

# Science

## ALP LEVEL 1

## PUPIL'S BOOK

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## FOREWORD

I am delighted to write the foreword for this book. The Ministry of General Education and Instruction (MoGE&I) has developed the Accelerated Learning Programme (ALP) textbooks based on the National Curriculum of South Sudan.

The textbook was written to help learners develop the background knowledge and understanding in the subject. It is intended largely to serve as a source of knowledge and understanding of the subject concerned, but not to be considered as a summary of what learners ought to study.

The National Curriculum is a competency based and learner-centered that aims to meet the educational needs and aspirations of the people of South Sudan. Its aims are manifold: (a) Good citizenship (b) successful lifelong learners, (c) creative, active and productive individuals; and (d) Environmentally responsible members of our society.

This textbook was designed by subject panelists to promote the learners' attainment of the following competencies; critical and creative thinking, communication, cooperation, culture and identity.

No one can write a book of this kind without support from colleagues, friends and family. Therefore, I am pleased to register my thanks to Dr Kuyok Abol Kuyok, the Undersecretary of the Ministry, who emphasized the importance of Alternative Education System (AES) and approved the development of its textbooks.

I also want to record my thanks to Ustaz Omot Okony Olok, the Director General for Curriculum Development Centre (CDC) and Ustaz Shadrack Chol Stephen, the Director General for Alternative Education Systems (AES) who worked tirelessly with the subject panelists to develop the textbooks.

Lastly, but not least, my greatest thanks and appreciation must go to the Global Partnership for Education (GPE) and UNICEF-South Sudan for without their support and partnership this textbook would not have seen light.



Hon. Awut Deng Acuil, MP  
Minister,  
Ministry of General Education and Instruction  
Republic of South Sudan, Juba



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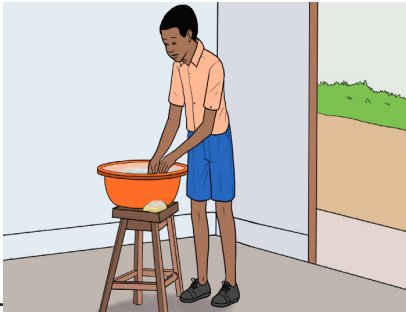


## 1.1 Care of the body



## Activity 1

In pairs



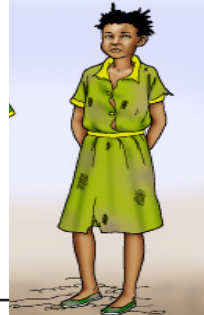
A



B



C



D

1. Talk to your friend about what you can see in the pictures above? How do the pictures relate to good health?
2. Recite this poem in pairs.

When I wake up in the morning,  
I brush my teeth,

I wash my face,  
I wash my hair,  
I wash my feet,  
I bathe with warm water,  
I dress up for school,  
I go to school,  
I remain fresh all day.

3. What do you learn from the poem?

## Learning point

Keeping our body clean is known as personal hygiene.  
We clean different parts of the body differently.

(a) Cleaning your teeth



### Activity 2

In groups



1. You are provided with the following materials.



A



B



C



D

**2.** Talk to the group members about:

- How you will use the materials to clean your teeth.
- Suggest Other ways of cleaning your teeth.

## Learning point

Brushing your teeth keeps your mouth fresh and protects the gums from diseases.



### Fun corner

Practise singing the following song.

Brush your teeth always,  
After taking breakfast, brush your teeth,  
After eating snacks, brush your teeth,  
After taking supper, brush your teeth,  
After having lunch, brush your teeth,  
Brush your teeth always.

### Remember!

Toothbrushes are personal items. They should not be shared.

When do you wash your face?



### Activity 3

In groups



Tell your friends:

1. What you do when you wake up.
2. How do you clean your face.
3. Why is it important to wash your face.

### Learning point

We should wash our face when we wake up, after playing and before going to bed.

#### Remember!

When washing your face, do not forget to wash the neck and behind the ears.





## Check your progress 1(b)

1. What kind of dirt collects in your ears?
2. How often should you clean your ears?
3. Why do we wash our hands?
4. Cutting your nails can help to prevent the spread of diseases. Why do you think this happens?

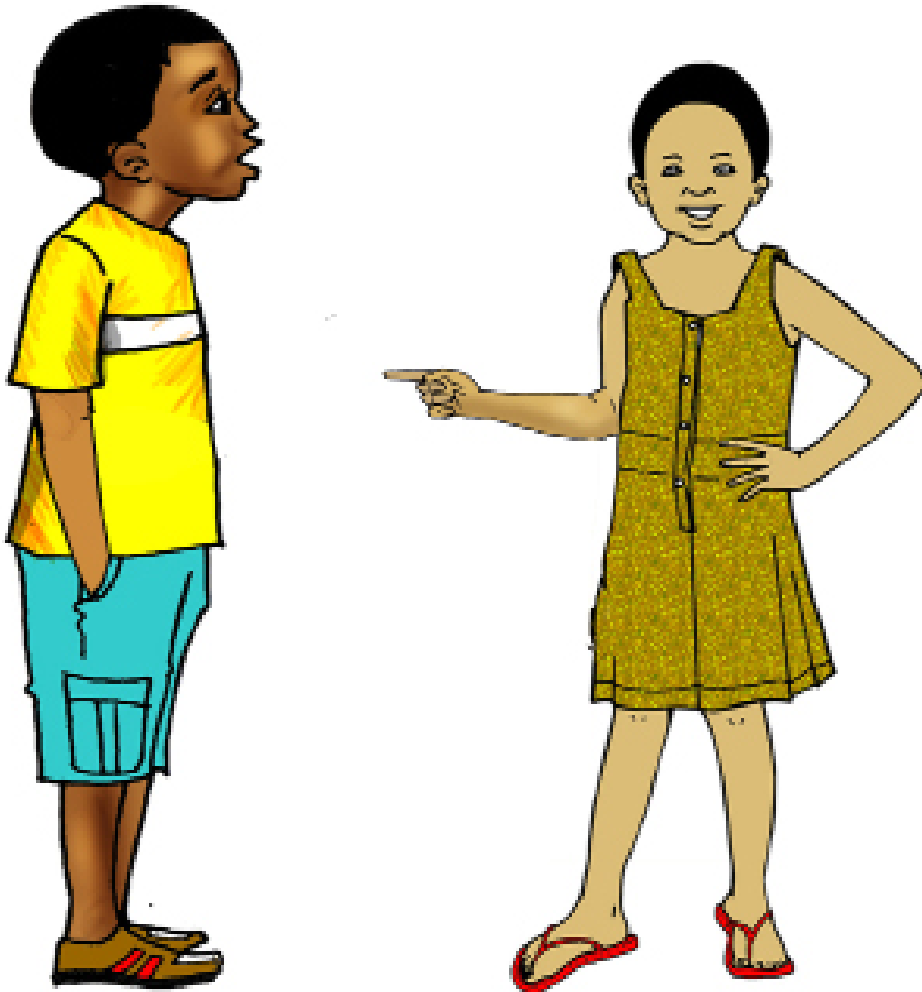
## 1.2 Uses of bones, joints and muscles in human beings



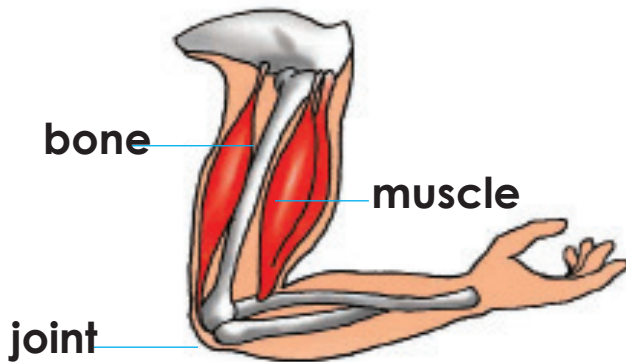
### Activity 4

In pairs

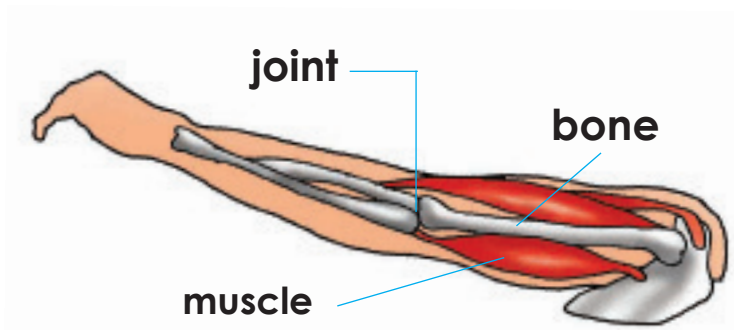
- 1) Use a string to measure the length of the arms and legs of your partner when stretched and when bent.



