mulching**

- It hides crop pests.
- Mulches can easily catch fire.
- It is time consuming to lay mulches.

### **Effects of soil erosion:**

- It leads to soil exhaustion.
- It creates gulleys.

### **What is soil exhaustion?**

Soil exhaustion is the loss of soil fertility.

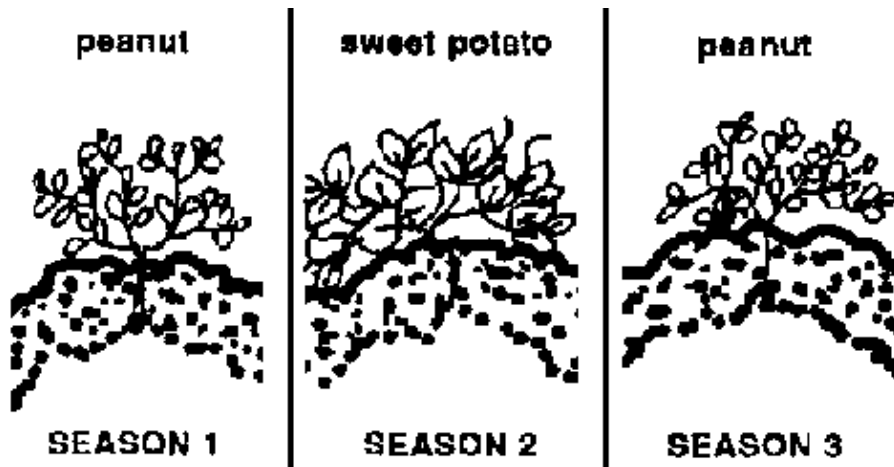
### **Crop rotation**

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

### **Advantages of crop rotation**

- Controls soil erosion
- Improves on soil fertility

- Controls crop pests and disease



### Activity

1. What is soil erosion?

\_\_\_\_\_

2. What are the three agents of soil erosion?

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

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

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

3. Write three causes of soil erosion

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

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

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

4. How can we control soil erosion? Give two ways.

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

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

ii) How does crop rotation control pests?

\_\_\_\_\_

5. Why do farmers mulch their gardens?

- i) \_\_\_\_\_
- ii) \_\_\_\_\_

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**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; **0772 511 120/ 0705 283 741**