

## **UNIT: EARTH'S WEATHER (GRADE K)**

### **DURATION: 4 Lessons**

### **OBJECTIVES**

Students should be able to:

1. Observe different types of weather - sunny, rainy, cloudy and windy.
2. Observe changes in weather patterns over a specific period of time.
3. Make weather charts, using pictures, to illustrate daily weather changes.
4. Discuss how the different types of weather affect people's activities.
5. Design and make models of things used to solve problems related to the weather.

### **PROCESS SKILLS**

Observing  
Recording  
Communicating  
Interpreting data  
Predicting

### **ATTITUDES**

Curiosity  
Integrity in recording and observing

### **MATERIALS**

Paper  
Crayons  
Pencils  
Bristol board / cardboard / manila  
Pictures of different weather conditions  
Pictures of weather symbols  
Modelling Clay

### **CONTENT SUMMARY**

- When we look outside we can observe the weather.
- Weather can be sunny, rainy, windy or cloudy.
- The clouds help us to describe how the weather will be.

- dark, low clouds can be a sign of rain, or a clear blue sky is an indication of fair weather.
- Weather can change over a period of time.
- The kinds of weather can affect what we do, the kinds of activities we take part in and the clothes we wear.
- We use sunglasses, hats and umbrellas to protect us from the sun, raincoats and umbrellas to protect us from rain. People have made all of these things to solve problems related to the weather.

## ***Suggested Activities***

### **1. Observing the Weather**

- Take students outside to observe the weather, making particular reference to the sky, clouds, sun, wind, etc. Encourage lively discussion.
- Allow students to describe the objects in the sky (sun, moon, clouds) and to identify differences and similarities between objects in the sky.
- Allow students to draw and colour a picture of the sky.
- Help students to describe the weather of the day (sunny, rainy, cloudy or windy).

### **2. Making Weather Charts**

- Let students record the daily weather over a period of time (e.g. a week). They use simple symbols to record their observations.
- Observe when the weather changes and encourage predictions of outcomes.
- Name different types of weather.
- Let students discuss various activities they take part in during certain weather conditions.
- Allow students to draw and colour pictures about the weather.

3. *Making models related to the weather*

- Make models of the objects in the sky.
- Make models of things and structures humans use to solve problems related to weather (e.g. umbrellas, sunglasses).

4. *Integration with other subjects*

- Play weather games.
- Sing or recite poems about the weather. (Music and Language Arts)
- Make models of objects (Art & Craft)

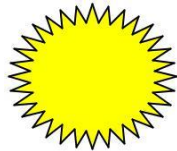
## ASSESSMENT

1. *Observing the weather*

Match the symbols to the type of weather they represent.



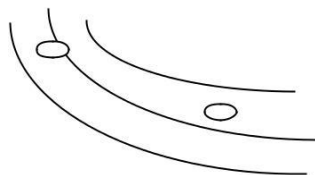
Windy



Cloudy



Sunny



Rainy

1. Circle the name of the kind of day shown in the picture.



Sun  
Rai  
Clo

2. Making Weather Charts

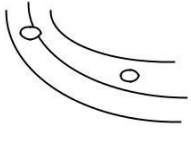

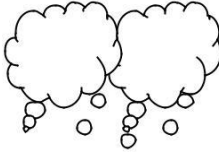
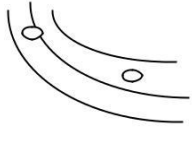
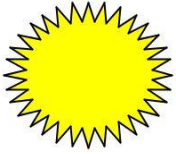
**Data Interpretation**

Study the weather chart below (or use ones made by students)

Put X on the sunny day.

Circle the cloudy day.

Colour the day. Which day was rainy and cloudy.

				
Monday	Tuesday	Wednesday	Thursday	Friday

**Oral Assessment**

Describe some activities, which can be done on a

- a) a sunny day
- b) a rainy day

Describe what we can carry or use to assist us on a

- a) sunny day
- b) rainy day

### 3. Making Models related to the Weather

Using models or pictures of structures related to the weather - umbrellas, hats, sunglasses, raincoats, students take turns holding up their structure, saying what it represents and in what type of weather it will be useful.

Students are encouraged to talk freely about their model or picture while the others students are encouraged to listen.

## **ASSESSMENT CHECKLIST**

### **Earth's Weather**

Scoring rubric indicating understanding of concepts, and development of skills and attitudes

- 1 not at all
- 2 partially
- 3 fully

**NAME OF STUDENT** .....

<b>CONCEPTS</b>	SCORE
Names different kinds of weather	
Illustrates kind of weather effectively	
States and names activities for different kinds of weather	
Associates kinds of weather with atmospheric appearance.	
<b>PROCESS SKILLS</b>	
Ability to a) observe (e.g. objects in the sky)	
b) record (e.g. using pictures and diagrams)	
c) communicate (e.g. using appropriate vocabulary)	
d) predict (e.g. the next day's weather)	
e) interpret data (e.g. on weather charts)	
<b>ATTITUDES</b>	
a) Shows interest and curiosity	
b) Integrity in recording	
c) Does assigned tasks	
d) Shares tasks/materials with others	

## **UNIT: SOLAR SYSTEM (GRADE K)**

### **DURATION: 2 Lessons**

### **OBJECTIVES**

The students should be able to:

1. Observe that day and night are different.
2. Identify natural sources of light.
3. Identify sources of light made by humans.