- What makes your arm and legs to stretch or bend?
- How are you able to run, jump, skip or walk?



a) A bent arm



b) A stretched arm

**2) Trace your longest finger when stretched on a drawing paper.**

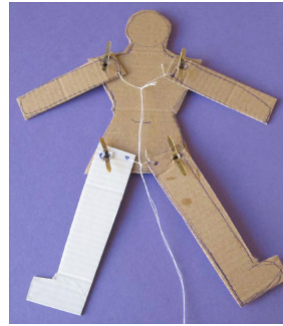
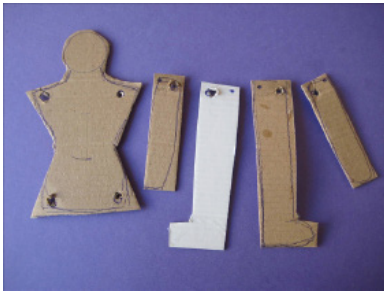


### **Learning point**

- **Bones and joints work together with muscles to help in movement.**

# FUN CORNER

- 1) Get cartons with human pictures.
- 2) Cut out the parts of the human body using scissors.
- 3) Join the body parts using a string.
  - Are the body parts moving?



## Importance of Healthy Exercises



### Activity 5

In groups



A



B



C



D



E



F

- 1) What activities are the children doing in the pictures?
- 2) Why are the activities important?

## Learning point

- Exercise is good for our health.



## Check your progress 1b

What enables our body parts to move?

Which parts of our body can move?

3) What enables your arm to bend up and down?

## 1.3 Using toilets and latrines



### Activity 6

In groups



- 1) Talk about what you see in the picture above.
- 2) Where do you go when you feel pressed?



## Learning point

- Toilets, latrines and urinals are places where we go to relieve ourselves.

### Good habits when using toilets, latrines and urinals



## Activity 7

In groups

- 1) What is happening in each picture?



A



B

- Say whether they are good or bad habits.





### Remember

Always clean the toilets, latrines and urinals to keep off dirt and germs.

### Learning point

Germs are small organisms that cause diseases.

Germs can be passed from one person to another. The diseases caused by germs include influenza, cholera, cough and typhoid.



## Check your progress 1c

- 1) Put a tick  in the box to say whether these are good or bad habits when using toilets.

Habit	Good habit	Bad habit
a) Knocking the door of a toilet before entering.		
b) Disposing off diapers in flush toilet bowls then flushing the toilet.		

- 2) What should we do when the toilets are dirty and smells bad?
- 3) Name two things used in cleaning the latrines and toilets.
- a) \_\_\_\_\_ b) \_\_\_\_\_

## 1.3 Designing posters



### Activity 8

As a class



Visit the nearest health centre and observe the posters on the wall.

- What do they contain?
- How is information written in the posters?

### Learning point

An example of a poster in a health centre is shown below.

**Healthy Child Care**

# When to Wash Hands

- 

**1** Wash hands at key points during the day
- 

**2** Before children arrive for the day
- 

**3** After cleaning
- 

**4** Upon arrival and after outdoor play
- 

**5** Before and after preparing and eating food
- 

**6** After diapering or toileting
- 

**7** After contact with body fluids
- 

**8** After touching animals or their equipment



## Check your progress 1(j)

1. What information is found in a poster on uses of soap?
2. What information would be contained in a poster about the danger of germs.

## 1.4 How animals clean themselves

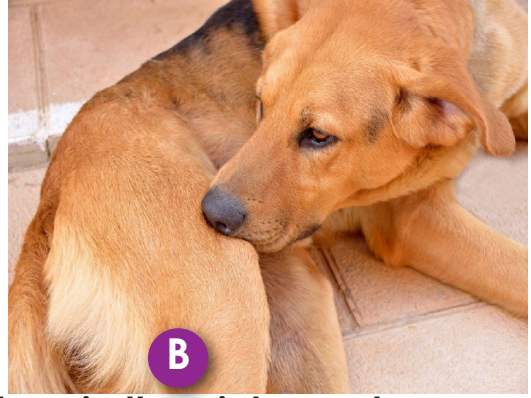


### Activity 9

#### In pairs

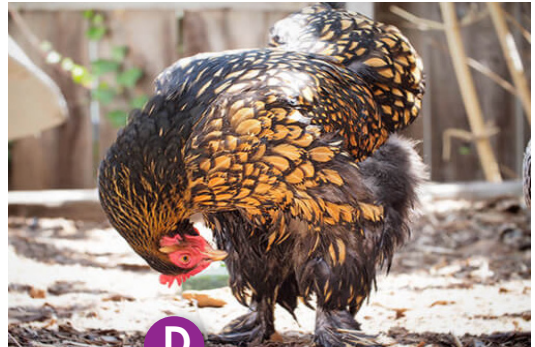


Talk to your friend. How do dogs and chickens clean themselves?



1. What do you think the dogs in the pictures above are doing?

- What makes a dog roll on soil, sand or grass?
- Why do dogs bite their fur?



2. What do you think the chickens in the pictures above are doing?

- What makes a chicken shake off soil?

## Learning point

Dogs have different ways of cleaning themselves.

Chickens too are clean birds. They give themselves a dust bath then shake it off.



### Check your progress 1(k)

1. Name other two animals and state how they clean themselves.
2. Why should animals keep clean?

## 2.1 Plants



## Activity 1

In pairs



1. Talk to your friend about the plants below. Tell your friend:
  - The names of the plants.
  - Where the plants grow.





2. Walk around your school compound with your teacher and observe the plants found in the school compound. There after, answer these questions:

- Are they similar?
- Do they have the same leaves?
- Do they have the same colour?
- Are they small or big?

## Learning point

Plants grow in different areas. Some plants grow in water, others in wet areas, dry areas and along the rivers.

- What kind of plants are found in your area?

## Parts of a plant



### Activity 2

In groups



### What you need

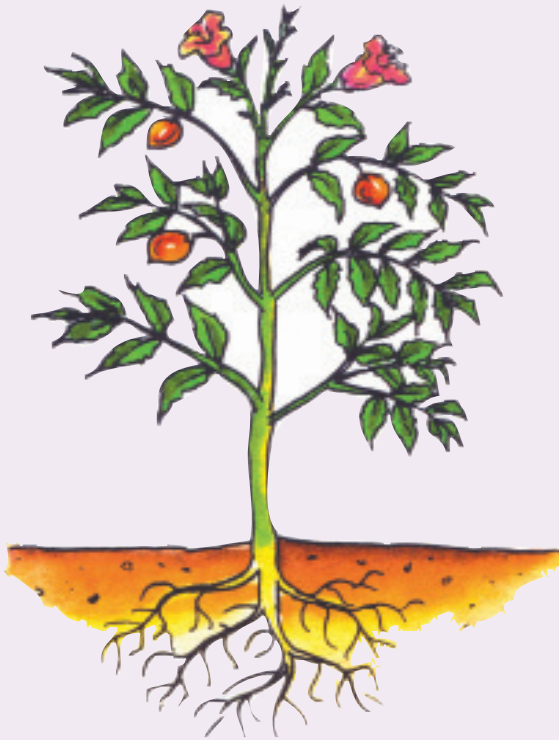
An uprooted young plant, drawing papers, pencils, crayons, Manila paper and glue stick.





