

# UNIT : MATTER AND MATERIALS (GRADE 1)

**DURATION: 3 lessons**

## OBJECTIVES

Students should be able to:

- Classify objects as being made of plastics, metals, glass, paper and wood (properties)
- List some properties of plastics, metals, glass, paper and wood
- List some uses of plastics, metals, glass, paper and wood.
- Suggest reasons for the choice of material from which objects are made.

## PROCESS SKILLS

Manipulating, Observing, Classifying, Inferring and Communicating.

## MATERIALS

A variety of objects in each category of materials: e.g. several different objects made of metals, several objects made of wood, several objects made of plastic etc.

## CONTENT SUMMARY

- Objects are made from different materials, wood, plastic, clay, metals, glass, rubber, etc.
- Each of these materials has particular properties, e.g. plastic is smooth, comes in many colours, some types break and some types do not: some plastics bend and others do not; metals are usually shiny, hard, make a clanging sound, etc.
- The use to which the object is to be put determines the materials from which it is made. (e.g. Pots are made from metals because they have to withstand heat. Some balls are made from rubber because we need them to bounce).

## STUDENT ACTIVITIES

- Present students with a group of objects made from one of the materials and have them examine the properties of the group (appearance, texture, ability to bend easily, transparency, etc.)

- 📁👉 Let students continue to investigate the different materials and record the properties by ticking in the appropriate column of a table (hard, soft, breakable, difficult to break, easy to bend, etc.).
- 📄👉 Let students compare the same object made from different materials, for example a plastic cup and a glass cup. Let them tick in the properties on a table such as:

	Can break	Cannot break	Can see through	Cannot see through Etc.
Plastic cup (Drawing)		<b>v</b>		<b>v</b>
Glass (Drawing) etc	<b>v</b>		<b>v</b>	
Plastic lunch kit				
Pot made of plastic				

- Let students say what each object is used for and under which circumstances it is better to use one or the other
- Let students make up stories: A lunch kit was made of paper. A lunch kit was made of glass, Mum’s wooden pot , etc. They read/relate their stories to the class.

## ASSESSMENT

1. Teacher sets up stations with objects made of different materials. Students go to the stations and identify the object and the material from which it is made.
2. Teacher asks students to name objects with different properties. For example: Name an object that is transparent and can break; what material is it made of?
3. Students can prepare their Materials scrap book with pictures of objects made from each type of material (metal, plastic, clay, paper, glass etc).
4. The guessing game. Let students guess what an object is from information given about that object, such as: I can have any colour, I can be worn, I am made of fabric, I can have pockets, and I have two legs. What am I?

## **UNIT: FORCES, MOTION AND STRUCTURES (GRADE: 1)**

### **TOPIC: BUILDING STRUCTURES**

### **DURATION: Lessons**

### **OBJECTIVES**

Students should be able to:

1. Identify the materials from which selected structures are made.
2. Suggest reasons for the choice of materials used.
3. Classify structures on the basis of the type of materials used.
4. Identify the shapes of and within selected structures.
5. Design and build a structure that will withstand a predetermined mass.

### **PROCESS SKILLS**

Observing, Manipulating, Problem solving, Classifying, Designing

### **MATERIALS**

Picture chart, pieces of wood, cardboard, paper, tape, masses/stones

### **CONTENT SUMMARY**

- Structures are built from a variety of materials: wood, metals, concrete, plastic, etc.
- The use to which the structure is to be put influences the type of material used.
- Some materials are stronger than others. For example, wood is stronger than card board, steel is stronger than wood and plastic, concrete is stronger than wood.
- A variety of shapes can be identified in structures. These shapes include circles, arches, triangles, and rectangles. These shapes help to make the structures strong and functional.

## **SUGGESTED ACTIVITIES**

1. With the help of students make a list of structures within the classroom (desks, chairs, tables, cupboards, boxes, etc.); within the community (houses, schools, bridges, motor vehicles, etc.). A picture chart may be used as stimulus material.
2. Engage students in discussion about the materials from which the structures are made and let them classify the structures on this basis. Have further discussions on the reasons for the choice of materials used to make selected structures. For example, why are desks, chairs and tables made of wood, plastic or metal instead of concrete, and instead of cardboard? Why is the bridge made out of concrete instead of wood and cardboard?
3. Let students observe shapes of different structures used for support and name these shapes. Students' attention should be drawn to such things as bicycles, roof beams, rails, columns supporting bridges, buildings. Shapes such as triangles, circles, arches, rectangles can be seen.
4. Make construction materials (paper, cardboard, pieces of wood, tape) available. Divide students in groups. Give each group a mass/stone and ask them to use some of the construction materials available to build a resting stand for the mass.

## **ASSESSMENT**

- Play a pretend game in which students pretend to be a structure. The student will stand; identify self as the structure; state what he/she is used for; state what he/she is made from; state why he/she was made from that kind of material.

