4

SCIENCE

Learner's Material

Quarter 4: Earth and Space

This book was collaboratively developed and reviewed by educators from public and private schools, colleges, and/or universities. We encourage teachers and other education stakeholders to email their feedback, comments, and recommendations to the Department of Education at action@deped.gov.ph.

We value your feedback and recommendations.

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Learner's Material
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To Grade 4 Learners

Dear Boys and Girls,

We are happy to share with grade four pupils like you this learner's material.

As we embark on the K to 12 Basic Education Curriculum, we would like to inform you that the Science Basic Education Curriculum promotes the development of the 21st century skills among Filipino learners.

The lessons and activities provided in this learner's material were developed to help you become hands-on, minds-on learners. The activities that you are going to do can help you learn the essential science concepts and skills through learning by doing. The activities are fun, simple yet will allow you to think critically.

With the guidance of your science teachers, the activities in these materials will support you in the development of your own understanding of the different science concepts, skills and attitudes so you can better understand yourself and the world around you.

The knowledge you will gain as you do the activities presented in this material will enable you to practice and apply the process skills such as predicting, observing, classifying, hypothesizing, experimenting and communicating.

Enjoy this learner's material and together, let us appreciate, preserve, and protect the world around us while learning, appreciating, and applying science.

The Science Writing Team

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Quarter 4: Earth and Space

The Earth is composed of three parts namely; soil, water and air with the interaction of the sun as the main source of energy on earth.

Soil is a very important natural resource on earth made up of tiny particles of rocks and decayed plants and animals. It also contains water and some gases found at the uppermost layer.

More than 97% of the earth's water is in the world's seas and oceans. Some are underground, and some are stored in the mountains of ice caps in the poles of the earth. Water also helps in shaping the land and it helps keep the earth's climate from getting too hot or too cold. Without water no living thing can exist. Therefore, we need to conserve these natural resources to be able to support life on earth.

The Earth is surrounded by a blanket of air called the atmosphere. The conditions of the atmosphere give rise to weather conditions. The changing weather is caused by components which include air temperature, wind speed and direction, and cloud formation which can be measured through the use of different weather instruments. These factors are affected by the presence of the sun's heat. It is important that we know the weather conditions of the day to keep us safe and avoid accidents.

Life processes on earth is greatly influenced by the sun as the main source of heat and light energy. As it warms the earth, it affects the temperature of the surface causing changes on the different processes needed to support different life forms and other environmental processes.

Since the sun's heat can also harm us, one should also know and practice the necessary safety precautions to avoid the harmful effects of the sun.

Chapter 1: Soil: The Place Where Most Plants Grow
Lesson 57: Soil: Its Types and Characteristics
Activity 1: "Can You Identify Me?"

Objectives:

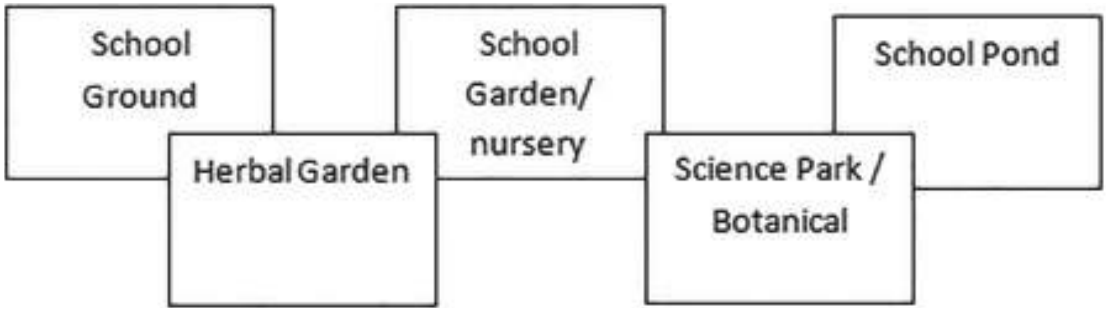
1. Define what soil is.
2. Identify the different types of soil based on their physical characteristics.

What you need:

3 plastic cups of the same size, shape and color
3 popsicle sticks
3 plastic spoons
hand lens
3 sheets of used short bond paper
hand shovel
permanent marker
a pair of gloves

What to do:

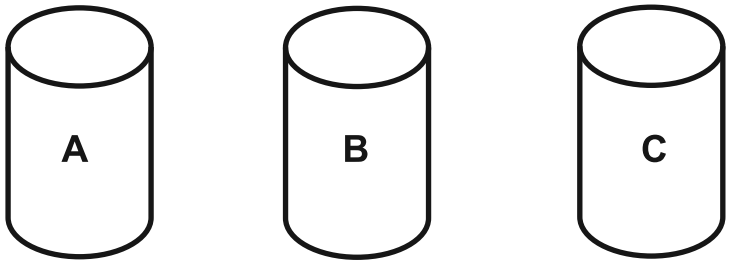
1. Be with your group all the time and stay in your assigned area in the school for 20 minutes.



Reminders: As you stay outside of the classroom, please observe the following rules:

- Avoid unnecessary noise so that other classes will not be disturbed.
- Do not play.
- Be with your partner in the group at all times.
- Bring the materials assigned to you/your group.
- Work on the assigned tasks immediately.
- Follow the instructions given by your teacher.
- Be mindful of the time allottment for the activity.
- In case of personal necessities, ask permission from the teacher before you leave the group.
- Wear cap or umbrella if necessary.
- Do not touch nor destroy any plants, animals or organisms found in your area.
- Keep safe all the time.

2. Collect three samples of soil in your area and place each on separate cups/container.
3. Label each sample with A, B, and C.



4. Scoop at least two tablespoons of soil from each sample.
5. Place each sample on a separate bond paper.
6. Using a hand lens and a popsicle stick, observe each sample.
7. Write your observations on your science notebook using the table below and write the same on the manila paper for posting and reporting in the class.

Soil Characteristics			
Soil	Color	Texture	Odor
A			
B			
C			

As soon as you have completed the assigned task, gather your used materials and go back to your classroom to finalize your output for posting and reporting.

Make sure you leave the area clean.

Guide Questions:

1. What common characteristics did you observe on your samples?
2. Do the samples have the same color, texture, and odor? Why do you think so?
3. What do you think is the type of soil that you observed?
4. Define soil in your own words.

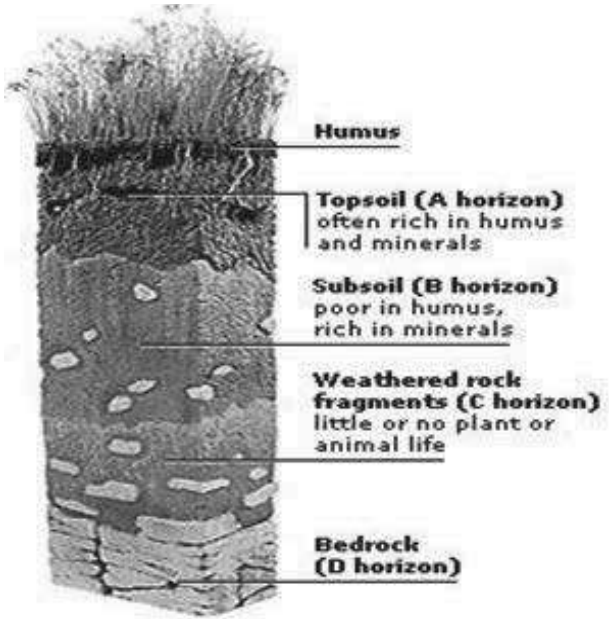
Remember these:

Soil covers most of the land part of the earth. You find plants, animals, houses and other organisms on the soil. We live on the soil and it helps us in many ways. Different types of soil have different physical characteristics. Each soil type differs in color, texture, odor and its ability to hold water. Some soils are good for planting while others are not. The presence of the different kinds of vegetative plants in a place is an evidence of a good quality of soil in the area or locality. Sometimes a combination of soil is observed in some areas of the country.

There are three different types of soil in our environment, namely:

Types of Soil	Common Characteristics
1.Clay	Particles are packed together tightly. It is sticky when wet and has the finest texture
2.Loam	It is a mixture of sand and clay. It contains large amount of decaying plants and animals. It has a fine texture.
3.Sand	Particles are coarse and loose

Soil is a system into which energy and matter from the sun, the atmosphere, and living organisms penetrate and interact. It is a system because it is composed of many different parts. Each of the layers has a special function to perform.



Layers of Soil

The soil is made up of different layers. Each layer has its own characteristics.

The Topsoil (A- Horizon) is the uppermost layer of the soil. This layer is rich with organic materials called humus and with minerals needed for plant growth. Humus comes from decaying plants and animals. The soil's dark color is an indication of the presence of humus. Several kinds of plants can be seen growing on this layer.

The Sub-soil (B-Horizon) is located just below the topsoil. It is composed of loosely arranged rocks, sand, and clay. This layer is very rich with minerals that drain from topsoil. When the topsoil is washed out, the subsoil alone cannot support plant life.