## What to do

1. Look at the uprooted young plant.
  - Can you identify different parts of the plant?
3. Draw the plant on a Manila paper.
4. Name parts of a plant shown below.



## Fun corner

Play a game of identifying plant parts using flash

## Remember

Not all plants have the same strstructure.



## Check your progress 2(a)

1. Match the following

	Part of the plant	Description
1	Leaves	They are very beautiful.
2	Stem	Are picked when they are ready.
3	Fruits	They are green.
4	Roots	The middle part of the tree.
5	Flowers	They are found in the soil.



## Classification of plants based on their habitats

A habitat is a place where plants are found.

### (a) Plants that grow in water or near water



#### Activity 3

In pairs



1. Talk to your friend about the following plants.



- What is the difference between plants A and B?
- Why do you think the plants grow near water or in water?
- Name other plants that grow near water or in water.



## Activity 4

As a class



Visit a nearby swamp and:

1. Observe and collect plants that grow in water and near water.
2. Copy and complete the following table in your notebooks.

	Name of the plant	Grows in water	Grows near water
1			
2			

## Learning point

Some of the plants that grow in water either float in water or grow at the base of the water.



## Fun corner

Draw plants you might find in a pond or a swamp near your home.

**Remember!**

**Do not destroy plants.**



**Check your progress 2(b)**

1. Which plants grow in water?

a) \_\_\_\_\_

b) \_\_\_\_\_

2. Draw two plants that grow near water.

a)

A large empty rectangular box for drawing a plant that grows in water.

b)

A large empty rectangular box for drawing a plant that grows near water.

3. Which two things are common in plants that grow in and near water?

a) \_\_\_\_\_

b) \_\_\_\_\_

## (b) Plants that grow in hot and dry areas



### Activity 5

### In groups



1. Talk to your friends about the plants above. Tell them:
  - (a) Where the plants are found.
  - (b) How their leaves look like.
  - (c) How tall you think the plants are.
2. Write down what they have in common with your friends' opinions.

## Learning point

Plants that grow in hot and dry areas include: acacia, cactus and aloe vera



### Check your progress 2(c)

1. Say if these statements are true or false.
  - (a) Plants that grow in water float in water.
  - (b) Papyrus grows at the river bank.
  - (c) Plants that grow in hot and dry areas are short and have thorns.

## Plants that grow in cool and wet areas



### Activity 6

In pairs







1. Talk to your friend about the plants above.
  - (a) Can you identify the plants?
  - (a) Do they grow at home?
  - (c) Do the plants have leaves throughout the year?

## Learning point

Plants that grow in cool and wet areas need a lot of rainfall to grow. Their leaves are usually green throughout the year.



### Fun corner

In groups, identify and draw plants found around your home that need a lot of rainfall to grow.

## Remember!

Not all plants found in an area are the same.



## Check your progress 2(d)

1. What do plants that grow in cool and wet areas have in common?
  - a) \_\_\_\_\_
  - b) \_\_\_\_\_
  - c) \_\_\_\_\_

## (d) Plants that grow along the river



### Activity 7

In pairs



1. Talk to your friend about the pictures below.



- (a) Why do you think they grow where they are found?
- (b) Do such plants grow in your home area?

## Learning point

Plants that grow along the river include papyrus and palm trees.



### Fun corner

1. Talk to your friends about the uses of plants found along the river.
2. Use plant materials found along the river to make a basket.

### Remember

We get many products from plants.



### Check your progress 2(e)

1. Name two plants that grow along the river.
  - a) \_\_\_\_\_
  - b) \_\_\_\_\_



2. Why do you think the plants grow along the river?

a) \_\_\_\_\_

b) \_\_\_\_\_

## 2.2 Animals



### Activity 8

In pairs



Talk to your friend about the pictures below.



a) Where do the animals in the pictures above live?

## Learning point

Animals live on land or in water.

### Land animals

Animals that live on land include :

- Animals that live underground.
- Wild animals.
- Domestic animals.

### (a) Animals that live underground



#### Activity 9

In pairs



1. Answer these questions.

What are these animals? Where do they live? Which other animals live where they are found? Referring to the pictures A and B below



A



B





## Activity 10

In groups



### What you need

A jembe or hoe



### What to do

1. Your teacher will guide you in digging out soil in the school garden.
2. Write down some of the animals you found.
3. In groups, discuss why they cannot live above the ground compared to other animals.

### Learning point

Moles, termites, ants and squirrels live in holes underground.

Earthworms, millipedes, centipedes and worms live in the soil.



## Check your progress 2(f)

1. Why do you think animals live under the soil?
2. Animals that live underground \_\_\_\_\_  
from other animals.

## (b) Wild animals



### Activity 11

In groups



1. Talk about the pictures that follow.



A



B





- (a)** Where are the animals found?
- (b)** Name the animals that you have seen.
- (c)** Suggest the kind of food that the animals eat.





## Activity 12

As a class



### What you need

Pens and notebooks

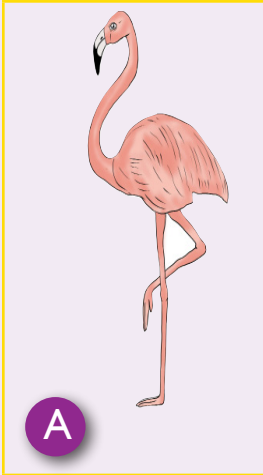


### What to do

1. Your teacher will arrange a trip to an animal park or invite a wildlife officer to tell you about wildlife.
2. Ask the wildlife officer questions about wild animals.
3. Observe pictures provided in a chart.
4. Copy and complete the table below in your notebook.

	Animals that feed on other animals	Animals that feed on plants only
a		
b		
c		
d		

5. Name the birds shown below.



6. Where do you think wild birds live?

### Learning point

Animals that live in the forest are known as wild animals. These animals include gazelles, zebras, lions, antelopes among others. Birds make part of wild animals too.



### Fun corner

Draw and colour a bird you like.

**Remember!**

Wild animals are not friendly.



## Check your progress 2(g)

1. Is it true or false to say:
  - a. Birds live in nests. \_\_\_\_\_.
  - b. We should not take care of wild animals. \_\_\_\_\_.
  - c. Wild animals gives the government money. \_\_\_\_\_.
  - d. An ostrich flies. \_\_\_\_\_.

## Characteristics of animals and their habitats



### Activity 13

In pairs



1. Observe photographs, pictures and charts provided to you by your teacher or the picture below.



**Antelopes at home**

2. Talk to your friend about the animals you have seen.

(a) How do they protect themselves from other animals?

(b) Which animals are dull coloured?

(c) Which ones are brightly coloured?

3. Copy and fill the table below in your notebooks.

	Animals with dull coloured fur	Animals with brightly coloured fur
1		
2		
3		
4		
5		

### Learning point

Animals with brown or grey fur cannot be seen from far. They look like their surroundings. Their predators are not able to spot them. Predators are animals that eat other animals.

Animals with brightly coloured fur such as zebra can be spotted from far. They are easily seen by their predators.





## Check your progress 2(h)

1. Name two wild animals that have brightly coloured fur.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
2. Which animals are eaten by other animals?

## 3.1 Sources of light



## Activity 1

In groups

- 1) Name the sources of light shown below.



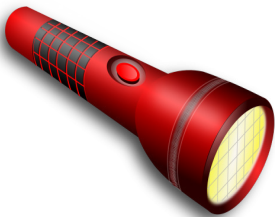
A



B



C



D



E



F

- 2) Name other sources of light used in your home.
- 3) Where do you think light comes from?

### Learning point

- Sources of light include the sun, lantern, fire, candles, lamps, torches.



#### Remember!

The sun is the main source of light. Do not look directly at the sun. It can destroy your eyes.

Draw and colour the source of light you use at home.