### **PROCESS SKILLS**

Observing  
Classifying  
Communicating  
Inferring

### **ATTITUDE**

Curiosity  
Respect for inventions  
Integrity in observing

### **MATERIALS**

pictures  
paper  
glue  
crayons  
sources of light (lamps, bulbs, flashlights etc.)

### **CONTENT SUMMARY**

1. Comparing Day and Night
  - There are differences between day and night .
  - During the day the sun’s rays light up the atmosphere.
  - Most times the night is dark.
  - The moon lights up the night sometimes.

### Sources of Light

The sun is the main source of natural light.

People have developed ways to light up the night.

In homes there are many lighting systems (such as electric lamps, flashlights, lanterns, candles, etc.).

## **ACTIVITIES**

### ***Solar System***

#### ***Comparing Day and Night***

Discuss the differences between day and night; allow students to speak about experiences.

Classify activities as those taking place in the day and those taking place in the night.

Compare the day sky and the night sky.

#### ***Sources of Light***

List the importance of the sun and moon in providing light.

Use a mirror to reflect light from the sun on to the wall of the classroom to demonstrate how the moon reflects light from the sun.

Provide various types of lighting systems found in the home (bulbs, lamps, flashlights, lanterns, candles, etc.). Discuss where, when and how these devices are used.

Discuss situations in which these inventions are used. Suggest what life would be like without these devices.

#### **Integration with other subjects**

Culture (Social Studies)

Students can guess the type of light sources used by their parents and their grand-parents. They can then find out from their parents and test their hypotheses.



Art - Drawing and making models of the day and night sky.

## **ASSESSMENT**

Comparing Day and Night

- Let students draw pictures of an activity that they can do during the day and during the night.
- Draw pictures of the day sky and the night sky.
- Draw pictures and make models of the sun and moon.

Providing artificial light

Draw pictures of different objects that can produce light. (e.g. bulb, torch, candle. etc.).

## ASSESSMENT CHECKLIST

### Solar System

Scoring rubric indicating mastery of concepts, skills and attitudes.

- 5. not at all
- 2 partially
- 3 fully

**NAME** .....

<b>CONCEPTS</b>	
Describe differences between day and night.	
Name natural forms of light during the day and during the night.	
List a variety of the different kinds of lights that people have invented.	
<b>PROCESS SKILLS</b>	
Ability to a) observe	
communicate	
infer	
3. use pictures to report results	
<b>ATTITUDES/GROUP SKILLS</b>	
c) Shows interest and curiosity	
Shows critical reflection	
Find out more about events and objects on their own	

## UNIT: EARTH'S RESOURCES (GRADE K)

### **DURATION: 8 Lessons**

### **OBJECTIVES**

The students should be able to:

Identify and name some objects found in the environment.  
Classify objects according to

shape

colour

texture

size

composition (metal, wood, plastic, paper, etc.)

living and non-living.

- ∅ Identify situations that indicate the presence of air.
- ∅ Identify evidence of dust in the air.
- ∅ Discuss how water is used in the home.

### **PROCESS SKILLS**

Observing  
Classifying  
Communicating  
Inferring

### **ATTITUDES**

Respect for living things  
Respect for the environment  
Integrity in observing

### **MATERIALS**

Objects of different colours, shapes and sizes found in the environment  
(e.g. stoppers, bottles, shells, leaves, etc.)

living things around us

pictures

paper, glue, Bristol board, etc.

## **CONTENT SUMMARY**

### **Observing and Classifying Things in the Environment**

- Many objects can be found in the environment; e.g. stones, rocks, leaves, bottles, bottle caps, wood, etc.
- Living things are also found in the environment.
- We can use our senses to describe objects found in our environment in terms of colour, texture, smell, shape, etc.

### **Living things in our environment**

- Things found around us are either living or non- living things.
- Living things can take in food, grow, reproduce (make more of their kind) and they die.

### **Air in our environment**

- Air is all around us. You cannot touch air, but you can feel it on your cheeks when the wind blows. We feel it when we breathe, we see leaves move, etc.
- Air is not always clean. There are particles of dust and many other particles in the air.
- Air can be unhealthy sometimes.

### **Water in our environment**

- We use water for many purposes in our homes, e.g. to bathe, to cook, to clean, to drink, etc.
- A variety of things can be found in our environment.
- Things in our environment are different in texture, appearance, shape, and smell.
- Things in our environment are living or non-living.
- We are surrounded by air.
- Air can be unclean and unhealthy at times.
- Water is important.

## **Suggested ACTIVITIES**

### ***Earth's Resources***

#### *Observing and Classifying Things in the Environment*

- Take students out in the school's environment to collect objects. Also encourage them to bring objects from their home environment.
- Provide an opportunity for students to describe the objects using the senses. Allow them to investigate, discovering the similarities and differences in various objects.
- Elicit from students different ways to group (or classify) the objects.
- Allow students to classify objects in many ways, e.g. colour, texture (hard, soft, smooth, rough), odour, odourless, etc.