- Let students name devices at home, at school or in the community that use electricity.
- Use pictures and/or appliances to stimulate class discussion (e.g. fan, blender, iron etc). Display one at a time and question students about the changes that take place when the electricity is turned on; e.g. the iron gets hot, the radio makes a sound, the fan spins, etc.
- Turn on an appliance that is not connected to the mains supply and let students explain what happens and why, and what must be done to make the appliance work. Explain that electricity provides energy that these devices need to work.

- Use a toy that works on batteries. Put in the batteries. Turn on the switch and let students talk about what happens. Remove the batteries. Turn on the switch and let students observe and talk about what happens.

## **ASSESSMENT**

- Checklist with pictures of devices that use electricity and some which do not.  
Let students tick those that use electricity.
- Let students pretend to be electrical appliances. Let them demonstrate how they will change/what they will do when the electricity is turned on.

## **TOPIC: SAFETY**

### **DURATION: 1 Lesson**

### **OBJECTIVE:**

Students should be able to:

1. State safety measures in using electrical devices.

### **PROCESS SKILLS**

Communicating, Inferring.

### **MATERIALS**

Sockets, plugs, electrical appliances  
Pictures showing unsafe practices, dangerous situations e.g. fallen electricity lines.

### **CONTENT SUMMARY**

- Electricity brings many benefits into our homes but it can bring danger too.
- Apart from fires, electricity can cause serious injury and even death. It is best to be very careful when using electricity at home.

### **SUGGESTED ACTIVITIES**

- Discuss some possible dangers of electricity – shocks, burns, and fires
- Let students relate accounts of incidents they might have heard of involving the dangers of electricity.
- Teacher discusses safety rules with students displaying the pictures.

#### **Rules:**

- Do not plug anything into light socket except light bulb.
- Do not push anything into sockets except electrical equipment.
- Do not push anything into outlets except plugs.
- Do not touch bare/ exposed electrical wires.
- Do not touch electrical appliances and fittings with wet hands.
- Seek guidance from an adult when there is a need to use electricity.

## **ASSESSMENT**

- Describe situations based on the rules. Let students bow their heads if it is not safe and raise their heads if it is safe. (Game)



## **TOPIC: USES OF ENERGY**

### **DURATION: 2 Lessons**

### **OBJECTIVES:**

Students should be able to:

1. State the use of heat, light, and electricity in our daily lives
2. List some uses of the sun in everyday activities.

### **PROCESS SKILLS**

Observing, Communicating, Manipulating, Predicting

### **MATERIALS**

Sunlight, flashlight, pictures of appliances that use light, electricity or heat, to function, appliances and devices, ice, candle, plants.

### **CONTENT SUMMARY:**

- In our daily lives we use
  - heat to keep us/things warm, for cooking, for drying things
  - light to help us to see, to make some calculators work
  - sounds to make music, appreciation, listening, communicating
  - electricity to produce light, heat, to make things move, for cooking, for providing energy for appliances and devices to function/work
- The sun provides us with energy in the form of light and heat.
- Plants use the light of the sun to grow.
- We use the heat of the sun to dry things, e.g. clothes, seeds and foods.
- We must use heat, light and electricity safely since they can cause harm.

## SUGGESTED ACTIVITIES

- Teacher guides students to place similar pieces of candle wax and ice in the sun and in the shade. Let students observe and compare what happens.
- Teacher presents students with two similar plants, one of which was placed in the dark for about a week (but watered regularly) and one which was kept under normal conditions. Let students observe and compare the two plants and infer what was responsible for the difference in appearance.
- Teacher makes various devices, appliances, toys work using
  - electricity from the mains and batteries
- Teacher lets students role play to demonstrate safety when using
  - heat, light and electricity

## ASSESSMENT

- Interviews – basic questions, e.g.
  - If the sun did not shine at all, what do you think will happen, and why?  
Let students explain.
- Let students complete a picture table as shown below. They use a tick to indicate the form of energy being used.

<b>Activity</b>	<b>Electricity</b>	<b>Heat</b>	<b>Light</b>
Picture 1		<b>v</b>	
Picture 2			
Picture 3, etc			

## **TOPIC: ENERGY SOURCES**

**DURATION: 3 Lessons**

### **OBJECTIVES**

Students should be able to:

1. Identify the source of energy which enables objects to move in given situations.
2. Make toys that can move.

### **PROCESS SKILLS**

Observing, Classifying, Predicting, Communicating, Designing

### **MATERIALS**

Battery operated toy cars and trucks, wind-up toy cars and trucks, clocks, toy cars and trucks which must be pushed or pulled, rubber bands, pencils, cotton reels.

### **CONTENT SUMMARY**

- In order to move objects must have a source of energy
- This energy can be obtained from batteries, wound-up springs/rubber bands, humans.

### **SUGGESTED ACTIVITIES**

- Demonstrate the operations of battery-operated toys. Let students predict what will happen if there is no battery.
- Repeat activity using wind-up toys.
- Display the third set of toys and let students suggest what makes them work.
- Let students use rubber bands to wind up pairs of pencils and then release them. Observe what happens to the rubber bands and the pencils. Let students discuss the results.
- Let students design and make toy trucks using easily available materials from the environment (plastic bottles, bottle stoppers, etc).