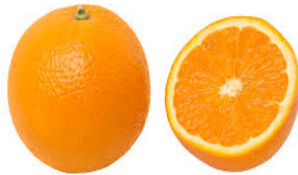
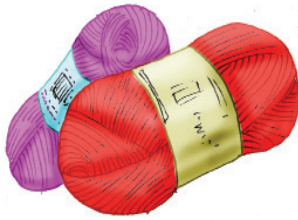
## 3.2 Sense of seeing



### Activity 2

In pairs

Tick  the one that is different in each row.



2) Why do you think they are different from the rest?





## Learning point

- We cannot see without our eyes. Eyes helps us to see.

Did you know?

Hawks have strong eyes which help them see things from far up in the sky. That is why they see small chicks from far and come to catch them.




## FUN CORNER

Draw and colour the sun, moon and stars.



## Check your progress 3a

Match the source of light with its name.

Picture	Name
	Candle
	Sun
	Lamp
	Fire

2) When there is no light, my \_\_\_\_\_ cannot see.

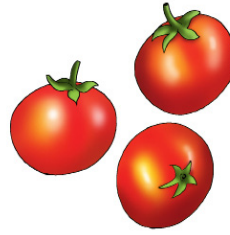
3) Write the correct colour for the following foods.



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



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



(c) \_\_\_\_\_

### 3.3 Sources of sound







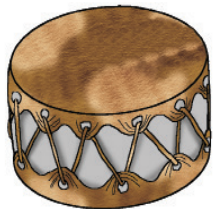
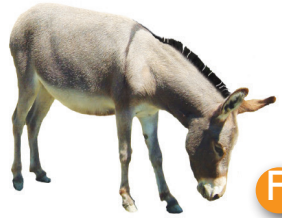
#### Activity 3

In groups

Name the following sources of sound.

Which ones are found at school?

Which ones are found at home?

 A	 B	 C
 D	 E	 F



G



H



I

4) Name other sources of sound.

### Learning point

- Things that produce sound are called sources of sound.  
Look at the pictures below. What are the children doing?



A



B



C

- When children play, they produce sound.
- When children sing, they produce sound.
- When playing a guitar, sound is produced.

# FUN CORNER

Draw and colour a dog barking.



**Remember!**

Sharp or loud sounds can cause damage to the ears!



Check your progress 3b

What type of sound is produced by each of the picture below?



A



B



C



D



E



F

## 3.4 Sense of hearing

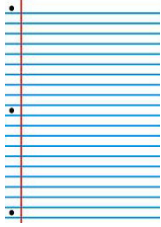


### Activity 4

In pairs

- 1) Drop the following things on the floor. Tick  the correct box with the kind of sound produced.

Picture	Loud	Soft
		
		
		
		



What did you use to differentiate the sounds?

### Learning point

- Things that produce sound are called sources of sound.
- The ear is the organ for hearing.

### FUN CORNER

Close one ear and role play listening to different



**Remember!**

We should protect our ears.

**Did you know?**

**Horses have strong ability to hear sound from far.**

**Elephants have large ears that can get faintest sound.**

### 3.5 Sense of taste



#### Activity 5

**In groups**

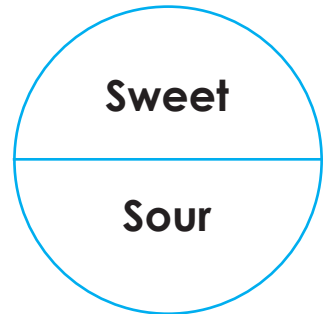
**Play a game of tasting things.**

**Blindfold one member of the group and let him or her pick an item from a box and taste.**





- 3) Let your friend tell you if you are right.
- 4) Draw a line to match each picture with the correct part of the circle.



- 5) How do the following taste?

	Sweet	Salty
	Bitter	Sour
	Sweet	Salty
	Bitter	Sour



**Sweet**

**Salty**

**Bitter**

**Sour**



**Sweet**

**Salty**

**Bitter**

**Sour**

## Learning point

- The tongue is the organ for tasting.
- Some things taste sweet, bitter, salty or sour.
- Some things taste salty. Salt tastes salty.



### Remember

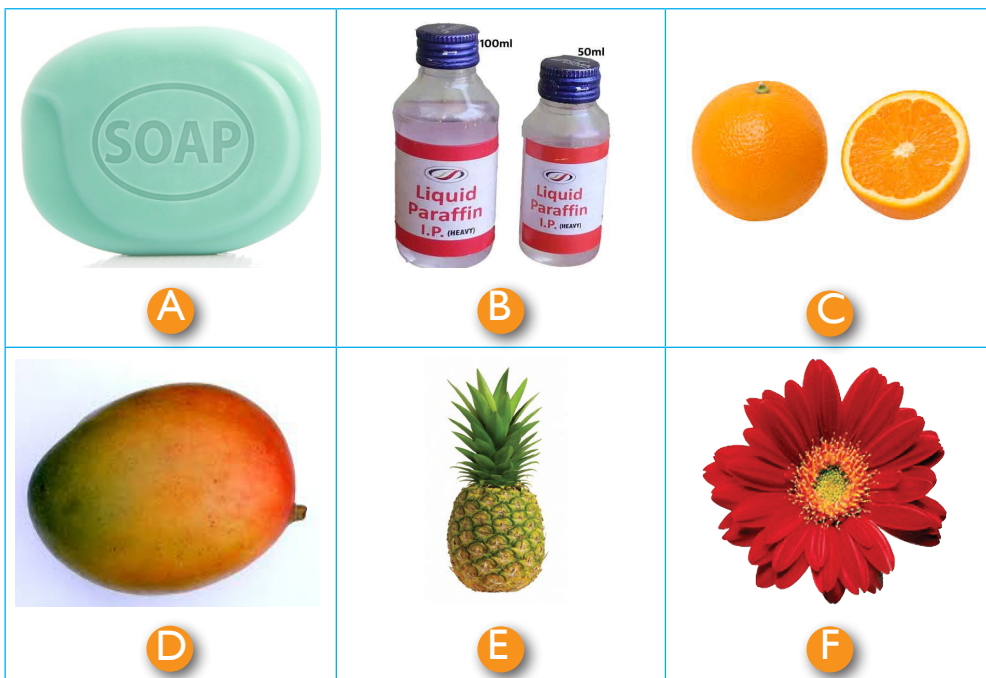
Do not taste everything that you come across. Some things may be harmful to your health.

## 3.6 Sense of smell



### Activity 3.8

In pairs  
Smell these things.



- Which one has a smell?
- Do all things smell the same?

In pairs, play a game of smelling items.



Can you identify the items?

### Learning point

- We use the nose to smell things.
- Our nose is the sense organ for smelling.

### FUN CORNER

Role play a smelling game with a friend.






### Remember

Dogs have a strong sense of smell. It can smell things that are very far.



### Check your progress 3d

Match the sense with the sense organ in the table below.

Sense organ	Sense
	Sight
	Tasting
	Smelling

	<p>Hearing</p>
---	----------------

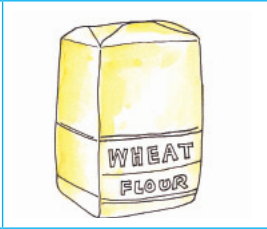
### 3.7 The sense of touch



#### Activity 6

In pairs

Play a game of feeling things provided by the teacher.



Let your friend blindfold you and use your hands to touch things. Touch and feel whatever is brought to you, one by one and say how it feels.

- Is it cold or warm?
- Is it rough or smooth?
- Is it hard or soft?

#### Learning point

- We use the skin to feel things around us.

# FUN CORNER

Play a game of feeling things with a friend.



**Remember!**

Do not touch everything you come across, some things can be dangerous to you.



Check your progress 3c

How do the following things taste?



A



B



C



D

2) How do the following things feel?



A



B



C



### Learning point

Our bodies are covered by skin. When one touches us we feel it through our skin.