The Parent Rock (C-Horizon) is composed of rocks that are slowly breaking apart. It is exposed to very little weathering. It does not contain necessary nutrients and water needed for plant growth.

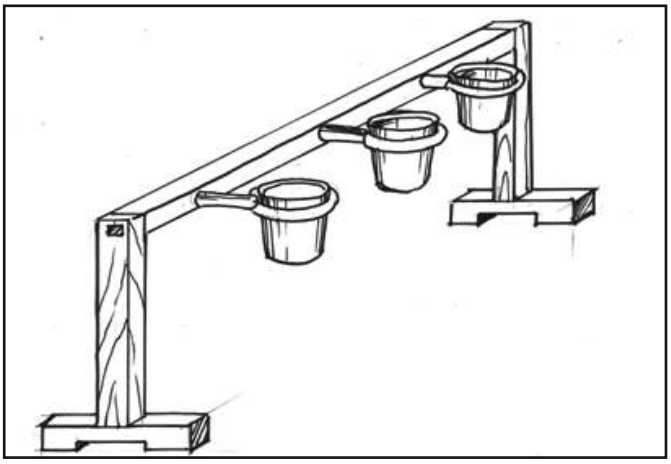
The Bedrock (C-Horizon) is the lowest of the soil layers. It is made up of undisturbed large boulders and gravel. This layer contains materials good for constructing buildings and making roads. No plant life can survive in this layer.

Day 2 - Further Investigation

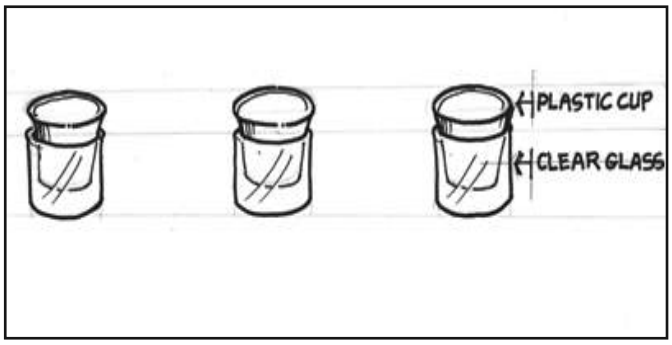
Activity 2: "Fast or Slow?"

What you need:

3 pcs. clear plastic cups (same size, shape and color with fine holes at the bottom)
stop watch
Do-It-Yourself (DIY) Equipment-Soil Tester



Option B



- 3 pcs. of plastic spoons
- 3 pcs. of plastic cup (same size and shape) with tap water
- 3 packs of different soil samples (labelled A, B, and C)
- 3 pcs clear plastic cups
- marker
- wristwatch or stopwatch

Note:

1. In the absence of the Do–It–Yourself Equipment, you may use clear plastic cups each placed on top of clear drinking glasses.
2. Make sure you use clear glasses of the same size.

What to do:

1. Fill each clear plastic cup of the DIY instrument with 75% or ¾ cup soil from three packed samples provided to you.
2. Using the marker, label each cup with A,B, and C.
3. Mount the cups on the DIY holder.
4. Place one cup below each mounted cup on the DIY to serve as catch basin of the water that will drip from the mounted cup.
5. Observe each samples and fill-out the table below
6. With the help of the other group members, pour at least 25% or ¼ cup water on each cup of soil labelled A,B, and C at the same time.
7. Ask somebody to record the time using the stopwatch or wristwatch after pouring water on the DIY equipment.
8. Observe again the samples.
9. Record your observations using the table below.

Cup No.	Characteristics		Observations		No. of minutes the water is absorbed
	Color	Texture	Before adding water	After adding water	
1					
2					
3					

As soon as you are done with your tasks, please gather/dispose/return used materials and equipment then leave the area clean. Wash your hands thoroughly after the activity.

Guide Questions:

1. What did you observe when you added water to each soil sample?
2. In which cup or sample was water absorbed the fastest? How fast was it absorbed? Why do you think so?
3. In which cup or sample was water absorbed the slowest? How slow was it absorbed? Why do you think so?
4. Was there a change in the appearance or texture of each soil sample after you poured water on it? Why or why not?
5. What does the activity show?

Lesson 58: Factors Affecting the Growth of Selected Plant

Activity 1: "What Do I Need in Order to Grow?"

Objectives:

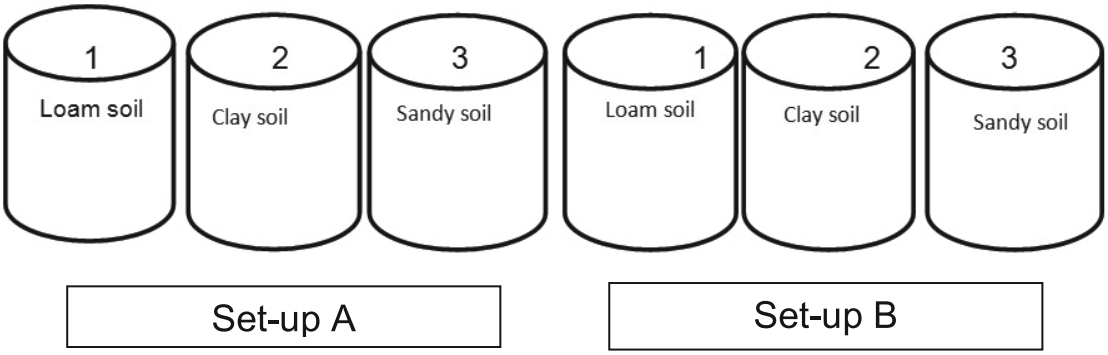
1. Investigate the effects of soil types on the growth of mongo seeds.
2. Identify factors that affect the growth of mongo seeds

What you need:

- a handful pre-soaked mongo seeds
- 6 pcs. of clear plastic cups with tiny holes at the bottom
- 6 pcs. of popsicle sticks
- 2 sets of 1 cup each of the three types of soil samples
- graphing paper/chart
- marker
- clear plastic ruler - 1 foot-inch
- 2 cups tap water

What to do:

1. Prepare 6 clear plastic cups of the same size.
2. Place equal amount of soil in each cup. Prepare two cups per type of soil according to the illustration. Each cup will contain seeds and will be watered during the activity.
3. Mark each cup with the same type of soil as:



4. Sow five pre-soaked mongo seeds overnight in each cup.
5. Sprinkle one tablespoon of tap water in each cup
6. Place set-up A inside the classroom. Do not expose them to sunlight.
7. Place set-up B outside the classroom where they are exposed to sunlight.
8. Observe the set-ups for the next two days.

Use the table below to record your observations.

Table No. 1 Try the activity to confirm growth of mongo sprouts.				
Set Up	**Type of Soil Used**	**Observations**		
		Day 1	**Day 2**	**Day 3**
A. Without sunlight				
1				
2				
3				

B. With sunlight				
1				
2				
3				

Table No.2

1. Observe the plant carefully without touching or moving it.
2. Record the number of leaves that comes out every day and measure the height of the plant from root to tip using a transparent ruler in centimeter (cm).
3. Observe the color of the leaves.
4. Copy the table below on your notebook and record all your observations.
5. Summarize your group observations /data on the manila paper.
6. Post your output
7. Be ready for reporting

Table No. 2 Validate if days of observation can produces the expected results.										
Set – Up	Type of Soil Used	OBSERVATIONS								
		DAY 1			DAY2			DAY 3		
		No. of leaves	Height in cm	Color of the leaves	No. of leaves	Height in cm	Color of the leaves	No. of Leaves	Height in cm	Color of the leaves
A	Without sunlight									
B	With sunlight									

Guide Questions:

1. In which cup and set-up did the seeds sprout first? Why is this so?
2. In which cup and set-up did the seeds sprout the last? Why is this so?
3. In which cup did the mongo seeds grow best? Why?
4. What do you think helped the mongo seeds sprout fast?
5. What does the activity show?

Remember these:

Controlled Variable- refers to the things, materials, or conditions that remain constant or the ***same in the experiment.***

Experimental or Manipulated Variable – refers to the things, materials or conditions that are ***varied or changed*** in the experiment.

Experimental or Responding Variable – refers to the things, materials, or conditions that ***respond to the changes.***

Seeds provided with enough air, moisture, and warmth will germinate. Before a seed germinates, it absorbs moisture from the soil. Seeds germinate when conditions are favourable. A favourable condition means there is enough moisture, minerals, and normal temperature.

The surface of the earth is covered with loose particles called soil. The soil is formed from the breaking of rocks into smaller particles due to weathering. Soil is very important in sustaining life on earth. It is needed by plants in making food that provides life to other living things.

Chapter 2: Water in the Environment

Lesson 59: Uses of Water from the Different Sources

Activity 1: "Where Do I Come From?"