Let them devise ways of getting them to move. Let them race their vehicles.

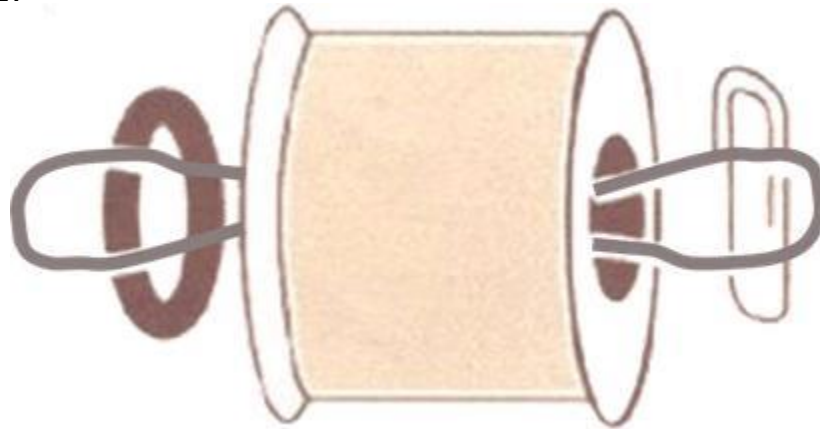
- Let students design and make a cotton-reel tractor as follows:

## **MAKING A RUBBER BAND MOTOR**

### **MATERIALS:**

Thread, cotton reel, rubber band, cotton swab, metal washer, paper clip

### **PROCEDURE:**



- Pull a rubber band through the hole of a used spool of thread.
- Put a paper clip through one end of the rubber band.
- Tape down the clip to the side of the spool.
- Pull the other end of the rubber band through a washer and put a matchstick through the loop.
- Wind up the matchstick.
- When it feels tight, place the cotton reel on a flat surface.
- Let it go and see what happens.

After students have made their vehicles and observed them for some time, teacher asks them questions such as:

- What happened when you turned the matchstick? ○  
What happened to the rubber band when you released the vehicle?
- What made the vehicle move?
- What other things are made to move like this?

Teacher then asks students if they can change their vehicles in any way (use a bigger rubber band, use a longer matchstick, cut grooves in the cotton reels, do something to keep the twisted rubber band tighter, etc.) Let students change one thing (variable) on their vehicle and predict how

it will affect its movement. Students try out their suggestions and note the difference with the way the vehicle moved before.

## **ASSESSMENT**

1. Group toys based on their mode of movement.
2. Assess the efforts students made in making their cotton-reel vehicles. Include assessment of attitudes, such as persistence and cooperation.

## **UNIT: STRUCTURE AND FUNCTION (GRADE 1)**

### **Topic: Some Plants have Flowers for Various Functions**

#### **Duration: 4 Lessons (30 minutes each)**

#### **Specific Objectives**

Students should be able to:

- Draw and label a diagram of the main external parts of a plant.
- Name the external parts of a flower.
- Compare the external parts of different flowers (shape, colour, size, texture).
- State the role of each part of the flower.

#### **Process Skills**

Observation  
Communication  
Measuring  
Classifying

#### **Materials**

Flowers –variety in shape, size, colour of sepals and petals, and texture (allamanda, hibiscus, banana, flamboyant, mango, breadfruit, pawpaw, pea, plumrose, grass, coconut, pumpkin, sweet potato, orange, guava, sour sop) Chart with a labelled diagram of a flower.

Worksheets for students to compare external structures of flowers  
Storybooks

#### **Content Summary**

- The main external parts of a plant are the leaves, stem, roots, flowers and fruits.
- Flowers are made up of several common parts. Sepals are found on the outside and are normally green in colour. They protect the flower when it is a bud. Petals are found just inside the sepals. They are usually brightly coloured. They attract insects or birds to the flowers.
- Inside the petals are the stamens. Stamens contain pollen grains at the top. The pollen is usually yellow in colour. Pollen is needed to help the plants make fruits. The part at the centre of the flower is called

the ovary. This is usually swollen and has a stalk at the top. The ovary is the part of the flower that forms the fruit.

5. The external parts of different flowers vary in size, colour, shape and texture. Petals may be pink e.g. periwinkle and rose; red e.g. rose and flamboyant; yellow e.g. allamanda; white e.g. pawpaw and orange.
6. Some flowers may be small and grouped together e.g. sunflower, zinnia, ixora, mango.

## Activities

- Take students outside to observe and collect flowers found around the schoolyard.
- Let students bring flowers found at home/in the community.
- Prepare work sheets for students to complete to compare flowers.
- Let students look at flowers and talk about the different parts of the flower.
- Discuss with students the role of each part of the flower identified.
- Let students locate the flower on a plant and name the part of the plant that bears flowers.
- Read stories to students. Stories of flowers and their beauty will be appreciated.