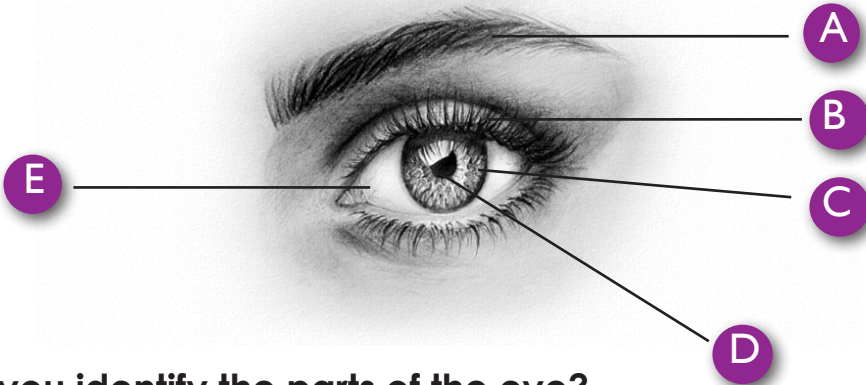


## 3.8 Parts of an eye



### Activity 4

In pairs



Can you identify the parts of the eye?



### Check your progress 3(c)

1. Say if each statement is true or false.
  - a. Light enters the eye through the nose.
  - b. We have three eyes.
  - c. The eyeball is the white part of the eye.
  - d. We should not rub our eyes when they itch.
2. Talk to your friend about true or false statements about the sense of sight.

# Sense of hearing



## Activity 5

As a class



### What you need

A bell

### What to do

1. Let one learner, go outside the classroom and ring the bell.



2. Try to cover your ears and listen. Can you hear any sound? Uncover your ears. Can you hear the sound?

### Learning point

We hear sounds around us using our ears. When ears are covered we cannot hear any sound.

## 3.9 Sounds of different pitches



### Activity 8

#### In groups



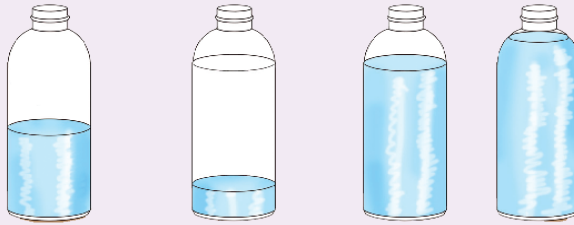
#### What you need

Plastic bottles, water, sticks, whistle.



#### What to do

1. Come up with bottles which have different sounds when they are blown into.
2. Did you come up with something as shown below?

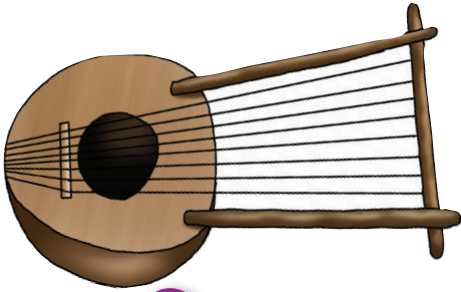


3. Blow each bottle one at a time.
  - Which one produced the lowest sound?
  - Which one produced the highest sound?
  - Arrange the bottles from the one with the highest sound to the lowest.
4. Blow a whistle then clap your hands.
  - What kind of sound is produced?
5. Compare all the sounds produced.

## Learning point

Sound is produced when items are hit, plucked, blown or shaken. The sound produced can either be high or low. This is called pitch.

- How do the items below produce sound?



A



B



### Fun corner

Using small stones and tin containers, make a shaker.



### Check your progress 3(f)

1. Match correctly

	Instrument	Produces sound when
1	Shaker	Hit
2	Drum	Keys are pressed
3	Guitar	Shaken
4	Violin	Plucked
5	Piano	Blown

## 4.1 Weather symbols and instruments



## Activity 1

In pairs



1. Talk about the pictures below with your friend.

A



B



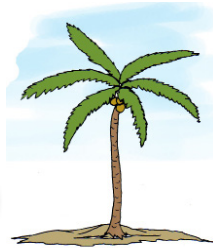
C



D



E



2. What does each picture show?
3. What type of weather is shown in each picture?

## Learning point

The weather pictures above are called weather symbols.



## Fun corner

1. Draw and colour weather symbols.
2. Stick them on a Manila paper
3. Hung the Manila paper on the notice board at the science corner.



## Activity 2

### Individually



1. Copy and fill in a weather journal on weather changes throughout the week. Use weather symbols to fill in the journal.

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Morning							
Afternoon							

## Learning point

Weather symbols are used to show the weather condition of each day.

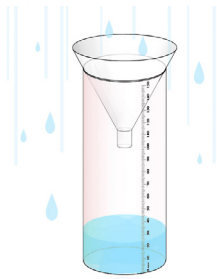


## Activity 3

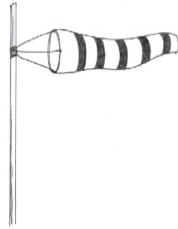
### In groups



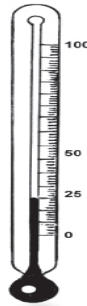
1. Talk about the instruments shown below.



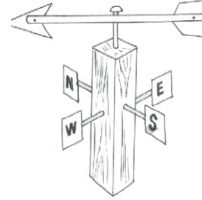
A



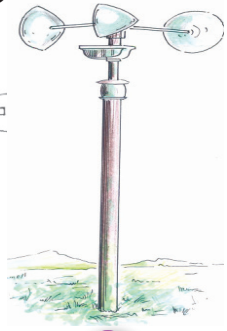
B



C



D



E

a) What are they used for?

b) Where are they found?

2. Draw and colour the weather instruments in your notebook.

### Learning point

The instruments used for recording weather are kept in weather stations.








### Fun corner

Visit a weather station near your school and identify the weather instruments.



## Check your progress 4(a)

1. This is Nyibol's weather chart. Look at it carefully.

Day	Morning	Afternoon
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		



- (a) Which day was cloudy all through?
- (b) Which day was windy in the morning and calm in the afternoon?
- (c) Which day was cloudy in the morning and rainy in the afternoon?
2. Where should you place a rain gauge?

## 4.2 Weather changes



### Activity 4

In pairs



Talk to your friend about:

- What you do when its cold or hot.
- What you do when it is raining or windy.
- How you respond to weather changes.

### Learning point

Weather conditions keeps on changing. When the weather changes, we do different activities.

## (a) Hot day



### Activity 5

Individually



1. Look at this picture. What are the people in the picture wearing?



2. Name the clothes below worn on a hot day.



A



B



C



D

3. What other things do you do on a hot day?

## (b) A cold day



### Activity 6

Individually



1. What are the people in the picture on the next page wearing?



2. What other things do you do on a cold day?

(c) A rainy day



### Activity 7

Individually



1. What are the people using to keep off rain?



2. What other activity do you do on a rainy day?

(b) A calm day

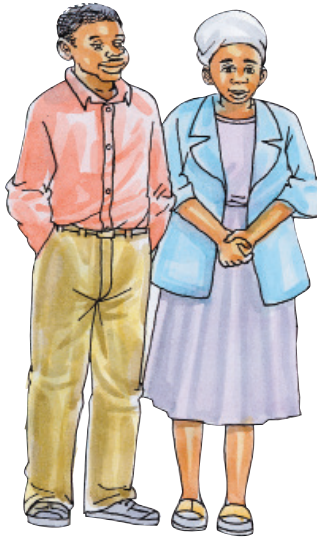


Activity 8

Individually



1. What clothes are the people wearing?



2. On a calm day we wear these clothes. Name them.



A



B



C



D



E



F



G



## Check your progress 4(b)

1. When the \_\_\_\_\_ changes people wear different clothes. (cloud, weather)
2. When it is hot I wear \_\_\_\_\_ and \_\_\_\_\_.
3. What do people wear on their legs on a rainy day?
4. On very \_\_\_\_\_ days some people remove their jackets, hoods and scarfs. (cold, hot)
5. Say if each statement is true or false.
  - (a) We drink a lot of water during hot days
  - (b) We sweat alot during cold days.
  - (c) We wear jackets during hot days.

### 4.3 How animals respond to different weather conditions

Animals too are able to sense weather changes.