Objective:

Identify the different sources of water.

What you need:

- cut-out pictures
- manila paper or cartolina
- permanent marker
- sentence strips/cartolina strips
- paper tape
- a pair of scissors

What to do:

1. Below is a list of roles in a group. Choose or assign a role to each member of your group.

Note: The function of each role will be given by your teacher.

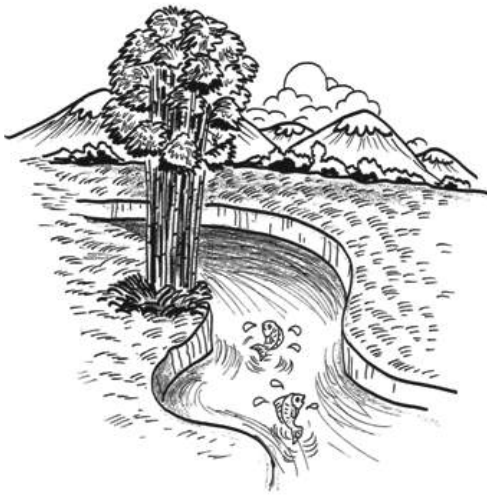
- Scribe or writer
- Resource keeper
- Reporter
- Time keeper
- Desk organizer
- Paraphraser
- Noise captain
- Networker

2. Study the pictures provided to your group.
3. Paste them on the manila paper in column A and label it. (a sample is provided below)

(Sentence strips with descriptions)

(Sentence strips with descriptions)

(Sentence strips with descriptions)



4. Take out the cartolina strips (prepared by the teacher) containing sentences or statements.
5. Match each statement with the picture on the left.
6. Paste it opposite the picture on the right column.
7. Answer the questions below.
8. Post your output on the board.

Guide Questions:

1. What are the sources of water as shown on the picture?
2. Name some of the places where water is used.
3. How is water used in these places?
4. What are the sources of water supply in your barangay?
5. How are the water sources kept safe and clean?

Remember these:

Sources and Kinds of Water

Water comes from different sources. It may come from open or closed sources. It may also come from a small body of water or a big body of water. Rainwater comes from clouds.

There are three main sources of water. The kind of water depends on its source. The three different kinds of water are seawater, freshwater, and groundwater.

1. **Seawater is** salty. It contains plenty of salt. It is found in the seas and oceans. Seawater is also called hard water.
2. **Freshwater** is also called surface water. Unlike the seawater, it does not contain salt. This is found in open but small bodies of water like rivers, lakes, creeks, and ponds. Surface water comes mostly from rain. Rainwater flows from land into streams and rivers. In cold countries, it also comes from snow. Great quantities of snow accumulate on highlands and mountains during winter. In spring, the snow melts and runs off into surface water.

3. **Groundwater** is found beneath the earth's surface. It comes from water that seeps into the ground. These accumulate in the underground layer called water table. Groundwater is the safe source of water. It is considered the cleanest water and contains plenty of dissolved minerals which the human body needs. Springs are openings of the groundwater directly to the earth's surface.

Other sources of water are clouds, icebergs, and glaciers. Clouds come from evaporating water. Glaciers and icebergs are solid water found only in very cold countries and contain about two-thirds of the earth's freshwater.

Lesson 60: Uses of Water in Our Daily Activities
Activity 1: "How Do You Use Me?"

Objective:

Explain the use of water in our daily activities.w

What you need:

- manila paper
- permanent marker
- paper tape
- colored papers or assorted construction paper
- old magazine
- a pair of scissors
- paste or glue
- information card

What to do:

1. Using the cooperative learning roles, assign each member a role.
2. Read the instruction card given to your group (provided by the teacher).
3. Using the materials, perform the activity assigned to your group for 15-20 minutes following step by step the instructions.

Group 1 – Role Play

Objective: Act out the uses of water in our daily activities

What to Do:

1. Assign one member to read the information card aloud;
2. Prepare a short script;
3. Assign a role to each member as actors or actresses;
4. Rehearse you presentation;
5. Use the materials above for your props; and
6. Be ready to perform it to the whole class.

Group 2 – Collage Making

Objective: Explain the uses of water in our daily activities through art.

What to Do:

1. Assign one member to read the information card aloud.
2. Use the old magazines and cut-out pictures that show how we use water every day.
3. Brainstorm with the group how will your output will look-like.
4. Paste them on the manila paper or cartolina.
5. Post it on the board.
6. Be ready to present it to the class.

Group 3 – Poem

Objective: Write a short poem on the uses of water in our daily activities.

What to Do:

1. Assign one member to read the information card aloud.
2. Together with the group, make a draft of your poem.
3. Finalize it and write it on the manila paper.
4. Post it on the board.
5. Be ready to present it to the class

Group 4 – Rap

Objective: Explain the uses of water in our daily activities through a rap.

What to Do:

1. Assign one member to read the information card aloud.
2. Take note/underline or copy the important words on the information card.
3. Prepare a script for your rap using the important words.
4. Finalize and rehearse it with the group.
5. Write it on the manila paper.
6. Post it on the board.
7. Be ready to present it to class.

Group 5 – Lyrical lesson

Objective: Explain the uses of water in our daily activities through a song.

What to Do:

1. Assign one member to read the information card aloud.
2. Take note/underline or copy the important words in the information.
3. Think of a familiar song and tune.
4. Change some of the lyrics of the original familiar song with the important words from the information card.
5. Compose now your new song.
6. Rehearse your new song with the group.
7. Write it on the manila paper.
8. Post it on the board.
9. Be ready to present it to the class.

Remember these:

Water is a renewable resource because of the water cycle. But a lot of places in the world and in our country do not have enough water because there are two problems with water: amount of distribution and quality or safety.

There are two important sources of water supply; surface water and ground water.

Uses of Freshwater

Freshwater is used for cleaning, washing, bathing, preparing food and other household uses. Freshwater sustains plant and animal life. It is used to water plants. It is given to animals to drink. Without water, plants will wither. Without water, animals and people will die of thirst.

Freshwater in rivers, lakes and springs is used for recreation. One can go swimming or boating in these places. Clean rivers and lakes are also a rich source of shrimps, crabs, and shellfish.

Rivers and lakes whose water is not very clean may still be useful. They can serve as routes of transportation for boats like ferry boats in the Pasig River. Water may also be used in farms for irrigation and livestock watering and in factories.

Uses of Seawater

Seawater is the habitat of aquatic plants and animals.

The oceans, seas, rivers, lakes, and ponds are the habitats of most of the aquatic plants and animals. These plants and animals are used mainly for food and medicine.

Lesson 61: The Importance of the Water Cycle
Activity 1: "How Important I Am in the Environment?"

Objective:

Describe the importance of the water cycle.

What you need:

- a mounted illustration of the water cycle
- manila paper and marker
- paper tape
- sentence strips or cartolina strips

What to do:

1. You are given 15-20 minutes to work on the activity.
2. Study the illustration given to your group.
3. Share ideas about be the importance of water cycle to man, animals and plants.
4. Write your ideas on the sentence strips or cartolina strips and paste/tape them on the manila paper
5. Post your output.
6. Be ready for reporting.

Guide Questions:

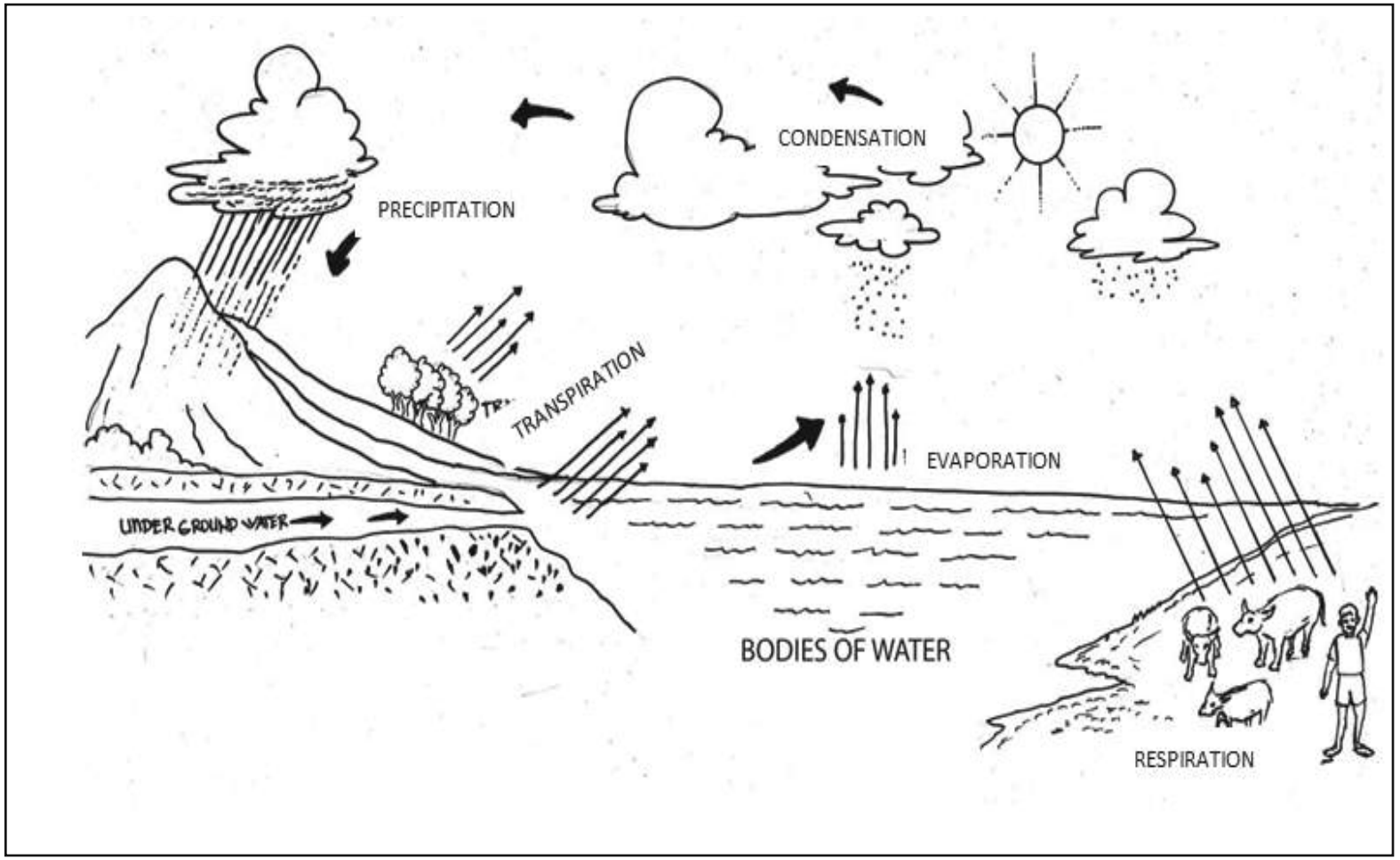
1. What does the illustration depict?
2. What are its importance to man? plants? animals?
3. Can life and other environmental processes continue without the water cycle? Why or why not?
4. Do you think balance in nature will be achieved if water cycle processes are not complete? Why do you think so?
5. Why is the water cycle important?

Remember these:

The water part of the earth is called ***hydrosphere*** or "water sphere". This covers three – fourths of its surface. Therefore, water covers a larger area of its surface than land. That is why the earth is called "the blue planet". Water gives the earth its characteristics of blue color as seen from outer space.

Water continuously moved in the earth's surface in a process called ***"water cycle"***.

Although there is a continuous cycle of water, you might wonder if there will come a time when we will run out of water. Do you know that about 97% of the water found in our surrounding is salty? Thus, only 3% of this water is fresh or potable. This very small amount of fresh water is 67% locked in the form of ice mainly found in Greenland and Antarctic. Therefore, only about 1% of freshwater is found in rivers, lakes, ponds, and in the atmosphere in the form of ***water vapor.***


CONDENSATION
PRECIPITATION
TRANSPIRATION
EVAPORATION
UNDER GROUND WATER
BODIES OF WATER
RESPIRATION

Water Cycle

Chapter 3- Weather
Lesson 62: Using Weather Instruments
Activity 1: “How Do You Use Me?”

Objective:

Use room thermometer to measure temperature

What you need:

- room/wall thermometer
- chart
- graphing paper
- marker

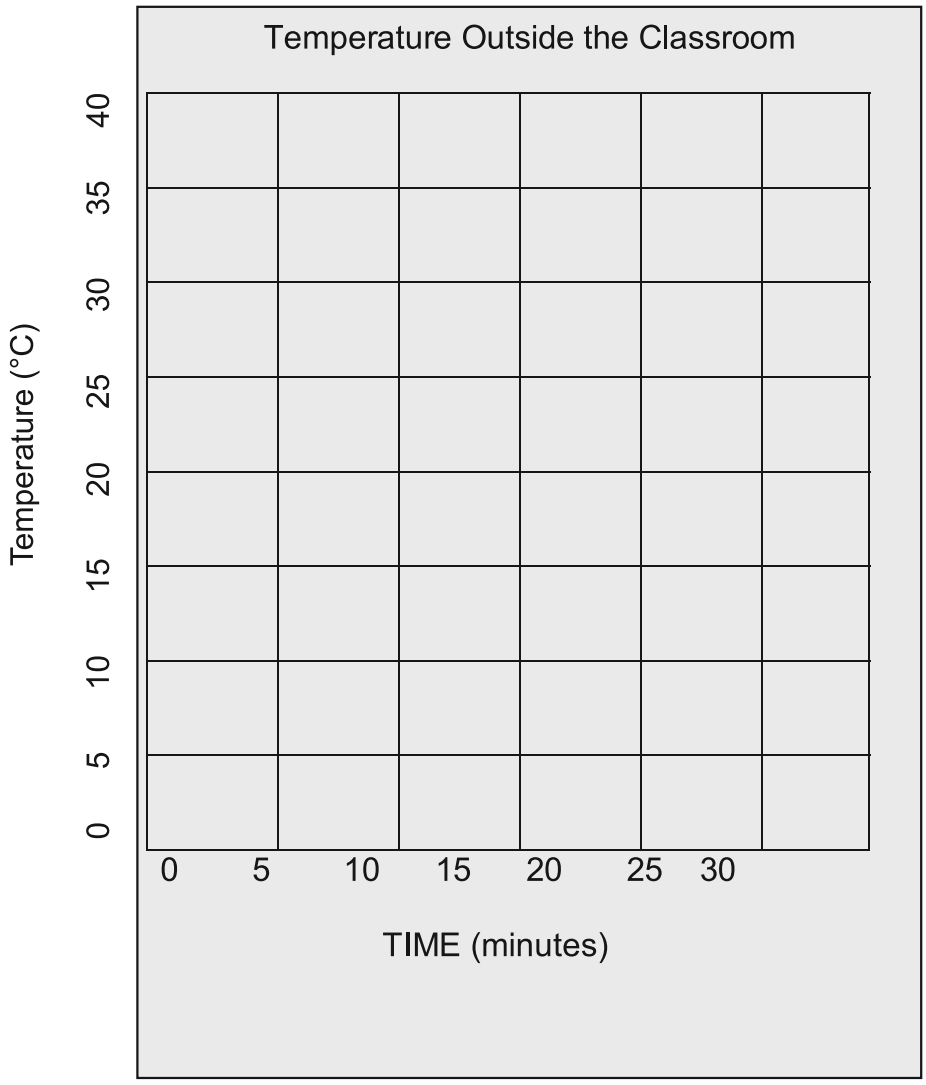
What to do:

1. Look at the drawing of a thermometer.

2. Get your thermometer.
3. What is the use of liquid inside it?
4. What do F and C means?
5. Why are there long and short lines?
6. What do you observe about the number under F and C?