## Assessment

- Using specimens of flowers, let students identify and name the different parts of the flower.
- Encourage students to suggest the role of the different parts of the flower.
- Let students draw a flower (*My favourite flower*) and colour it.
- Let students draw a plant to show the parts of the plant, including the flowers.

## UNIT: ECOSYSTEMS (GRADE 1)

### **Topic: Local Plants and Their Uses**

### **Duration: 2 Lessons**

### **Specific Objectives**

Students should be able to:

- Discuss different uses of plants in the society.
- Describe how plants and plant parts can be processed into certain foods.
- Identify/name plants found in your country.

### **Process Skills**

Observing, Communicating, Classifying.

### **Materials**

Pictures (for 'I Spy' game)  
Pictures of plants  
Plants  
Seeds  
Flowers  
Roots  
Leaves

### **Content Summary**

The **plants** found in the country are used in various ways and for different purposes, such as for food, clothing, building materials, craft, etc.

### **Suggested Activities**

- Go on a nature walk/field trip and observe plants in the environment. Identify some plants they see by naming them.
- Discuss where some plants can be found (seaside, home, garden, etc.).



- Work in groups to classify plants according to their uses (food, clothing, shelter, medicine, decoration).
- Make certain products from plants, e.g. drinks, popcorn, tamarind ball, '*ashum*', etc.

## **Assessment**

- Present picture/plants and play a game, '**I Spy**'. Teacher tells students to identify the plant that can be used for a specific purpose.
- Present students with picture of plants and products that can be made from these plants. Students match the plants to their products.

## Topic: Our Local Animals

### Duration: 4 Lessons

### Specific Objectives

Students should be able to:

- List animals found in their country.
- State features of different animals.
- Discuss/explain what endangered species are and give examples of them.
- Outline ways to protect endangered species. E.g. (laws; changing of human behaviour).

### Process Skills

Observing, Recording, Communicating (Explaining, Oral discussion, Listening)

### Materials

TV, VCR with appropriate film/cassette  
Poem  
Pictures of animals (general)  
Tables (templates)  
Pictures of animals (endangered species).  
Charts (living and non-living things)

### Content Summary

There are several types of animals found in your country. Some examples are lizard, humming bird, mongoose and mosquitoes. **Aquatic** animals live in water while **terrestrial** animals live on land. Some animals are in danger of being wiped out altogether; these are called endangered species.

### Suggested Activities

- ∅ Observe various living things and identify those that are animals.
- ∅ Investigate to find out the names of the animals in their country and list them. Find out if any are endangered.
- ∅ Listen to address by guest speaker on the topic of local animals and discuss. Pose questions to guest speaker.

- ∅ Observe animals in their communities and natural habitats.
- ∅ Hold class discussion on the habitats of familiar animals.

## **Assessment**

Oral questions.

Give example(s) of endangered species in your country.

Name three animals that live on land and three that live in the sea.

Let students create their own poem based on endangered species.

Group/colour animals according to type of habitat (*aquatic or terrestrial*).

Complete a project, which entails collecting pictures of named endangered and other species of animals.

Students act out how the animals outlined in their lesson move around.

Using a table, students put pictures of animals under the headings of (a) Endangered (b) Not endangered.

## **Topic: Feeding Habits of Organisms and Food Chains**

### **Duration: 2 Lessons**

### **Specific Objectives**

Students should be able to:

- ∅ Compare feeding habits of organisms (e.g. herbivores, etc. Do not use terms).
- ∅ Construct simple food chains.

### **Process Skills**

Observing, Communicating (Oral expression, Listening, Explaining),  
Classifying, Constructing

### **Materials**

Pictures (to use in food chains)  
Tables (templates for classifying animals and plants)  
Pictures (habitats of plants and animals)  
Plants  
Pets  
Reading materials (animal stories)

### **Content Summary**

Animals do not make their own food. Some animals feed only on plants. Some animals feed only on the flesh of other animals. Some animals feed on both plants and animals; These animals are omnivores. .

Green plants make their own food using energy from the sun. The feeding relationships among organisms in an environment may be represented by simple **food chains**.

### **Suggested Activities**

- ∅ Distinguish through discussion the feeding habits of familiar animals.
- ∅ Identify herbivores, carnivores and omnivores based on the profile given of the feeding habits of uncommon animals (*Play 'What am I?' game*).

- ∅ Given pictures of the following, pupils construct food chains: sheep, grass, rat, nuts, bird, human, chicken, mongoose, corn.
- ∅ List two animals that (i) eat plants only (ii) eat flesh only (iii) eat both. Discuss where (i) plants get their food (ii) animals get their food.

## **Assessment**

- ∅ Students will name examples of herbivores, carnivores, omnivores (*do not use terms*).
- ∅ Give examples of plants and animals and volunteers will say what eats them.
- ∅ Draw food chains on the chalk board (*individual students*).
- ∅ Students will complete a project in which pictures of animals and plants are grouped by category (feeding habit, producer, consumer, etc.)