#### *Living things in the Environment*

- Bring in a live animal to school, or take pupils to a farm if possible; or just observe living things in the environment.
- Ask students to bring in pictures of living things to make a scrapbook.
- Compare living and non-living things by bringing out their specific differences.
- Encourage pupils to regard and respect living things in the environment.
- Discuss how specific living things can be useful to human.

#### *Air in the Environment*

- Take students outside to feel the air blowing around them.
- Allow them to do breathing exercises emphasizing the intake and releasing of air.
- Allow students to experiment blowing on each other's hands, faces or as teacher feels appropriate.

Allow students to tell how they know that the wind is blowing.

Allow students to investigate glass screens, walls and other places where air is most likely to leave particles of dust. Let them suggest where the dust came from.

Water in the environment

Discuss the uses of water in the home and school.

Integration with other subjects

Mathematics	- counting and representing data in graphical form
Social Studies	- integrating 'resources' into this area in Social Studies
Art	- drawing, painting and making models
English	- reporting, discussing and listening

## **ASSESSMENT**

Observing and Classifying Things in the Environment

Let students collect and sort their own collection of things in the environment.

Let students state or draw where different objects may be found in the environment.

Give reasons why some objects are more common in some areas.

Living things in the Environment

Let students develop a scrapbook on living and non-living things.

Discuss ways of being sensitive to their pets' needs.

Students can observe and find out more about their pets on their own and share their findings with the class.

*Air in the Environment*

Let students state some areas of the school that might be most and least polluted with dust.

Let them suggest ways to investigate to check their hypothesis.

*Water in the environment*

List uses of water.

Draw pictures illustrating the uses of water.





# **UNIT: DIVERSITY AND CLASSIFICATION (GRADE K)**

**Topic: Living and Non-living things**

**Duration: 5 Lessons**

## **Specific Objectives**

Students should be able to:

- Name some living things.
- Name some non-living things.
- Classify living and non-living things.

## **Process Skills**

Observation; Classification; Inference

## **Materials**

School's Environs (surroundings) or Field/Trip. Charts of Living Things and Non-Living Things

## **Content Summary**

Scientists have been making and continue to make classifications of various objects and living organisms. Classification contributes to organized information and makes learning easier.

In our homes and schools we are involved in grouping things. This is an important way of life. Therefore students at an early stage need to be able to classify or group things around them and develop their skill of observation.

Students live in an environment made up of living and non-living things and should be knowledgeable about living things being plants and animals. They need to develop the skills which will assist them in distinguishing between plants and animals.

Living things – have life: (feed, have young ones) e.g. plants, animals

Non-living things – have no life: e.g. stone, water

Living things are either plants or animals. Non-living things can be grouped as solid (rocks), liquid (water), or gas (air). Non-living things can be either useful or of no use to us.

## Suggested Activities

### Activity 1

- Take students on a walk around the school's grounds to observe living and non-living things.
- Use these observations to stimulate the discussion on living and non-living things.

### Activity 2

- Students collect pictures of living and non-living things and make a 'Portfolio' of Pictures and Names.

### Activity 3

Show a video of animals in their natural environment, Zoo etc.

### Activity 4

Students play a game where some imitate animals and other students try to identify the animal.

### Activity 5

Students identify living things as either plants or animals. Use flashcards marked animals or plants and allow students to place them beside each living thing.

Students classify non-living things as solids, Liquids and gases.

Students classify non-living things as useful or not useful.

## Assessment

Stick pictures of living and non-living things correctly on the chart.

Living Things	Non-Living Things

## **Topic: There is a wide variety of animals**

### **Duration : 2 Lessons**

### **Specific Objectives**

Students should be able to:

Classify animals on the basis of their size, body covering, and the food they eat.

### **Process Skills**

Observation

Classification

Inference

### **Materials**

Charts of Animals  
Video Presentation of Animals  
(Natural Habitats, zoo, etc.)

### **Content Summary**

Some animals are similar in size, some have the same body covering – hair/fur, scales, feathers. Some animals eat similar foods while others eat different foods. Some eat grass/plants, some eat other animals, others eat both plants and animals.

Some groups would overlap – Birds are covered with feathers, but some eat seeds, while others eat flesh.

Some flesh-eating animals are covered with fur, some with scales and some with feathers.

### **Suggested Activities**

Let students group cut-out of animals under size, body covering and food they eat.

Use a Worksheet with the various columns:

Animals/ Size/ Body covering/ Food they eat and have students group and indicate their size, body covering and food they eat.

<b>Animals</b>	<b>Size</b>	<b>Body Covering</b>	<b>Food They Eat</b>

### **Assessment**

Let students group animals and explain the basis of their grouping.

## UNIT: ECOSYSTEMS (GRADE K)

### Topic: Animals/Pets

### Duration : 2 Lessons

### Specific Objectives:

Students should be able to :

- Name and identify some common pets.
- Identify the different foods for different pets.
- Describe and demonstrate appropriate ways of treating their pets.
- Identify precautionary measures that should be employed to maintain safety to self, others and environment and the pet itself when a pet is present.