#### (a) How animals behave on rainy days



### Activity 9

In pairs



1. Talk to your friend about:
  - How animals behave during the rainy season.
  - Where animals go when it is raining.

## Learning point

On rainy days, animals hide in caves, holes, nests, under shades and others go to their houses.

(b) How animals behave on a sunny day.

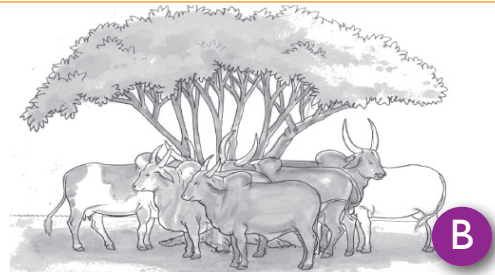
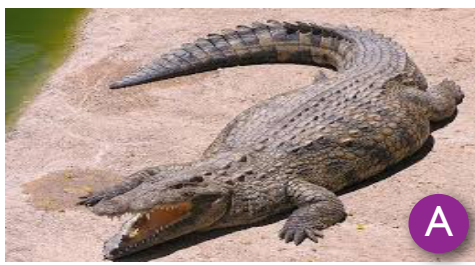


### Activity 10

In pairs



Talk to your friend about what the animals in the pictures below are doing.



- Why is the crocodile laying in the sun? Which other animals bask under the sun?
- What are the cattle doing under the shade?

## Learning point

When it is sunny, animals bask under the sun. When it gets hot they hide under a shade.

Animals also drink water from rivers and ponds to cool off. Others roll on water to cool themselves.

### (c) How animals behave on a cold day



#### Activity 11

In pairs



1. Talk to a friend about the pictures below.



A



B

- Why are the animals close together in A?
- Why do chickens have feathers on their bodies?

#### Learning point

On a cold day, animals stay closely together to produce heat.

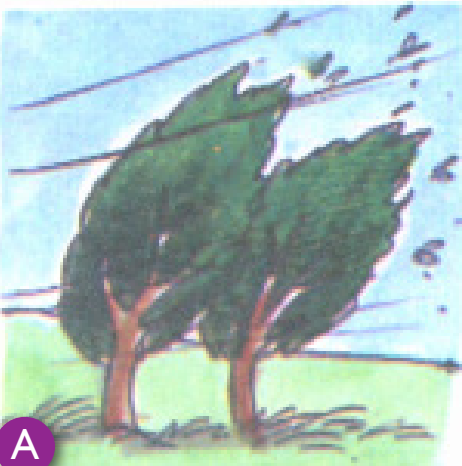
Animal bodies contain fur or feathers to protect them from cold.

## How plants respond to different weather changes



### Activity 12

Look at the trees outside during different weathers conditions. What happens to the trees when it is sunny? How about when it is windy? Now look at the pictures below. Talk to a friend. What can you see?



### Learning point

When it is windy, trees move from side to side.  
When the sun is too hot, plant leaves fold.





## Check your progress 4(c)

1. Say if these statements are true or false.
  - a. When it is too hot animals look for water to cool off.
  - b. Animals hide under shades when it is too hot.
  - c. When it starts raining animals hide under sheds.
  - d. Plants fold their leaves when it gets hot.

### 4.4 Air



#### Activity 13

Individually



#### What you need

Balloons



#### What to do

1. Take a balloon.
2. Blow air in it.
  - What has happened to the balloon?
  - What does it contain?



# Making a kite



## Activity 14

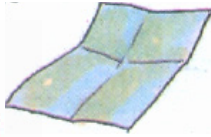
### What you need



straws or  
light sticks



thread



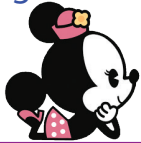
plastic paper



string



cloth  
ribbon



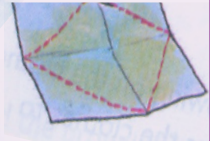
### What to do

1. Tie the two straws or sticks with a string tightly to make a frame.

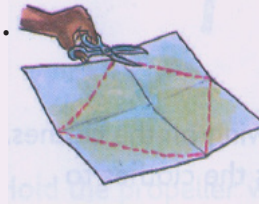


frame.

2. Draw the shape of a kite on the plastic paper



3. Cut the paper along the lines.



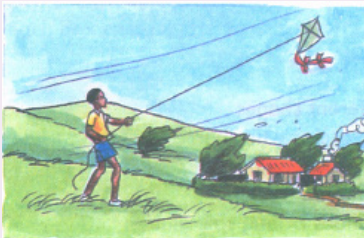
4. Put the frame on the paper. Tie the paper to the frame with the thread.

5. Tie a long string to the frame and a cloth ribbon for the tail.



kite

6. Go outside the classroom and fly your kite as shown.



What makes the kite to stay up?

## Learning point

We cannot see air with our eyes. We only feel it passing.

We also get to know there is air when we see trees and other objects around us moving from one point to another.

### Effects of moving air



#### Activity 15

Individually



1. What is happening in the pictures below?



2. What are the effects of moving air?

## Learning point

Moving air is important, it helps in:

- drying clothes.
- separating chaff from grains.
- producing electricity.

Moving air is called wind. It is also bad because it:

- destroys trees and houses.
- blows away soil.



### Check your progress 4(d)

1. Moving air enables us to \_\_\_\_\_ and \_\_\_\_\_.
2. How do we tell there is air around us?
3. Clothes dry faster when the weather is \_\_\_\_\_.



### Activity 16

Which animals are likely to fly? What makes them fly?

A



B



C



D



## Learning point

All birds fly except the ostrich. Birds fly because they have wings. Animals that do not have wings cannot fly.



### Check your progress 4(e)

1. Copy and fill the table correctly in your notebooks.

	Animals that fly	Animals that do not fly
a		
b		
c		
d		

2. What makes an eagle to fly and an ostrich not to fly?

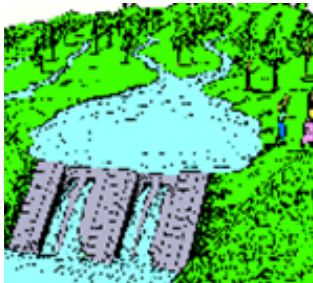
3. How many wings do birds have?

## Activity 1: In pairs

A



B



C



D



E



F



- 1) Talk about what is in the pictures above.
- 2) Where do you get water for use at home and school from?
- 3) Which source of water is found near your home?

## Learning point

- We get water from rivers, rain, wells, dams, oceans, lakes seas and boreholes.
- These are called sources of water.



Check your progress 6a

1) Name this sources of water.



This is

\_\_\_\_\_



This is

\_\_\_\_\_



This is

\_\_\_\_\_

2) Rearrange the following letters to form the correct source of water.

a) ohrleboe \_\_\_\_\_

b) inar \_\_\_\_\_

c) rrvei \_\_\_\_\_

d) ealk \_\_\_\_\_

# Importance of water

## Activity 2 In pairs

1. Talk to a friend about the use of water in the pictures shown below.



A



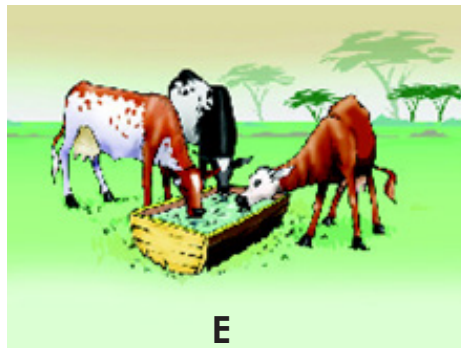
B



C



D



E

- 1) What is happening in the pictures above?
- 2) How do you use water at home?



Water is very important to us. We cannot live without water

### 6.5 Floating and sinking



#### Activity 3

In pairs

What you need

Stones, bottle tops, pencil, rubber, ruler, basin of water, piece of paper, nails, wooden blocks, coins and keys in classroom.

What to do

- 1) Put each of these objects in a basin of water.
- 2) Match what happens to the objects in the diagram below.



Items that sinks	Items that floats

## Learning point

- When an object remains on top of water, we say it is floating.
- When an object goes down into the water, we say it is sinking.