## **Topic : Habitats**

### **Duration: 2 Lessons**

### **Specific Objectives**

Students should be able to:

- § Identify homes/habitats of animals and plants.
- § Classify animals as domesticated, wild and useful.
- § Classify plants as food, ornamental/decorative, shelter etc.
- § Appreciate the importance of caring for plants and animals and the environment in which they live.

### **Process Skills**

Observing, Manipulating, Communicating, Classifying

### **Materials**

Slides (pictures of plants/animals in their habitats)  
Video (documentary on plants/animals habitats)  
Movies ('Born Free', the 'Lion King', etc.)

### **Content Summary**

The place where an organism lives is called its habitat. Habitats are suited to the needs of the organisms that dwell in them. Some habitats are **terrestrial**; they are on land. Other habitats are **aquatic**; they are found in water. Humans have brought certain animals and plants under their care (domestication) for several reasons, e.g. to help with work, or for food, or as pets.

### **Suggested Activities**

- ∅ Identify homes of plants and animals using pictures and previous knowledge.
- ∅ Classifying animals (domestic/wild, useful for food, clothing, etc.). Match to their use.
- ∅ Discuss importance of caring for the habitats of plants and animals.

Read/listen to story related to topic.

Conduct field trips to various sites/habitats of animals and plants (e.g. ponds, mangroves, etc.).

'Pour a pond': Collect a bucket of water from a pond. Include plant and animal species and other items commonly found in pond water. Simulate a pond by pouring the water on to a clear, vinyl table cloth (edges are rolled so the water stays in place). Students explore the pond in the same way they would in nature (*find different species; examine specimens with a simple microscope/hand lens, etc.*)

Watch a relevant film.

Learn/recite relevant poem(s).

Conduct show and tell activities about habitats of plants and animals, and of experiences in protecting these animals/plants and their habitats.

## **Assessment**

- Ø Make sentences about habitats of plants/animals.
- Ø Completion tasks/tests (oral/written) to test knowledge, understanding and values regarding habitats and protection of plant and animal life.
- Ø Grade 'Show and Tell' presentations.

## Topic: Litter/Littering

### Duration: 2 Lessons

### Specific Objectives

Students should be able to:

- ∅ Identify items of litter around the school.
- ∅ Group the litter according to size, colour, material it is made of (bottles, cans, paper, plastic, food waste), recyclable and non-recyclable.
- ∅ Explain the dangers of litter (on a simple scale, e.g. attracting animals with diseases, broken glass causing injury etc.)
- ∅ Discuss how the problem of litter in schools could be avoided.
- ∅ Trace garbage to its final destination.

### Process Skills

Observing, Classifying, Communicating,

### Materials

Box or bag  
Worksheet  
Pictures  
Glue  
Pair of scissors  
Garbage bin  
Waste basket  
Paper

### Content Summary

One way of **polluting** the environment is by littering. **Litter** refers to articles (**garbage**) that are thrown or left in places where they do not belong. Polluting the environment by **littering** can be very harmful. **Disposing** of garbage and unwanted articles in the proper ways can go a long way to keep our environment **clean** and **healthy**. Items may be classified as **recyclable** (can be re-used in the same or different form) and **non-recyclable**.



## Suggested Activities

- ∅ Listen to and participate in discussion by resource person on the impact of littering and the benefits of recycling.
- ∅ Participate in a stacking hunt: students go around the school and pick-up litter. Bring it into the classroom and: (i) sort them into different categories (size, colour, material); (ii) find ways in which the items can be used.
- ∅ Visit a landfill to view the final destination of discarded items.
- ∅ Participate in a school clean-up project and/or class clean-up (each child will be given a day in which he/she will be responsible for the cleaning of the class).

## Assessment

- Complete worksheet: classify pictures of recyclable and non-recyclable items into their respective groups.
- Students work in-groups on a project simulating the littering process (e.g. person-bin-truck-landfill).
- Class discussion on littering.
- Students make recommendations on how to cope with/decrease the practice of littering.

**UNIT:            DIVERSITY AND CLASSIFICATION  
(GRADE 1)**

**Topic:    Different animals make different sounds**

**Duration : 2 Lessons**

**Objective**

Students should be able to:

- Identify by sight or by sound a wide variety of animals.

**Process Skills**

Observation

Classification

Inference

Communication

**Materials**

Pictures of Animals

Video of Animals

Tape Recorder / Cassette Player

Audio Tapes

**Content Summary**

Animals have specific names and make unique sounds. For example, dogs bark, ducks quack, horses neigh, sheep bleat, cows moo, pigs oink, birds chirp.

## **Suggested Activities**

Using a cassette player students listen to sounds animals make and identify the animal making the particular sound.

Let students make sounds of different animals.