### Process Skills

Communicating (Listening, Oral expression, Dramatizing), Observing

### Materials

Pictures (*of children's pets*)

Video (*pet care*)

Worksheets (*match pets with their preferred foods and habitats*).

Leash

Hair brush

Water (feeding bowls)

Grass

Dog

Food container

Bird cage

### Content Summary

Pets are animals that are kept in domestic situations. Investigating different animals that are kept as pets allows young students to learn about the needs of animals, such as food, shelter and protection. Improper handling (grabbing, teasing, beating, etc.) of pets can be harmful to the person or pet involved. An animal's home is called its habitat.

## **Suggested Activities**

- Bring their pets, or a model/picture of a pet and talk about them. Have discussion about caring for pets.
- Go on field trips to veterinary clinic and/or humane society for animals.
- Interact with invited resource person (e.g. veterinarian) to learn more about care for and safety around animals.
- View video(s) on pet care.

## **Assessment**

Divide class into small groups and let students perform role playing to demonstrate proper care for their pets.

Show pictures of pets and let pupils identify the animals.

Worksheet (*Match pets with their preferred food and habitats*)

## **Topic: Plants**

### **Duration: 2 Lessons**

### **Specific Objectives**

Students should be able to:

Observe a plant and identify the main parts.

Classify plants (size, shape of leaves, etc.)

Name the process of initial seed growth (germination).

State in simple terms the conditions necessary for seed growth.

### **Process Skills**

Observing, Classifying, Communicating, (Discussion, Oral expression), Manipulating, Investigating, Predicting, Recording

### **Materials**

Plant samples

Pictures of plants

Worksheet

(diagram of plant for matching plant parts to their respective names).

Transparent Containers

Tissue paper

Seeds

Water

Crayons

Drawing paper

### **Content Summary**

Plants make up a part of the environment. Some common examples are beans, banana, mango, hibiscus, pumpkin and coconut. There are many similarities and differences among plants. These include size, colour and shape. Some plants can be grown from seeds. The initial growth of a seed (from seed to seedling) is called germination. Conditions such as warmth, moisture and air are necessary for seeds to germinate.

### **Suggested Activities**

Go on nature walk to observe plants. Collect samples and talk about them. Describe plants; identify main parts.

- Ø Examine a variety of pictures of plants and sort them according to features.
- Ø Listen to the poem, "In the heart of a seed".
- Ø Prepare transparent container with tissue and set 2 or 3 seeds and discuss growth (*growth may be recorded pictorially*).
- Ø Prepare seeds for germination, this time controlling the conditions (no water, no air, refrigerate) and observe whether or not they grow.

### **Assessment**

- Ø Give students work sheets with pictures of plants on which they will match each plant part to its name.
- Ø Give students a set of pictures of plants to sort by specified features.
- Ø Elicit from students the name of the process of initial growth and conditions needed for seeds to grow.
- Ø Let students draw a plant and label specific parts.



## **Topic: The Senses**

### **Duration: 2 Lessons**

### **Objectives:**

Students should be able to:

Name and identify each sense organ.

State what stimulates each sense.

Identify different stimuli that affect the senses.

### **Process Skills**

Observing, Communicating, Observing, Manipulating, Predicting,

### **Materials**

Charts/pictures of sense organs  
Instruments and other sound-making objects  
Light/dark box (shoe box)  
Recorded familiar sounds  
Fruits  
Objects of various textures  
Scented materials

### **Content Summary**

We use our senses to detect what is in our environment. There are five senses: seeing, hearing, smelling, touch/feeling and tasting. Eyes are for seeing, ears are for hearing, nose/nostrils for smelling, skin for feeling or touch, and the tongue is for tasting.

### **Suggested Activities**

Sing songs such as "Watch your eyes" (to reflect different sense organs).

Participate in chart/picture reading and discussions to highlight sense organs and their respective stimulus.

Carry out experiments:

light and dark box

making sounds (using objects or instruments)

iii) 'Feelie' Fun box

Discuss characteristics of different stimuli, eg. sweet vs sour foods.

Go on observation walk with teacher and afterwards discuss stimuli observed/experienced: sounds heard, texture of objects, etc.

Play games (eg. guess what makes that sound; guess what fruit is this?). Students use senses of smell and touch to suggest answer.

## **Assessment**

Ask students to state the 5 sense organs and stimuli for each sense.

Let students describe the difference between looking in the dark and looking when there is light.

Ask students to identify a range of familiar sounds, smells and tastes.

Ask students to identify sources of sounds.

Assess correctness/appropriateness of responses to questions during activity sessions.

## **Topic: Conserving our Water Resources**

**Duration: 2 Lessons**

### **Specific Objectives**

Students should be able to:

State two different uses of water.

Give a simple definition of drought and discuss its effect.

Discuss some ways in which water may be polluted.

Identify ways in which water may be conserved.

Appreciate that clean water is very important to human life and participate in its conservation.

### **Process Skills**

Observing, Communicating (Oral expression, Listening, Discussing)

### **Materials**

Distilled water

Transparent containers

Video (*water pollution/contamination*)

Worksheets (pictures of water being wasted or conserved, and rainy season vs. drought)

Crayons

### **Content Summary**

Water is one of the most important natural resources. Care must be taken to conserve this resource, by preventing its contamination and/or wastage. Water may be conserved by recycling/reusing it and by setting limits on its consumption/usage.