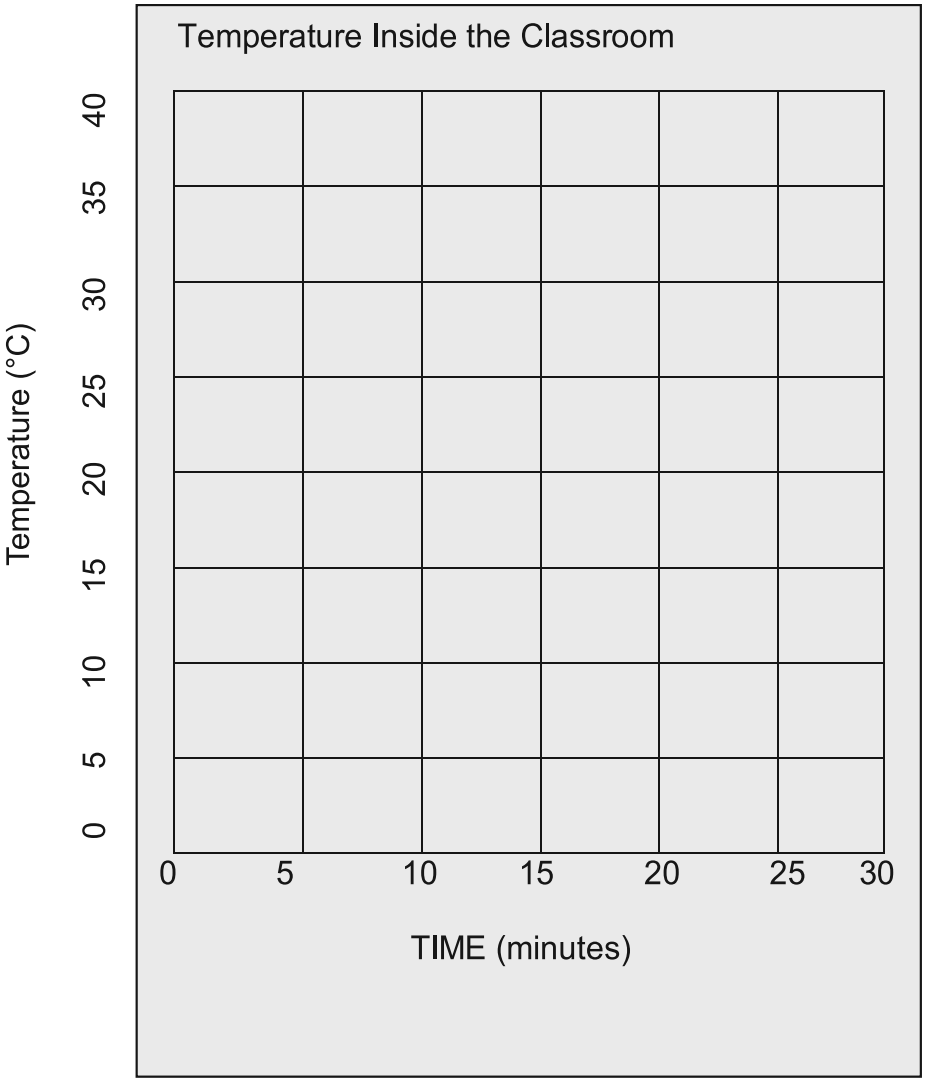
For Group I

1. Hang the thermometer outside the classroom under the shade of a tree.
2. Record your observations every five (5) minutes for thirty (30) minutes.
3. Plot the temperature every five (5) minutes on the graph provided. See #2 below.
4. Get the average of the temperature outside the classroom.
5. The average temperature is computed by adding all the temperature and dividing the sum with the number of readings/ observations.



For Group II

1. Hang the thermometer on the wall of the classroom.
2. Record your observations every five (5) minutes for thirty (30) minutes. The first reading is considered as the “0” minute.
3. Plot the temperature every five (5) on the graph provided.
4. Get the average of the temperature inside the classroom.
5. (See statement above about the computation of average temperature.)



Guide Questions:

1. What is the average temperature outside the classroom?
2. What is the average temperature inside the classroom?
3. Compare the air temperature readings inside and outside the classroom.
4. Are they the same at a particular time in different places?
5. What do these data tell you?

Remember these:

One of the ways to predict the weather is to measure the temperature is measured. A thermometer is used to measure air temperature. A room thermometer has numbers etched on each side. The left side shows the Celsius reading. Its highest number is 100 while its lowest is 0. Look at the red column of the thermometer. The number near the end of the red column tells the temperature of the air.

A thermometer may bear the Fahrenheit, the Celsius scale, or both. Air temperature is read in degrees Fahrenheit of 0F and degrees Celsius or 0C. The Fahrenheit scale is now seldom used. There are other kinds of thermometer such as clinical, room and scientific.

Temperature is the hotness and coldness of air around us. It differs from place to place. The angle at which the sun's rays strike the surface affects the temperature of a place. Places near the equator have high temperature because they receive direct rays of the sun.

The time of the day and time of the year also affect the air temperature.

Activity 2: "What Factors Affect the Day's Temperature?"

What you need:

- chart
- marker

What to do:

Study the chart below.

Weather Condition	Different Temperature at Various Times (in one's school yard)			
	6:00 a.m.	10:00 a.m.	12:00 n.n.	2:00 p.m.
fine	27°C	31°C	33°C	30°C
fair	26°C	28°C	29°C	27°C
rainy	23°C	24°C	25°C	24°C

Guide Questions:

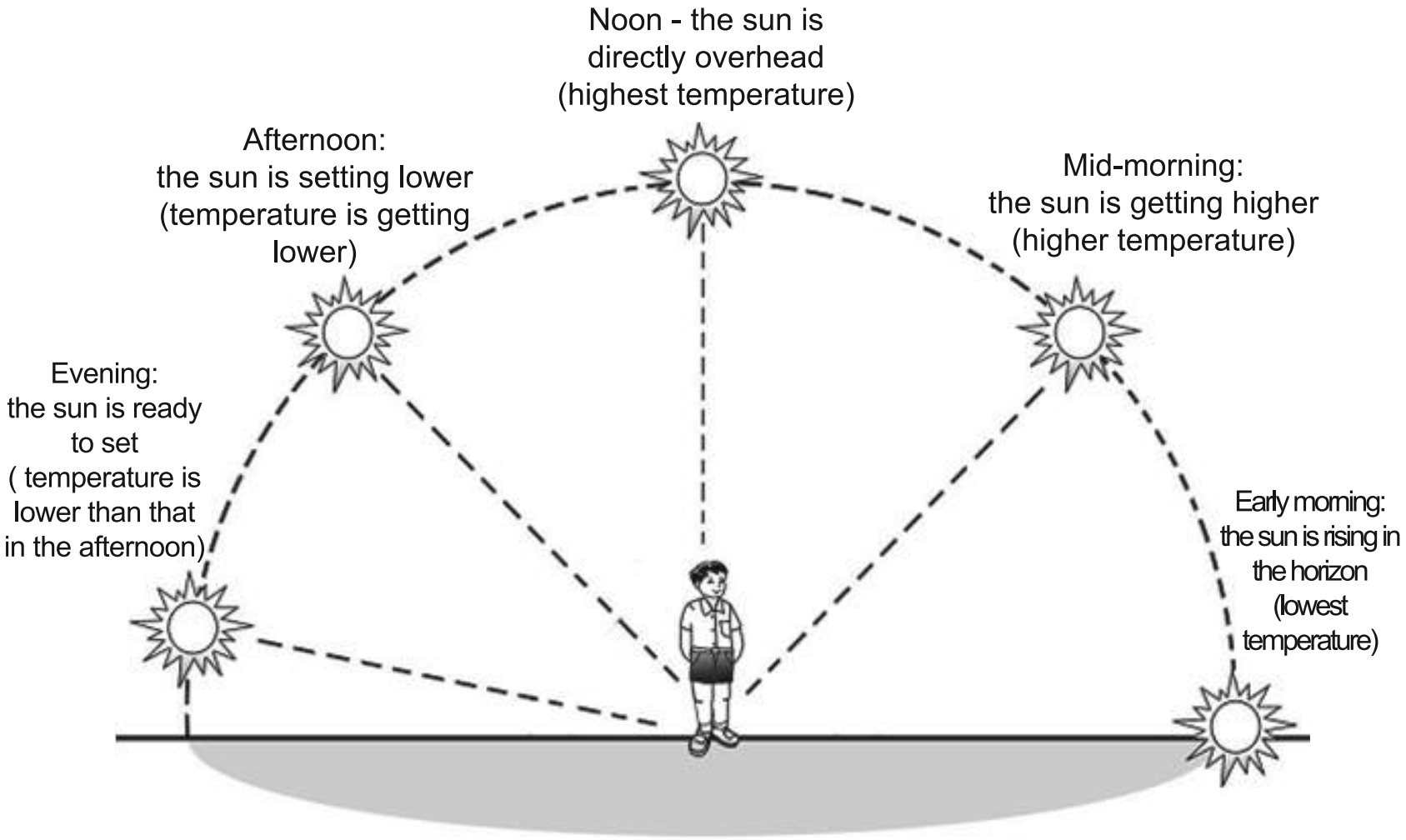
1. Compare the temperature readings during the fine, fair, and rainy weather conditions.
2. At what time of the day is the temperature at its highest?
3. At what time of the day is the temperature at its lowest?
4. At what weather condition are the temperatures high?
5. At what weather condition are the temperatures low?
6. What factors affect the day's temperature?

Remember these:

Time and weather conditions affect the day's temperature.

- The angle at which the sun's rays strike the surface affects the temperature of a place.
- When there is no weather disturbance:
  - Temperature is at its lowest in the morning
  - The temperature is high on a fine weather.
- The temperature is high on a fine weather.
- The temperature is low during rainy days.

Temperature in relation to the angle of sun's rays



Activity 3: “How Can You Tell the Direction of the Wind?”

Objective:

Use wind vane to tell the direction of the wind

What you need:

straw
scissors
ruler
plastic drinking cups with lid/cover
pebbles/sand
marking pen
glue

What to do:

1. **Cut a slit in each end of a drinking straw.** Take a straight BBO stick, and use scissors to cut a slit on each end. Make each slit about 1 cm (or 1/2 inch) long.