Students are given pictures of animals and asked to name them. (orally)  
Students are given flash cards with names of animals and are asked to find their partner with the picture of the animals.

Show a video of animals in their habitat, zoo etc. and let students name these animals.

## **Assessment**

Students play sound Bingo

## **Topic: My Book of Animals**

### **Duration: 2 Lessons**

### **Specific Objectives**

Students should be able to:

- Ø Make a representation of animals.
- Ø Complete scrapbooks, portfolios, projects and posters.

### **Process Skills**

Classification

Communication

### **Materials**

Pictures of Animals

Flash cards

Posters

Slogans

### **Content Summary**

Students' displays will include concepts of classifying animals according to size, body coverings, and the food they eat. Some may have captured the animal's habitat. Some may highlight their favourite animals and pets. Some may capture the meaning of endangered animals and characteristics of animals.

It is important to note that this is the students' completed work.

## **Suggested Activities**

The completed scrapbooks, portfolios, projects, posters etc., of students are displayed and then returned to the students.

## **Suggested Assessment**

- Ø Use a checklist
- Ø Allow students to give oral presentations of their work – scrapbooks, portfolios, projects etc.

## **Topic: Animal Behaviour:**

### **Duration: 2 Lessons**

### **Specific Objectives**

Students should be able to:

- ∅ Imitate the behaviour of an animal.
- ∅ Role-play a day in the life of their pet.

### **Process Skills**

Observation

Communication

Interpretation

### **Materials**

Students – Costumes where possible

### **Content Summary**

Animals make different sounds and movements. Animals behave differently when feeding as well.

### **Suggested Activities**

Role-playing of animals by students.

Assessment

Students take turns to role-play animals – other students guess which animal is being portrayed.

## **UNIT: EARTH'S WEATHER (GRADE 1)**

### **DURATION: 6 Lessons**

### **OBJECTIVES**

Students should be able to:

- ∅ Predict weather patterns.
- ∅ Construct graphs to illustrate weather patterns over a period of time.
- ∅ Discuss how the different types of weather affects one's activities.
- ∅ Identify clothing, structures, and devices that humans make to solve problems related to the weather.
- ∅ Differentiate between hot and cold without using a thermometer.
- ∅ Discuss what a thermometer is and for what it is used.
- ∅ Identify and record the direction from which the wind is blowing at different periods.
- ∅ Design and construct a simple wind vane (with the four basic cardinal points) to demonstrate wind direction.

### **PROCESS SKILLS**

Observing  
Recording  
Communicating  
Measuring  
Predicting  
Manipulating  
Interpreting  
Inferring

### **ATTITUDE**

Curiosity  
Inventiveness  
Integrity in observing and reporting  
Aware of the use of technology in weather

### **MATERIALS**

Radio  
Television  
Thermometer  
Wind sock/wind vanes  
Materials for making weather instruments

## **CONTENT SUMMARY**

- Different weather conditions affect our activities; hence it is useful to predict the weather.
- People have developed ways to study and predict the weather.
- People who study the weather are called meteorologists.
- We can listen to our local weather T.V. channel or radio station for the weather report.
- The reports help us to plan activities and prepare for storms or hurricanes.
- Weather can change at different times of the year. In the Caribbean we experience a dry season, and a wet season. In some other countries there are four seasons.
- People build strong houses and make shutters to protect themselves from storms. People have different types of clothing for dry and rainy weather. People use sunglasses to protect their eyes from the sun.
- We can use different instruments to measure elements of the weather.
- Temperature affects the weather.
- A thermometer is used to measure how hot or cold the weather is (temperature).

### Wind direction and speed affect the weather

- Wind vanes help to tell us from which direction the wind is blowing.
- By observing weather patterns, we can sometimes predict the weather.
- An anemometer measures the speed of the wind.



## **SUGGESTED ACTIVITIES**

- Identify components of the weather.
- Describe kinds of weather experienced in the Caribbean, based on students' experiences.
- Using students' experiences, refer to the extreme forces of weather; e.g. rain, wind or thunderstorms, heat waves, etc.
- Discuss the effects of weather on humans. Allow students to discuss freely, referring to their experiences.
- Provide students with a situation where they can listen to a weather report. Discuss what was heard.
- Introduce the term, meteorologist. Let students identify local meteorologists.
- Describe the work of a meteorologist.
- Encourage students to listen to the weather reports on the local radio or T.V., and then report to class.
- Display a variety of objects that people use in different types of weather and let students match object to type of weather. Let students identify problems people might have in different types of weather, e.g. we may get wet in rainy weather. Discuss how technology has enabled people to prepare for different weather conditions, including disasters such as hurricanes.
- Observe the thermometer (SAFETY: USE ONLY ALCOHOL THERMOMETERS). Prepare experiment with ice and hot water where students may observe how the thermometer works.
- Investigate and operationally define the thermometer.
- Allow thermometer to remain in class over a period of time to allow students to investigate and experiment on their own, and record daily temperature.
- Take students out on a windy day. Observe objects being blown by the wind. Infer the direction from which the wind is blowing by observing the movement of objects.
- Construct simple wind vanes or windsocks to determine wind direction.