## **Suggested Activities**

Students will do the following

Examine a sample of distilled water and discuss their findings (colour, smell, taste).

Discuss ways in which water is used (use pictures to stimulate).

View pictures/video showing water being contaminated/polluted and discuss the ways in which water is made unclean.

View and compare pictures of environment during rainy season vs. drought.

Learn poems or jingle about water conservation.

Talk about the effects of drought on everyday life and suggest ways in which they can help to conserve water.

## **Assessment**

Ask students to give the main uses of water.

Use worksheets with pictures and let students indicate whether water is being wasted or conserved.

Elicit from students the meaning of drought and how it affects everyday life.

Let students make rules about water conservation.

## **Topic: Habitats of Animals**

### **Duration: 3 Lessons**

### **Specific Objectives**

Students should be able to:

Identify places where animals live.

Observe homes of different types of animals.

Determine how each home satisfies the needs (e.g. food, shelter, protection) of the animals that live there.

Compare human vs. animal homes for similarities and differences.

### **Process skills**

Observing, Communicating (Oral expression, Oral communication, Illustrating/drawing), Classifying

### **Materials**

Worksheets (pictures of common animals and their habitats-matching)  
Pictures (animals and habitats)  
Objects ( from habitats of animals)

### **Content Summary**

The habitat of an animal is where it lives. Animals live in different places (land, sea, swamp, river, on trees, in nests, holes in the ground, etc.). Humans usually build houses in which to live.

### **Suggested Activities**

Walk around the school compound and observe homes where animals live. For each habitat, discuss how it satisfies the animal's needs.

Draw a picture of a home they observe and describe what it illustrates.

Sort objects presented, to them into those that make up human homes and those for animals homes (objects such as dolls' furniture, bits of grass, leaves, etc. may be presented to children). Discuss any objects which may be used in both types of homes.

Discuss other similarities and differences between human vs. animal homes.

Go on a field trip to a wetland (e.g. mangrove swamp, pond, etc.) and observe the animals that live there.

## **Assessment**

Prepare a worksheet with pictures of the animals studied and pictures of their habitat (e.g. spider & web). Let students determine which habitat belongs to which animals, and then colour them with the same crayon. Use a different colour for each pair.

Show students a large picture of a habitat (or draw this on the board) and have them discuss how this habitat provides what the animal needs. Include habitat for humans.

## **Topic: Pollution + Care/Respect for Habitats**

### **Duration: 3 Lessons**

### **Specific Objectives**

Students should be able to:

1. Distinguish between actions that harm habitats/the environment from those that preserve it.
2. Demonstrate how one would care for habitats/ the environment.
3. Identify and predict actions that could harm named habitats/the environment.

### **Process Skills**

Communicating, Predicting,

### **Materials**

Glue  
Paper  
Seedlings  
Soil  
Plant pots

### **Content Summary**

Some actions are harmful to habitats/the environment while others are not. People should avoid the harmful practices in order to preserve habitats/the environment.

### **Suggested Activities**

1. Role-play 'A day in the life of a Tree'; pretend they are trees and act out the emotions they feel in response to certain incidents (e.g. watering, cutting down, garbage thrown nearby, hurricanes).
2. Discuss/review how to care for plants and animals (according to their needs) and predict what will happen in the absence of proper care.
3. Demonstrate the following through group work; plant two seedlings and leave another on the counter. Care for one of the planted seedlings but not the other. Observe them at the end of a specified time and discuss observations.

4. Gain a greater appreciation of what litter is by collecting different types of litter from school compound. Glue samples from collection to a blank sheet of paper. Each student names one type of litter found until every type has been listed. Record answers on board. Refer to list and ask students to identify sources of litter.
5. Discuss how litter may be harmful to environment (include plants, animals, people and physical environment).

## **Assessment**

1. Prepare skit where students will perform different roles to show effect of littering and other types of harmful practices on the life of a specified plant, animal and on humans.
2. Ask students for suggestions for preventing littering.



## **Topic: Interactions Between Plants and Animals**

### **Duration: 2 Lessons**

### **Specific Objectives**

Students should be able to:

1. Identify some ways in which plants and animals depend on each other (e.g. feeding, pollination, shelter, protection).
2. Describe how some named organisms depend on one another.

### **Process skills**

Observing, Communicating (Oral expression, Discussing, Listening)

### **Materials**

Video/posters (plant and animal interaction)  
Worksheets (to assess plant and animal interaction-matching)  
Drawing Paper  
Crayons

### **Content Summary**

Plants and animals interact with each other within the environment and are interdependent.

Green plants make their own food using energy from the sun. Animals do not make their own food. Plants and animals depend on each other. Animals feed on plants; they also get protection/shelter from plants. Plants benefit when animals help to scatter their seeds and pollinate flowers.

### **Suggested Activities**

1. Go on field trips/walks and observe animals and plants in the environment; teacher elicits from students any interactions that are taking place.
2. Watch video/posters illustrating specific examples of plants/animal interactions. Discuss what was seen in video/posters and give other examples that they may know.