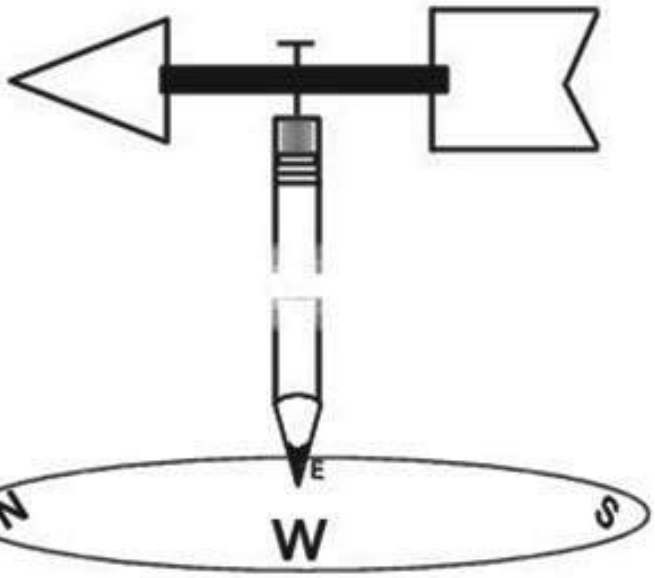
2. **Cut cardboard into a triangle and a square.** Make the triangle a wide "arrow" shape (isosceles), and keep it smaller than the square. Make the arrow about 5 cm (2 inch) long and the square about 7 cm (2.75 inch) on each side.

3. **Stick the paper triangle and square into the slots on the straw.** Put the triangle on one end, so it makes a point like an arrow. Put the square into the other slot.

4. **Fill a container with small rocks.** Take a plastic drinking cup or plastic container with a lid/cover. Fill this about half-way full with pebbles, sand or other heavy objects that will keep the wind vane from slipping. Put on the lid/cover tightly. Mark N, E, W, S on the side of the plastic cup as shown in the picture.

5. **Stick a pencil through the bottom of the container.** Pick a pencil with a rubber (an eraser) at one end. Turn the plastic container upside down and make a hole through the bottom. Stick the pencil through this hole, writing side down, and into the pebbles or sand to keep it from slipping.

6. **Stick a pin through the straw into the pencil rubber (the eraser).** Stick it through the center of the drinking straw, then into the pencil rubber (the eraser).



Guide Questions:

1. What happened to the arrow as the wind blew?
2. Which direction did the tail of your wind vane take?
3. Did the direction of the wind change after some time?

Remember these:

A ***wind vane*** is a device that tells the direction of the wind. Wind direction is the direction from which the wind is blowing.

The four letters E, W, N, S represent the four directions: East, West, North, and South. If the arrowhead of the wind vane faces the north direction, we say, the wind is blowing NORTH. It is the North wind. If it blows from the east, it is East wind. If the arrowhead points between North and East, we say, the wind is blowing Northeast.

Activity 4: "How Can You Tell the Speed of the Wind?"

Objective:

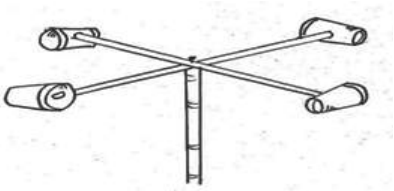
Use anemometer to tell the speed of the wind

What you need:

- 4 small identical plastic cups of the same color (1 cup marked with an X at the bottom)
- 4 pieces of identical sticks of equal diameter and length

What to do:

1. Get the four cups of the same sizes and four sticks of the same sizes and length.
2. Attach one cup to each of the sticks.
3. Mount the four pieces of wood on a pole by means of a long, thin nail. Make the hole bigger than the nail so that the sticks and the cups can easily spin.
4. Place the pole on a wooden base by nailing it so that the pole can stand.
5. Put your improvised anemometer at the center of the classroom.
6. Turn on the electric fan facing the improvised anemometer.
7. Adjust the button to change speed of the electric fan.
8. Count the number of spins the anemometer makes in two minutes.



Guide Questions:

1. What happened to the movement of the improvised anemometer as the speed of the electric fan was set to fast?
2. How does the improvised anemometer indicate the speed of the wind?

Remember these:

The speed of the wind may be fast or slow. Sometimes it blows gently but at other times it blows fast. An **anemometer** measures **wind speed.** There are four cups mounted on arms attached to a rotating shaft. The cups turn around as they are pushed by the wind. As the wind blows faster, the cups turn faster, too. When the wind blows gently, the cups of the anemometer turn slower. A change in speed indicates a change in wind speed.

Lesson 63: Observing Weather Conditions
Activity 1: “What Have You Observed?”

Objective:

Record the weather conditions

What you need:

charts, markers

What to do:

1. Observe the weather elements listed in the chart below.
2. Accomplish the weather chart given to your group.

Temperature	
Wind direction	
Wind speed	
Sky condition	
Other observations	

Guide Question:

1. Based on the data you gathered, what is the weather condition today? Explain.

Remember these:

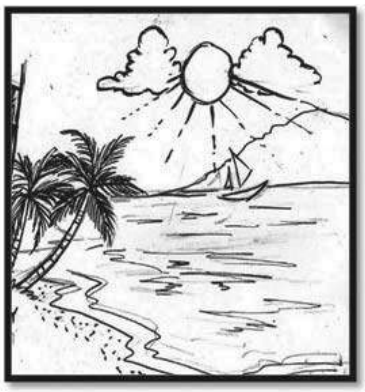
- Weather charts tell about weather components that determine the weather condition at any given time. The daily weather report will help you know the weather condition.
- Weather report is important. We should give accurate data on air temperature, wind speed and direction and the sky condition.
- Observing the weather condition will help us decide the kind of activities we will do for the day. Each one of us must care about the weather because our work depends on its condition for each day. Knowing the weather condition helps us to be safe and prepare for dangers and calamities.

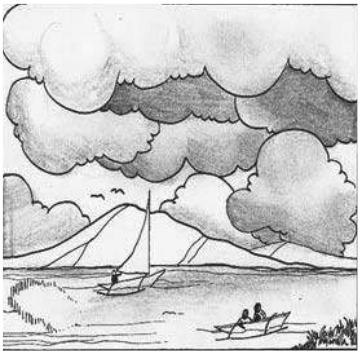
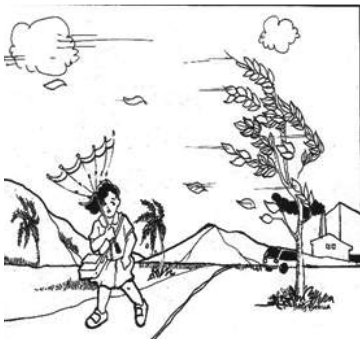
Activity 2: “What is the Weather Condition?”

What you need:
Weather charts, markers

What to do:

1. Look at the pictures below.
2. Infer the possible condition for each of the pictures.
3. Record your predictions on the chart provided for your group.

Day	Temperature	Wind Speed	Wind Direction	Cloud Formation
 sunny day				
Day	Temperature	Wind Speed	Wind Direction	Cloud Formation

Day	Temperature	Wind Speed	Wind Direction	Cloud Formation
				
				
				

Guide Question:

What are your bases in giving predictions for each weather condition?

Lesson 64: Making Simple Interpretations about the Weather

Activity 1: "Are the Weather Conditions the Same in Different Places and at Different Time?"

Objective:

Make simple interpretations about the weather as recorded in the weather chart

What you need:

- Weather charts

Weather Chart A

Date/Place	Time	Wind Speed	Wind Direction	Temperature	Sky Condition
Dec.29/Cebu	7:00AM	moderate	east	23°C	Fair to cloudy
April15/Cebu	7:00AM	light	north	28°C	clear

Weather Chart B

July 21	
Pampanga	fair sky condition, temperature ranges from 30°C-34°C, wind is blowing north
Tagaytay City	light to moderate northeast wind, sky is cloudy with brief rain shower, temperature is 20°C-24°C
Davao City	occasional rain shower and thunderstorm in the morning with moderate to strong easterly winds, temperature ranges from 25°C-30°C

Weather Chart C

Time: 10:00 A.M.	Metro Manila	Visayas	Mindanao
sky	cloudy	cloudy	clear
wind Speed	moderate	moderate	light
wind Direction	northeast	northeast	east
temperature	29°C	28°C	32°C

Weather Chart D

Time:3:00 P.M.	Manila	Bukidnon	Cebu
Temperature	28°C	12	20
wind speed	light	fast	moderate
wind Direction	south	southeast	east
sky covering	clear	cloudy	partly cloudy

What to do:

1. Study the weather chart assigned to your group.
2. Make simple interpretations about the weather based on the data recorded in it.

Guide Questions:

1. What are the data recorded in your weather chart?
2. What can you say about the weather in Cebu on the indicated dates and time?
3. How will you describe the weather conditions in Pampanga, Tagaytay City, and Davao City?
4. What can you say about the weather conditions in Metro Manila, Visayas, and Mindanao?
5. What can you say about the weather conditions in Metro Manila, Bukidnon, and Cebu?