- Allow students to experiment with various materials on the playground to indicate wind direction.

## ASSESSMENT

Circle the best answer.

1. A meteorologist studies the  
a) earthquakes                      b) news                      c) weather
2. A very strong wind in the Caribbean is called  
a) air                      b) breeze                      c) hurricane
3. A thermometer can measure  
a) temperature                      b) wind direction                      c) wind speed
4. If I want to know where the wind is blowing from, I can look at the  
a) thermometer                      b) weather                      c) wind sock
5. When a thermometer is placed in cold water, the liquid in it will  
a) go down                      b) go up                      c) not move

### ***Drawing***

Draw a wind sock on

- a) a windy day                      b) on a calm day

Draw some trees on

- a) a stormy day                      b) a calm day

Draw clothes on the line

- a) on a windy day                      b) on a calm day

***Communication***

Listen to the weather report. Report on some of the news that you heard about the weather.

**ASSESSMENT CHECKLIST**

- |                |   |           |
|----------------|---|-----------|
| Scoring rubric | 1 | poor      |
|                | ➤ | fair      |
|                | ➤ | good      |
|                | ➤ | very good |

**NAME** .....

<b>CONCEPTS</b>		
Describes a weather report		
Defines the term, meteorologist		
Names the seasons in the Caribbean		
Operationally defines	a) thermometer	
	Ø wind sock	
	Ø wind vane	
Identifies	a) thermometer	
	▪ wind sock	
	▪ wind vane	
Describes different types of weather experienced		
<b>PROCESS SKILLS</b>		
<b>Ability to</b>	a) <i>observe</i>	
	<i>measure</i>	
	<i>communicate</i>	
	Ø <i>record</i>	
	<i>infer</i>	
	f) <i>collect information</i>	
<b>ATTITUDE/GROUP SKILLS</b>		
	Ø commitment to accuracy	
	accepts responsibility	
	3. creativity	
	shows responsibility	
	e) co-operates with others	

## UNIT: SOLAR SYSTEM (GRADE 1)

### DURATION: 4 Lessons

### OBJECTIVES

The students should be able to:

- Observe and record natural occurrences of the day and night.
- Infer that day and night occur in regular cycles.
- Identify the phases of the moon.

### PROCESS SKILLS

Observing  
Inferring  
Observation  
Communicating

### ATTITUDE

Curiosity  
Integrity in recording and

### CONTENT SUMMARY

- ⌚ Day and night occur one after the other in a regular pattern.
- ⌚ The sun is always seen in the day.
- ⌚ Sometimes we see the moon in the day.
- ⌚ Most times we see the moon and stars in the night.
- ⌚ The stars form patterns in the sky.
- ⌚ The moon has different shapes from time to time.

### STUDENT ACTIVITIES

1. *Observing the sky*
  - Encourage students to observe the sky at different times.
  - Discuss with students the difference between the day sky and the night sky.

Let students record time (nearest hour) it gets dark or the time they start turning on lights at home every day for a week. Let students discover that changes in daytime and nighttime come at almost the same time every day.

Let students match hours of the day and night to different activities that they do and occurrences in nature (e.g. the position of the sun) for a few days.

### *Observing the phases of the moon*

Let students draw and show the different shapes of the moon that they have noticed.

Observe the shape of the moon at various times of the month.

Encourage students to observe the full moon if possible.

Allow students to do a journal showing the different shapes of the moon.

## **ASSESSMENT**

### **Communicating**

#### Drawing

- Draw a night sky.
- Draw a day sky.
- Draw at least two or three different shapes of the moon.

## **UNIT:            EARTH'S RESOURCES (GRADE 1)**

### **DURATION: 9 Lessons**

### **OBJECTIVES**

The students should be able to:

- Infer that objects in the environment may be natural or made by people.
- Identify items of litter around the school.
- Group the litter according to  
size  
colour  
material made of (glass, metal, paper, plastic).
- Explain the dangers of litter (e.g. attracting animals with diseases, broken glass causing injury).
- Describe conditions of air at different times (hot, humid, cold).
- Identify at least two air pollutants found in a particular area.
- Discuss how pollutants affect people's activities.
- State the properties of water .
- Infer that rain is water.
- List places where water can be found.

### **PROCESS SKILLS**

Observing  
Classifying  
Communicating  
Designing  
Manipulating  
Inferring  
Problem solving

### **ATTITUDES**

preservation of the environment  
Inventiveness  
Critical thinking

## **MATERIALS**

Objects in the environment

Discarded materials from home and school

Objects with different scents

Other environmental factors

## **CONTENT SUMMARY**

### **Natural and Human-made materials and Litter**

- Objects in the environment are natural or are made by people.
- Objects may be made of different materials such as wood, metal, plastic, paper, glass or cloth.
- Litter in the environment is made up of various kinds of materials. Litter can be classified according to the material from which it is made.
- Some waste materials are “environmentally friendly” which means that they can be broken down (decomposed) and absorbed by the natural environment.
- Recycling means taking useful materials from waste and making new products from them. For example, toys and ornaments can be made from discarded materials.
- Recycling enables us to reduce the amount of garbage we produce.