## **Assessment**

1. Complete worksheet with pictures of some animals and the plants with which they interact. Match animals to the plants with which they are typically associated.
2. Give an oral account of how known animals and plants depend on each other.
3. Make a drawing of a plant and animal helping each other; let students orally describe what they have drawn.

## **UNIT: STRUCTURE AND FUNCTION (GRADE K)**

### **Topic: What are the Main External Parts of Plants and Animals?**

**Duration: 6 Lessons (30 minutes each)**

#### **Specific Objectives**

Students should be able to:

Name the main external parts of animals (vertebrates and selected invertebrates such as insects, spiders, crabs).

Identify the main external body parts of various animals and their functions (include sense organs).

Name the main external parts of plants (roots, stems, roots leaves, fruits, flowers).

Identify the roots, stems, leaves, fruits and flowers of plants.

#### **Process Skills**

Observation  
Communication

#### **Materials**

Pictures of plants  
Pictures of animals  
Live animals  
Stuffed animals (toys)  
Live plants  
Story Books

#### **Content Summary**

- Our bodies have different parts. Each part has a special function.
- Animals also have different body parts. Body parts help these animals to carry out certain functions.  
Plants are made up of different parts

## Activities

- Ask students to identify the parts of their bodies. Let them say the name of the parts. Encourage them to state the use(s) of each part they can identify and name.
- Show students live specimens/pictures/photographs/stuffed toys of different animals. (Use animals students should be familiar with). Let students talk about the animals and identify and name the different parts of the body.
- Take students outside. Let them identify the plants/trees in the school yard. Encourage them to talk about the parts of plants. Help them identify the external structures of plants.
- Read stories to children of animals and plants which look at body structures and their functions.

### Sample Activity

Look at Me. I can name the parts of my body (eyes, ears, nose, mouth, hand, arm leg, foot).

I use my eyes to see things around me. (Repeat for structures listed above).

Look at the dog. I can see (identify and name the external parts). (Repeat for other examples of vertebrates).

Look at the butterfly. I can see the wings. (I can see the legs, I can see the eyes).

The butterfly uses the wings to fly. (The legs for walking, etc) (Repeat for other selected invertebrates).

Look at the Mango tree/coconut tree/ banana plant (or any other common plant). I can name the parts (roots, stem/trunk, leaves, flowers and fruits).

## Assessment

Orally, let students identify and name the parts of their body. Let them tell you the function of each part identified.

Show students pictures of animals and let them tell you the names of the parts and the functions of the parts identified.

Let students identify and name the parts of a plant.

## UNIT: ENERGY (GRADE K)

### DURATION: 2 Lessons

### OBJECTIVES:

Students should be able to:

- Identify a variety of moving objects in the environment.
- Indicate the direction in which various objects move.
- Demonstrate and identify body movements.

### PROCESS SKILLS

Observing, Classifying, Communicating

### MATERIALS

Living organisms in the environment, toys, vehicles, household appliances, students' bodies

### CONTENT SUMMARY

There are many objects in the home, school and surroundings that move (appliances, toys, vehicles, animals)

Objects move in different directions (up/down (e.g. a yo -yo), forward/ backward (e.g. a toy car), circular/rotational e.g. a top or the blades of a fan), back and forth (e.g. a swing)

Several parts of our bodies can move (hands, fingers, legs, lips, jaws, eyes, head etc).

### SUGGESTED ACTIVITIES

- Take group on a walk around the school grounds to **observe** moving objects and living things.
- Use these observations to stimulate class discussion. Let the students name the objects that they saw moving. Let them say the direction of movement (up, down etc.).
- Let students identify things and objects that cannot move on their own.
- Students groups things as those that move and those that do not (Classification).
- Play game in which each student gets an opportunity to move any part of his/her body. The rest of the class follows after the moving body part has been identified.

- Let students play with toys (tops, wind-up cars, etc and state the type of motion (circular/rotational, backward/forward, etc).
- Teacher demonstrates movement using an electric fan, a blender, etc. Students should state the type of movement observed.

## **ASSESSMENT**

Let students identify objects that move (from their earlier observations) and name any other objects they know can move.

## **DURATION: 2 sessions**

## **OBJECTIVES**

Students should be able to:

1. Design and make paper aeroplanes and boats.

## **PROCESS SKILLS**

Manipulating, Evaluating

## **SUGGESTED ACTIVITIES**

Distribute a sheet of 8" X 11" paper to each student and let students use it to make an aeroplane. They can add colour to their aeroplanes.

Take students outside to fly their planes.

Distribute a similar sheet to each student and let the students make boats.

Take students outside and let them place boats in large container with water.

## **ASSESSMENT**

Give students encouraging feedback about their efforts. Allow them to show their aeroplanes and boats to the class and talk about them.

## **DURATION: 1 Lesson**

## **OBJECTIVES**

Students should be able to:

- Demonstrate how sounds can be made.
- Identify objects or events in the environment by the sounds they make.
- Identify sounds in the immediate environment.
- Describe sounds by using appropriate words.