Remember these:

- To make interpretation about the weather as recorded in the weather chart, we have to know the sky condition. The amount of cloud in the forecast area for the period of time will help us.
- We also have to look at the temperature (maximum or minimum) expected for the forecast period. Daytime maximum temperatures usually occur between 1-4pm. Night time minimum temperatures usually occur at or near sunrise.
- Wind speed and direction are important for monitoring and predicting weather patterns and global climate. Wind speed refers to how fast the wind blows. It is usually expressed in kilometre per hour. Wind direction describes the direction on a compass from which the wind emanates, for instance from the North or form the West. Shifts in wind direction may indicate changes in weather

Lesson 65: Identifying Safety Precautions during Different Weather Conditions

Activity 1: "How Can You Be Safe?"

Objective:

Identify safety precautions during sunny days, rainy days, windy days

What you need:

Activity charts

What to do:

1. List down below each picture (provided by the teacher) the things or the activities you are going to do to keep you safe during this kind of weather.

sunny days
1.
2.
3.
4.
5.

windy days
1.
2.
3.
4.
5.

rainy days
1.
2.
3.
4.
5.

Guide Questions:

1. What are the things/activities that you are going to do during this kind of weather?

2. What are the activities you should not do during this kind of weather? Choose your answers from the jumbled paper strips. (Match papers with different weather conditions.)

Do not burn dried leaves.

Do not play in the rain.

Do not expose yourself to too much heat of the sun.

Do not wear thin clothes.

Do not wade in dirty water.

Do not eat cold foods.

Do not go for a walk under the trees.

Do not wear thick clothes.

Activity 2: "Do You Know Me?"

Objective:

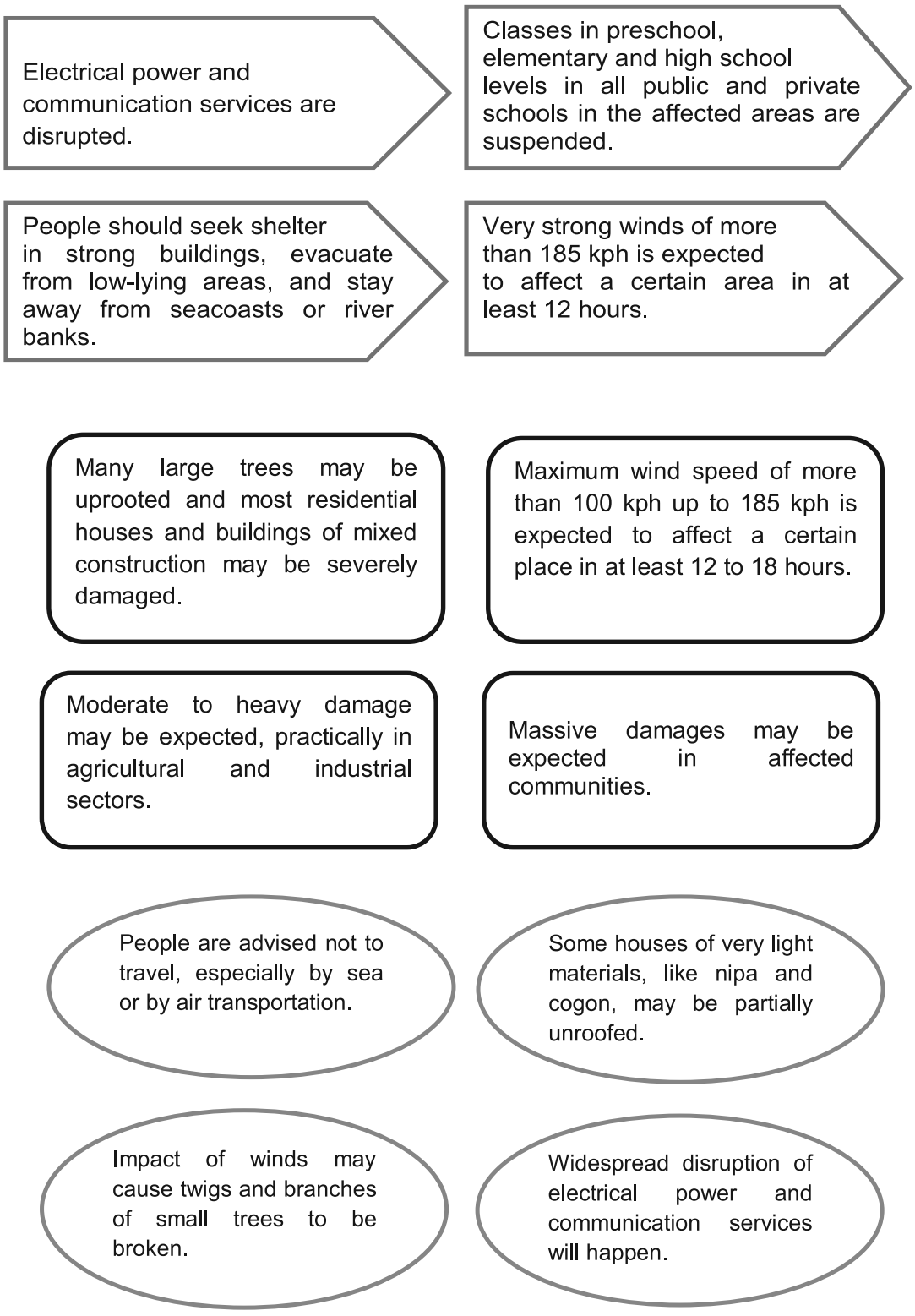
Tell the meaning of storm warning signals

What you need:

- manila paper
- paper strips
- masking tapes

What to do:

1. Look at the jumbled strips.
2. Read each situation.
3. Group the situations that belong to the same storm warning signal. Write your answers on the manila paper provided for you.
4. Each group is assigned to one storm signal.
   Group 1 - Storm Signal No. 1
   Group 2 - Storm Signal No. 2
   Group 3 - Storm Signal No. 3
   Group 4 - Storm Signal No. 4


Electrical power and communication services are disrupted.
Classes in preschool, elementary and high school levels in all public and private schools in the affected areas are suspended.
People should seek shelter in strong buildings, evacuate from low-lying areas, and stay away from seacoasts or river banks.
Very strong winds of more than 185 kph is expected to affect a certain area in at least 12 hours.
Many large trees may be uprooted and most residential houses and buildings of mixed construction may be severely damaged.
Maximum wind speed of more than 100 kph up to 185 kph is expected to affect a certain place in at least 12 to 18 hours.
Moderate to heavy damage may be expected, practically in agricultural and industrial sectors.
Massive damages may be expected in affected communities.
People are advised not to travel, especially by sea or by air transportation.
Some houses of very light materials, like nipa and cogon, may be partially unroofed.
Impact of winds may cause twigs and branches of small trees to be broken.
Widespread disruption of electrical power and communication services will happen.

There may be considerable damages to structures of light to medium construction.

Maximum wind speed is greater than 60 kph, but not more than 100 kph is expected to affect a certain place in at least 24 hours.

Classes in preschool levels in all public and private schools in affected communities are automatically suspended.

Classes in all levels are automatically suspended in affected communities.

Some coconut trees may be tilted or broken; few big trees may be uprooted.

Maximum wind speed of not more than 60 kph is expected to affect a certain place in at least 36 hours.

Guide Questions:

1. What are likely to happen if Storm Signal No. 1 is raised?
2. What are likely to happen if Storm Signal No. 2 is raised?
3. What are likely to happen if Storm Signal No. 3 is raised?
4. What are likely to happen if Storm Signal No. 4 is raised?

Activity 3: “Are You Prepared?”

Objective:

1. Identify safety precautions before a typhoon

What you need:

- Role playing props

What to do:

1. Group I - Role playing (What to do in the school before a typhoon?
2. Group II - Talk Show (Topic: What to do before a typhoon)
3. Group III - Role playing (What to do at home before a typhoon)

Guide Questions:

1. What are the things/activities you need to prepare before a typhoon comes?
2. Why is it important to know the precautionary measures before a typhoon comes?
3. To be safe or minimize destruction, what are we going to do before a typhoon?

Activity 4: “Are You Ready?”

Objective:

Identify safety precautions during typhoon

What you need:

- cartolina
- crayons
- pencil

What to do:

Group I - Role playing (What to do during a typhoon)
Group II - Poster-making (What to do during a typhoon)
Group III - News reporting (What to do during a typhoon)

Guide Questions:

1. What are the things/activities you need to do during a typhoon?
2. Why is it important to know the precautionary measures during a typhoon?
3. To be safe or minimize destruction, what are we going to do during a typhoon?

Activity 5: “Are You Safe?”

Objectives:

Identify safety precautions after a typhoon

What you need:

- Props for the role playing

What to do:

Group I - Role playing of what to do at home after a typhoon
Group II - Role playing of what to do in the school after a typhoon
Group III - Role playing of what to do in the community after a typhoon

Guide Questions:

1. What are the things/activities you need to do after a typhoon?
2. Why is it important to know the precautionary measures after a typhoon?
3. To be safe or minimize destruction, what are we going to do after a typhoon?