### **Air as a resource**

- Air is always in motion. Air can be hot or cold. The air around you makes you feel hot, cold or sticky.
- We breathe in air; therefore, air should be kept clean.
- Air can be polluted with various pollutants in the atmosphere.
- Some pollutants in the air are smoke, dust, chemicals, fumes from exhaust, germs, etc.



## **Water as a resource**

- Water can be found in rivers, ponds, streams, pools, sea, cisterns, and reservoirs.
- Water may be clean or unclean.
- Rain is water falling back to the earth.
- Water has different properties (e.g. it is colourless, it has no taste, it has no smell, it flows, etc.) .

## **STUDENT ACTIVITIES**

### *Natural and Human-made materials and Litter*

- Allow **students** to collect a variety of objects; observe and discuss the materials used to make various objects.
- Discuss the terms, ' natural' and 'human-made'.
- Enable students to classify objects in terms of natural and human-made.
- Allow students to examine their lunch-packs and also that of their peers to observe the natural and human-made materials found in the lunch boxes.
- Let students observe and collect (if possible) the litter on the school compound. (Safety: Exercise discretion – avoid garbage cans etc. Allow students to wear gloves or cover their hands with plastic bags. Let them wash their hands after handling litter).
- Classify objects of litter under the various headings.
- Further classify human-made objects made from glass, plastic, paper, etc.
- Discuss how human-made materials can affect the environment.
- Discuss the term, 'recycle'. Help students to guess the meaning of recycle by helping them to see the word "cycle" in "recycle" and "bicycle" Encourage pupils to find out things which are recycled at home, in school or in the environment.

- Let students brainstorm to suggest various ways they can engage in the recycling process.
- Let students to use discarded juice boxes and other objects to create toys, paper-bag puppets, collages, etc.

## ***Air***

Use various strong scents, spray, perfume, disinfectant, mosquito coil (lit), etc. to enable children to conclude that air is not always pure. Discuss various substances that can make the air unclean and discuss the effect on human

Elicit from students the need to keep air clean since we also breathe in air.

Allow students to observe exhaust from vehicles, smoke from whatever sources available, dust, and anything that can cause air to be unclean and discuss the effect on human.

Take students to observe the movement of leaves, dust, etc on playground or elsewhere, fluttering flags, or any other examples to infer air in motion.

## ***Water***

Take students out to observe bodies of water or show them pictures of different places where water can be found.

Let students collect rainwater. Let them describe/draw what they think happens to the rainwater after it rains.

Experiment to list properties of water, e.g. give students plastic cups – one with water and two or three of the following: vinegar, oil, alcohol, coloured juice, milk. Allow them to touch, smell\*, pour, taste<sup>#</sup>

**Safety\*:** show students how to use their hands to waft the fumes towards their nostrils for smelling.

**Safety<sup>#</sup>:** Tell students not to taste anything without an adult present. Some things look like water, but may be poisonous.

Ask students “Which is water?” From this they use words to describe the properties of water.

Show students samples of water (e.g. with mud, leaves, etc.)  
Discuss that water can be clean and unclean.

## **ASSESSMENT**

### **Natural and Human-made materials and Litter**

- Given the illustration of objects, students should be able to classify them as natural or human-made.
- Given the name of an object, students should be able to state if the object is natural or human-made.
- Given an object, e.g. a shoebox, students should be able to state one way by which it can be recycled.

### **Air as a resource**

- Given a list of various scents, students should be able to identify the scents which may be harmful in the environment.

### **Water as a resource**

Let students:

- List the properties of water.
- State ways by which water can become unclean.
- Illustrate places where water can be found.

### **Design and make:**

The ACTIVITY where students make an object from discarded materials could be assessed on criteria such as:

Inventiveness, cooperation with others, neatness, persistence, etc.

**ASSESSMENT CHECKLIST**

- Scoring rubric
- 1 poor
  - 2 fair
  - 3 good
  - 4 very good

**NAME** .....

<b>CONCEPTS</b>		
Describes	a) human-made material	
	b) natural material	
Define litter		
Operationally define 'environmentally friendly'		
Operationally define 'recycle'		
Recognize that recycling is an important process		
Recognize that air can be polluted.		
State pollutants of air familiar to their environment		
State places where water can be found		
Recognize that water can be pure or impure		
<b>PROCESS SKILLS</b>		
<b>Ability to</b>	a) classify	
	collect materials	
	use materials in novel ways	
	communicate	
	create	
	infer	
	∅ illustrate	
<b>ATTITUDES/GROUP SKILLS</b>		
4. Stewardship of the environment		
Curiosity		
∅ Critical thinking		
Inventiveness		