## **PROCESS SKILLS**

Observing, Communicating, Manipulating

## **MATERIALS**

Musical instrument (drums, recorders, guitars, horns) other objects (sticks, cans, combs, flamboyant pods, balloons).

## **CONTENT SUMMARY**

Sounds can be produced in different ways;  
Striking – drums, palms of the hand, steel pans  
Plucking – strings, guitars  
Blowing – flute, mouth organ, whistle  
Squeezing – horns  
Shaking – pods, shak-shaks

Many objects in the environment produce sound, For example:-  
horns of vehicles  
engines of vehicles  
Animals (birds, frogs, dogs. etc.)

Sounds have special characteristics. They may be:

High or low  
Loud or soft

## **SUGGESTED ACTIVITIES**

Distribute the materials around the class or let students go to a collection point to choose them.  
Ask students (in turn) to use what they have to make selected sounds.



Ask students to close their eyes and listen to sounds around the school.

Let them try to imitate the sound and identify the object making the sound.

Teacher demonstrates soft/loud and high/low sounds using voices, beating drums, plucking strings etc. Let students use words such as soft/loud, high/low, etc. to describe the sounds. Then students are asked to make a particular sound (soft/loud, high/low).

## **ASSESSMENT**

The teacher goes out of students' view, uses an object or body part to make a sound, then emerges and asks students to identify the source.

Present students with sound-making objects/instruments and /or pictures of these things and let students group them according to the way the instruments/objects produce sound.

Let students design and make an instrument.

# UNIT : FORCES, MOTION AND STRUCTURES (GRADE: K)

## TOPIC: FORCES

## DURATION: 2 Lessons

## OBJECTIVE:

Students should be able to:

Demonstrate pushes and pulls.

## PROCESS SKILLS

Observing, Manipulating, Problem solving, Classifying

## MATERIALS

Balls, toy cars, trucks etc., doors, windows, furniture, string, pictures of objects.

## CONTENT SUMMARY

- Pushing and pulling are forces that move objects/things.

## SUGGESTED ACTIVITIES

Begin lesson in the vicinity of a door. Have several students demonstrate closing and opening of the door. Question students in an effort to introduce the concepts of push and pull. Use simple questions: What did Tom do to the door to get it open? What did Mary do to the door in order to close it? Have several other students demonstrate pushing and pulling.

Place a large ball on a marked spot and have students demonstrate how they would move the ball to another point in the room (kicking, rolling, throwing, and dragging). Let students state whether the action was that of pushing or pulling. Discuss what happened to the ball, in each case, when it was pushed or pulled (it moved).

Ask students for examples of common objects that we push or pull to produce movement. A picture chart may be used as stimulus material at this point. Such objects as a baby stroller, wheel barrow, cart,

scooter, church bell can be included on chart. Engage students in role playing and have them imagine moving the various objects. Let them identify the type of movement involved (push or pull).

Involve students in a tug-of war activity. Which side's pull is bigger?

## **ASSESSMENT**

Create a situation in which students are required to move an object from one point in the class to another without kicking, lifting or moving directly with hands, legs, or any other body part. Provide them with the object, a piece of string, a piece of stick, pieces of tape, etc. This may be done as a team or individual activity.

## **TOPIC: USING FORCES**

### **DURATION: 2 Lessons**

### **OBJECTIVES**

Students should be able to:

- Give examples of situations where force is used.
- Identify forces used to create movement in given situations.

### **PROCESS SKILLS**

Observing, Classifying, Manipulating

### **MATERIALS**

Picture in which objects are being pushed or pulled, hammer, nails, pieces of board, screws, screw driver, food storage containers, bottled drink, opener.

### **CONTENT SUMMARY**

- Pushing and pulling forces are used in many situations in our lives.
- We push or pull on a door to close it.
  - We push on screws to secure them.
  - We push (pound) on nails to secure them and pull on them to have them removed.
  - We push on a bicycle pedal to make the bicycle move.
  - We pull on a string to move some toys.
  - We push a soccer ball (kick it) to move it.
  - We pull on a bottle stopper to remove it.

### **SUGGESTED ACTIVITIES**

Display the hammer and nail and quiz students about their use. Introduce the pieces of board into the scenario then **demonstrate** the use of the hammer and nail. Engage students in discussion about the force used (push or pull). Ask students for directions as to what to do in order to remove the nail from the pieces of wood. Remove nail with hammer and then conduct another discussion as to the force used (push or pull).

Conduct similar activities using the screw and screw driver, the bottled drink and the opener, the food storage container. Involve students in the safer activities.

Ask students for examples of situations in which a push force or a pull force is used.

Display a set of pictures which suggest some form of movement and let students identify the force (push or pull) that is being used. Examples of questions may include: What is happening in this picture? How is the person able to move the **object**? Is that a push force or a pull force? What would happen if a push/pull force was used instead?

## **ASSESSMENT**

Divide chalkboard into two columns: a push column and a pull column. Display pictures and let students place each picture in the correct column on the chalkboard.

## **TOPIC: STRUCTURES**

### **DURATION: 3 Lessons**

### **OBJECTIVES**

Students should be able to:

- Identify structures in our everyday lives.
- State the functions of these structures.
- Classify structures according to size and shape.
- Classify structures as natural, human-made or animal-made.
- Make models of structures from materials provided.