### Clean and Safe Water

#### Activity 4

In groups

Talk to your friends about water obtained from rivers, wells, dams and lakes.

- Is the water clean and safe for drinking?
- How do you make clean water safe for drinking at home?

#### Learning point

Not all clean water is safe for drinking. Germs that cause diseases are small and cannot be seen with naked eyes.



#### Check your progress 5(a)

1. Dirty water contains \_\_\_\_\_ which cause diseases.
2. Clean water is \_\_\_\_\_ and does not \_\_\_\_\_.

#### Making water clean and safe

We make water safer for drinking by boiling, decanting, filtering, adding chemicals and distilling

a) Boiling

## Activity 5

In groups



What to do

How does the process shown in the picture below make water safe for drinking?



**Caution: Handle fire and hot water with care!**

### Learning point

Boiling water kills germs that may be in the water.



Check your progress 5(b)

1. Where do you get your drinking water from when:

a. at home? \_\_\_\_\_

b. at school? \_\_\_\_\_

### 6.1 Types of soil

Soil is everywhere, in our gardens, along the road, in the school compound and even along river banks.



#### Activity 1

#### What you need

Soil from different places, sheets of paper, hand lens



#### What to do

1. Your teacher will help you to collect soil from different places such as:
  - a garden,
  - a dry river bed or a river bank,
  - along the road.
2. Place the soils from these different places on pieces of paper.
3. Look at the different soils carefully.  
Are the soils of the same colour?
4. Rub each soil between your fingers.
  - Which soil feels rough?
  - Which soil feels smooth?
  - Are the soil particles big or small?
  - Which soil has the biggest particles?
  - Which soil has the smallest particles?

## Learning point

There are three types of soil. These are loam, clay and sand.



Loam soil



Clay soil



Sand soil



### Fun corner

Read aloud.

My name is Mr Soil,  
I have two daughters and one son.  
My first born is clay,  
She is grey in colour,  
She lives near river banks,  
She has small particles.  
My second born is loam,  
He lives in the garden,  
He has medium sized particles.  
My last born is sand,  
She has large particles,  
She lives along the roads.



## Activity 2

Find out which type of soil is most common in your home area?

### Remember

We need to take care of the soil because we plant crops in

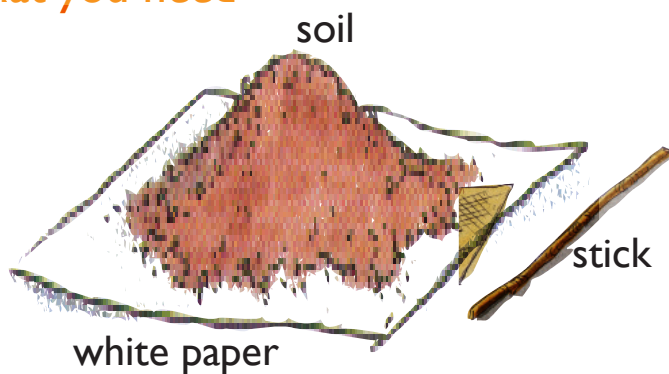
## 6.2 Soil composition

### (a) Things in the soil



## Activity 3

### What you need





## What to do

1. Collect some soil and bring it to class.
2. Put it on a piece of white paper.
3. Using a stick, turn the soil about.
  - What do you see in the soil?
4. Write down all the different things that you see in the soil.

## (b) Organic matter in soil

Where do you put waste materials at your home?



## Activity 4

### What you need

A hoe, a stick and rubbish pit



## What to do

With your teacher, visit a rubbish pit in your school or near your school.

1. Get a hoe or stick.
2. Turn the rotting rubbish in the rubbish pit.



- What things do you see there?
  - How is the smell of the rotting plants and animals?
  - What is the colour of the rotting plants and animals?
3. Take some soil from the rubbish pit and some soil from a garden and compare their:
- colour.
  - smell.

### Learning point

The things that are found in a rubbish pit are made up of dead plant and animal materials. They are called **humus**. Humus is black in colour.





## (c) Air in soil



### Activity 5

#### What you need

A clear glass, some water and a lump of soil.

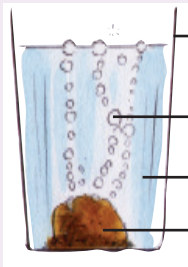


#### What to do

1. Half-fill the glass with water.
2. Gently drop a lump of soil in the water.
3. Observe what happens.

You may have noticed bubbles coming out.

- Where do the bubbles come from?
- What do we learn from this activity?



glass  
bubbles  
water  
soil

### Learning point

Soil has air. This air is needed by plants and animals.

## (d) Water in soil



### Activity 6

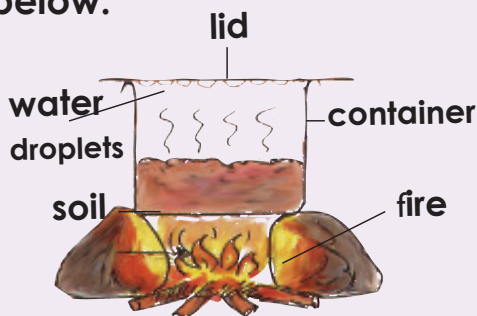
#### What you need

A container with a lid, a source of heat, sample of soil



#### What to do

1. Put the soil in the container. Cover the container with a lid.
2. Heat the sample of soil in the container as shown in the diagram below.



3. After sometime open the lid.
  - What can you see on the underside of the lid. What does this show about soil?
  - Where do the water droplets come from?
  - What do we learn from the activity above?

## Learning point

Soil contains water.



### Check your progress 6(a)

1. Why is clay soil the best for modelling?
2. Humus are \_\_\_\_\_ materials from plants and animals.
3. Some types of cups and plates are made from \_\_\_\_\_ soil.
4. Which soil is found in the garden?

## 6.3 Soil structure



### Activity 7

As a class



### What you need

Notebooks, pens and pencils



### What to do

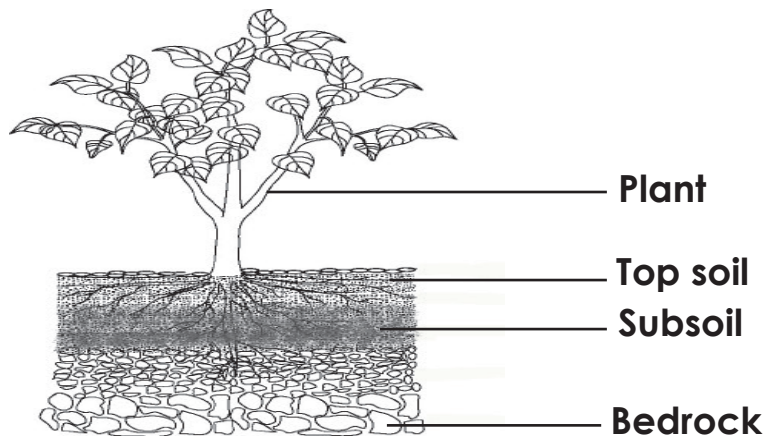
1. Your teacher will organise a visit to a dug up area or a pit.



2. Observe the soil layers.
3. Look closely at the way the soil is arranged.
  - How many layers did you see?
  - What is the colour of each layer?
4. Draw your observation in your notebook.

## Learning point

Soil has different layers arranged from the bottom to the top. The big stones at the bottom eventually form soil.



## Check your progress 6(b)

1. Between the soil particles there are spaces. These spaces are occupied by \_\_\_\_\_.
2. Before organic matter becomes humus it has to \_\_\_\_\_ first.
3. The air in the soil is used by \_\_\_\_\_.

## 6.4 Importance of soil



### Activity 8

In pairs



A



B



C

1. What is used to make the wall of house in picture A and things in picture B?
2. Where do you think plant roots get food and water from in picture C?
  - Why do we grow crops in soil?

## Learning point

- Soil is used for building and construction.
- Soil provides trees with water and mineral salts.