### **PROCESS SKILLS**

Observing, Classifying, Designing

### **MATERIALS**

Classroom furniture pictures of buildings, bridges, vehicles, fences, furniture, etc., structures in the community, pieces of cardboard, Bristol board, drinking straws, tape, play dough.

### **CONTENT SUMMARY**

- There are many different structures in our environment.
- Some structures occur naturally while others are human or animal-made.
- Natural structures include stones, rocks, and mountains.
- Animal-made structures include wasp nests, spider webs, and bird nests. Human-made structures include houses, bridges, furniture, vehicles.
- We build structures to make our lives more comfortable.
- £) Bridges are built to make it easier and safer to cross rivers.
  - Houses are built to protect us from the weather.
    - Furniture is built to make us more comfortable in our home, school and work place. Chairs support our weight while we sit. Beds support us while we sleep. The space savers support our television set, VCR's, etc.
    - Walls are built for security (*fences*) and support (*retaining walls*).
    - Electricity poles/pylons are made to support electrical wires and street lights.

## **SUGGESTED ACTIVITIES**

Ask students to identify the structures within the classroom (desks, chairs, tables, cupboards, shelves, etc). Pictures can be used to compile list on board. Move to the outside and let students identify other structures in their environment (extend chalk board list). Engage students in discussion about the use of the structures listed.

An alternative start could take the form of a nature walk in the community. Students would be able to observe and appreciate the many different structures in their community: buildings, such as churches, schools, houses; bridges, fences, retaining walls, electric poles, rocks, stones, etc. Engage students in immediate discussion to bring out such concepts as origin and use. Compile list for further discussion.

Let students examine birds' nests, snail shells, spider webs and other structures made by animals or found in animals. Let them talk about these structures and say how the animals use them.

Engage students in a discussion about differences between selected structures. (How were they made? How are they different? Why are they different? What would happen if the small ones were large and the large ones were small? etc.).

Have students classify the objects (picture representations).

Challenge students to make a structure and to say what it could be used for. Provide them with materials (paper, match boxes, empty containers, string, straw, crown corks, play dough, etc.), and let them make a structure.

## **ASSESSMENT**

Provide students with opportunities to talk about the structures they made. (What it is made from. What it is used for. etc.).

A game of musical chairs may be used to reinforce the uses of the structures dealt with in lesson. Label each player to represent a structure. As each player (structure) gets out let students talk about what our lives would be like without that structure.

## UNIT : MATTER AND MATERIALS (GRADE K)

**DURATION: 6 Lessons (30 minutes each)**

### OBJECTIVES

Students should be able to:

- Identify and describe objects according to properties such as colour, size, shape and texture.
- Distinguish between objects and the materials from which they are made.
- Choose materials to make an object of their choice.
- Make an object using the materials they chose.

### PROCESS SKILLS

Observing, Classifying

### MATERIALS

Bottles, jars, cans, toys, shoes, bags, materials in the environment (home, school, business), materials to make objects like paper fans, etc.

### CONTENT SUMMARY

- There are many objects and materials found in the home, school, supermarkets and the environment which are made from plastics, glass, metals, wood, paper.
- Objects may have different colours (red, blue, green etc.), shapes (square, triangular, round, rectangular etc), sizes (big, small, etc.) and textures (smooth or rough, soft or hard).
- Certain materials are better than others for making a specific object.

#### *Vocabulary*

Colour: blue, green, etc.

Shape: round, square, triangular

Size: large than, smaller than, small, smaller, smallest

Texture: rough, smooth



## STUDENT ACTIVITIES

- Let students collect empty containers such as bottles, jars, tins, cans, and toys etc. Provide/collect sheets of paper, manila, newspapers, and books.
- Students are asked to name the objects and say what each is made from (e.g. object book – made from paper).
- Students classify collection of objects according to the material they are made of (plastics, metals, paper, etc.).
- Sort plastic bottles according to shapes, colour, size, and texture. N.B. (sorting is done for various types of materials collected). Help students to develop the appropriate vocabulary to describe the properties.
- Present students with containers/bottles with wide/narrow mouth and let them suggest reasons for the different shape/size.
- Activity can be repeated with balls of different sizes.
- Let students suggest reasons why balls are round and not triangular or rectangular.
- Let students suggest something they would like to make (a fan, a pencil holder, an animal etc.). Ask them which of the materials on display they would choose.
- Let students talk about what they would make, choose their materials and construct their object. *(Some students may need help to decide on their choice. In this case the teacher can have a more structured activity in which the children are given instructions to make a particular object, such as a kite, a windmill, pot holders, etc.).*

## ASSESSMENT

- Riddles: Teacher gives students clues: students should state what the object is. For example: I am round, I bounce high, I am made of rubber. What am I?
- Teacher assesses students' efforts when they make their objects. Let students show and tell about their object and how it is to be used.
- Teacher provides students with worksheet containing pictures of items of different colours, size and shape and ask students to classify the items.

### Integration:

Art- colour

Mathematics-shapes

Literacy-spelling, vocabulary