### Check your progress 6(c)

1. Draw two things made from soil that you use at home.
2. How do we use these kinds of soil?
  - a. Loam soil \_\_\_\_\_
  - b. Clay soil \_\_\_\_\_

We use tools and machines to make work easier. Some of these tools and machines have wheels or rollers.

### 7.1 Rollers



#### Activity 1

In pairs



A



B



Compare the amount of work to be done in picture A and B.

#### Learning point

Rollers make it easier for us to push or pull things.

## 7.2 Making and using rollers

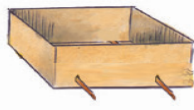


### Activity 2

#### What you need



sticks



a box



bottle caps



hammer



nail



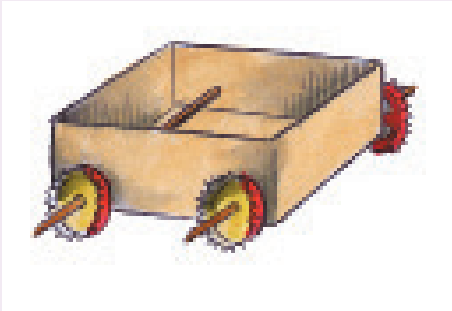
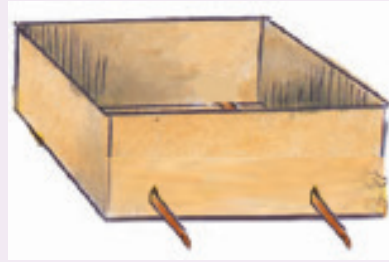
#### What to do



1. Use a nail to make holes at the centre of every bottle top. Then make four holes on the box.



- 2.** Fix the sticks into the holes on the box.



- 3.** Now, fix the bottle tops with holes on to the sticks to form a cart.

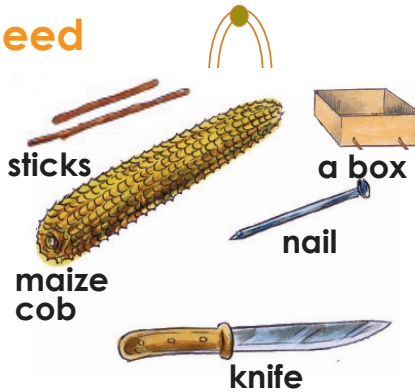


- 4.** Tie a string and pull your toy cart along as in the picture alongside.



### Activity 3

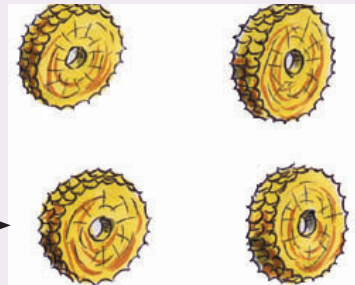
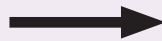
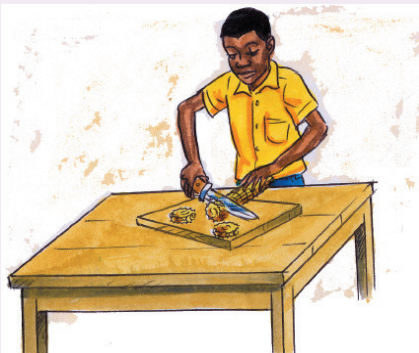
#### What you need



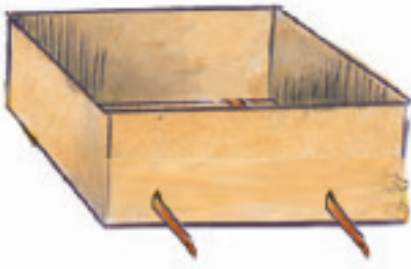
**Caution:** Be careful when using the knife. It can cut!



#### What to do



1. Cut the wheels from the maize cob as shown above.
2. Use a nail to make holes at the centre of the cut maize cob wheels. Then make four holes on the box.
3. Fix the sticks into the box as shown below.



- 4.** Fit wheels onto the sticks like this to form a cart.



- 5.** Tie a string and pull your toy cart along.



## Activity 4

### What you need



### What to do



Long wires

- 1.** Bend a long wire to make wheels as shown below.
- 2.** Bend another wire to make a steering wheel.



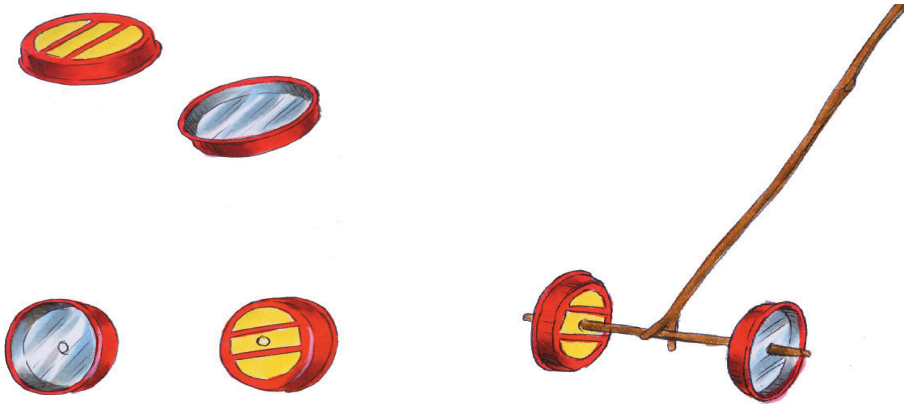
3. Use other wires to make a toy car. Fix the steering wheel onto the toy car.



4. Now, use the steering wheel to push the toy car as shown.

### Other things used to make rollers

1. We can make wheels from shoe polish tins.

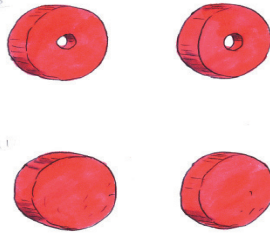


Toy car made from shoe polish tins

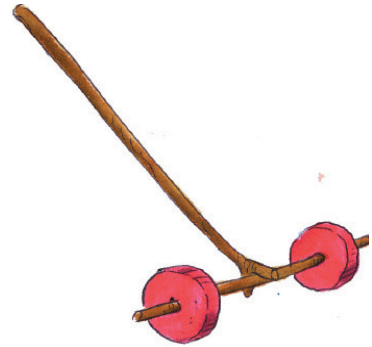
2. We can also make wheels from old slippers.



Old slippers



Wheels made from old slippers



Toy car made from old slippers wheels

3. We can also make wheels using wood or a round stick.



### Check your progress 7(a)

1. Name other things that we can use to make wheels.

## 7.3 Things that use wheels

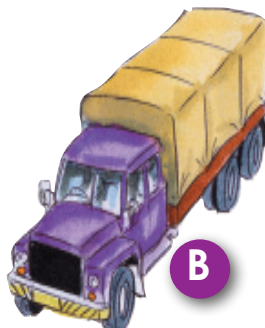


### Activity 5

1. Look at the following pictures.



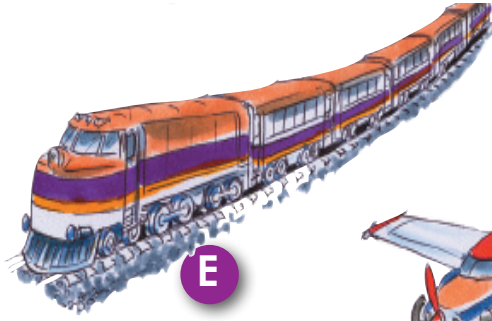
A



B



C



2. Copy and fill the table below in your notebook.

Name	Number of wheels	Use
A	4	transportation
B		
C		
D		
E		
F		
G		

## Learning point

The things in the pictures have wheels. The wheels help them to move along easily.



### Activity 6

1. Find out other things that use wheels in your home area.
2. How many wheels do they have?



### Check your progress 7(b)

1. Wheels help machines to \_\_\_\_\_ easily. (move, stop)
2. A cart without wheels is \_\_\_\_\_ to move. (easy, difficult)
3. \_\_\_\_\_ make it easier for us to move things. (Wires, Wheels)