Remember these:

- We need to know weather conditions to keep us safe.
- We enjoy outdoor activities only if we have fine weather. Sports, field trips, kite flying, and camping are seldom held during rainy days. Weather helps you decide what games you play.
- Knowledge on the weather forecast for the day also helps us make necessary preparations.
- Weather helps us decide what clothes to wear. We feel comfortable wearing light colored thin clothes on warm weather and dark colored thick clothes and use thick blankets on cold weather.
- Weather also influenced the kind of food we eat and the activities we do every day.
- In case of stormy weather, we are advised to stay home and take the necessary precautions. We store enough food, prepare the flashlights, candles, water, and other needs in case there is a need for evacuation.

Chapter 4: The Sun

Lesson 66: The Importance of the Sun's Heat and Light

Activity 1: "What is the Importance of Sun's Heat and Light to Living Things?"

Objectives:

1. State that the sun is the main source of heat and light.
2. Explain the importance of the sun to living things.

What you need:

- 2 small ice cream cups
- shirt
- water
- cloth hanger
- thermometer
- manila paper
- marker
- scotch tape
- mongo seedlings (placed under sunlight for 5 days)
- mongo seedlings (placed inside the cabinet for 5 days)

What to do:

A.

1. Half fill the two (2) small ice cream cups with water.
2. Mark them A and B.
3. Measure the temperature of water in each cup with a laboratory thermometer
4. Copy the table below in your science notebook and record the temperature of the water in the appropriate space.
5. Place cup A directly under the sun for 30 minutes. Place cup B in the cabinet or any part of the room where sunlight cannot reach it.
6. After 30 minutes measure the temperature of water in cups A and cup B.

	Temperature reading of water	
	Before placing under the sun and in the cabinet	After placing under the sun and in the cabinet
Cup A		
Cup B		

B. Observe the 5- day old mongo seedling in can A (place under the sunlight) and can B (placed inside the cabinet) Compare the color the leaves of the two plants and their growth.

Guide Questions:

1. What is the initial temperature of the water in cup A and cup B?
2. Which cup of water has the higher temperature after 30 minutes? Why?
3. What is the cause of the increase in temperature of the water?
4. What did you observe with the wet shirt?
5. What do you think caused it to dry?

Remember these:

The **sun** is the main source of heat and light. It is made up of very hot gases. These gases are so hot that they glow. The sun's surface is about 5000 degrees Celsius and its temperature at the core is about 15000 degree Celsius. The sun's heat and light reaches the earth through radiation.

Almost all living things rely on the steady heat and light of the sun. We receive just the right amount of heat from the sun so living things survive. The sunlight brightens the earth and helps us see the things in our surroundings. Plants can undergo the process of "food making" called ***photosynthesis*** with the aid of the sunlight. Aside from that, the sun's heat warms the earth and affects the changes in temperature of the earth's surface causing the changes in the weather conditions.

Activity 2: "What Helps Us See?"

What you need:

- shoe box
- colored paper
- stone
- comb
- pencil
- marble

What to do:

1. Perform the activity in a dark room. If the windows and the door of your classroom are wooden you can close them to darken the room. If not, you can use the audiovisual room if available.
2. Get the shoebox from your teacher.
3. Open the box in the dark room. Can you see the objects?
4. Close the box and get out from the dark room quietly.
5. Now open the shoebox with your group mates. Can you see the objects?

Guide Questions:

1. Were you able to see the objects in the dark room? Why?
2. What did you see when you opened the box outside the room? Name the objects.
3. What did you observe when light strikes a clear plastic sheet?
4. What was formed and why? Why is light from the sun important?

Lesson 67: Light and Shadow

Activity 1: "How Are Shadows Formed?"

Objective:

Describe how shadows are formed.

What you need:

- dark room
- flashlight with new batteries
- a piece of card board (8 cm x 10 cm)
- a piece thin clear plastic sheet (8 cm x 10 cm)

What to do:

1. Close the windows and the door of your room.
2. Hold the cardboard 30 cm away from the wall of your room.
3. Assign a member of your group to hold the flashlight 30 cm away from the cardboard.
4. Switch on the flashlight and focus directly on the center of the cardboard.
5. Observe what happens and write your observations in your science activity notebook.
6. Repeat steps 2 and 5 with a piece of clear plastic sheet. Observe what happens.
7. Write your observations in your science activity notebooks.
8. Repeat steps 2 and 5 outside the classroom and observe what happens.
9. Write your observation in your science notebook.

Guide Questions:

1. What do you observe on the wall when light strikes an ob ject in the dark room? Describe what you observed.
2. Did you get the same result outside the classroom? Why?
3. What did you observe when light strikes a clear plastic sheet? What was formed an why?
4. What are shadows?
5. How are shadows formed?
6. Do all objects form shadows? Why?

Remember these:

• As the sun rises in the morning, or sets in the afternoon, it is low in the horizon. Its light rays are slanted as they hit the ground, so longer shadows are formed. When the sun is high or nearly above the horizon, the sunlight strikes the ground at nearly a right angle so shorter shadows are formed. When the sun is directly above the horizon, the light rays of the sun strikes directly above the objects so no visible shadow is seen on the ground since the shadow of the entire body would fit in its footprints.

• The changes in the position and length of shadows in the surroundings depend on the angle at which the sunlight strikes the object to the ground.

Activity 2: "Why Do Shadows Change in Position and Length?"

Objectives:

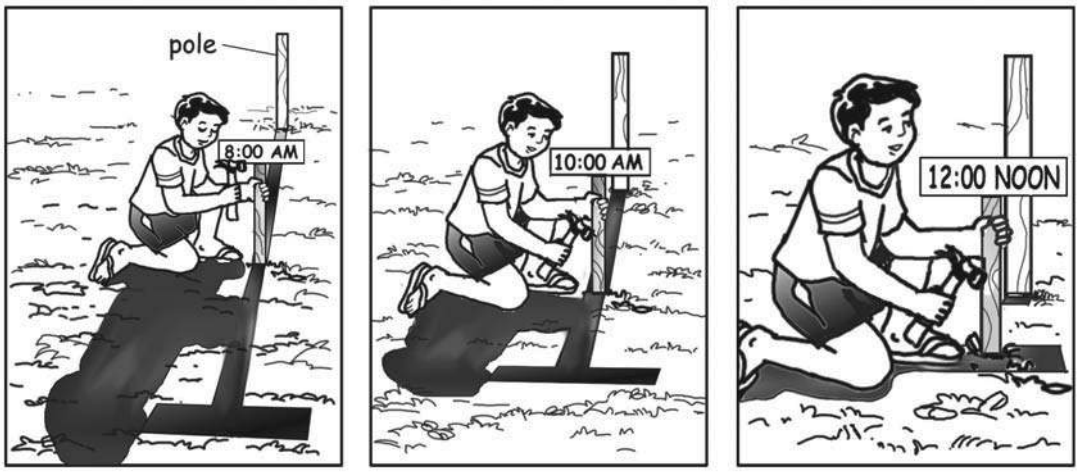
1. Describe the changes in position and length of the shadows in different times of the day.
2. Explain why the position and length of the shadow changes

What you need:

- one (1) meter bamboo pole
- meter stick
- 4 pieces 1 ft bamboo pegs
- manila paper
- marker
- wrist watch
- compass
- hammer

What to do:

1. Post a one (1) meter bamboo pole in your school ground.
2. Locate the East and West direction in your place with a compass.
3. Observe the position of the sun during the designated time.
4. Measure the length of shadow formed by the pole on the designated time of the day. See the table below for the designated time. Mark the length of each shadow with a peg. See the figure on the next page.
5. Calculate the difference between the actual length of the bamboo and the shadows formed in different times of the day.



Copy the table in your activity notebook and record your observations.

Time	Actual length of pole (cm)	Length of the shadow of the pole (cm)	Difference in length (cm)
8:00 am			
10:00am			
12:00nn			
2:00pm			

Guide Questions:

1. Describe the shadow of the pole at 8:00 am, 10:00 am, 12:00 noon and at 2:00 pm?
2. At what time is the shadow of the pole longest? Why is this so?
3. At what time is the shadow shortest? Why?
4. What did you observe with the position and length of shadows at different times of the day?
5. What have you noticed about its position at different times of the day? Did it stay in one place throughout the day?

6. What do you think would likely happen when you continue to measure the shadow of the pole until the sun had set at 6:00 P.M.? Do you think the pole forms its shadow? Why?
7. How do you relate the changes in position and length of shadows with that of the changes in position of the sun?
8. What does your activity imply in your day to day activities at home?

Remember these:

- In the morning, as the sun rises or sets in the afternoon, it is low on the horizon, its light rays are slanted as they hit the ground, so longer shadows are formed. When the sun is high or nearly above the horizon, the sunlight strikes the ground at nearly a right angle so shorter shadows are formed. When the sun is directly above the horizon, the light rays of the sun strike directly above the objects so no visible shadow is seen on the ground since the shadow of the entire body would fit in tis footsprints.
- The changes in the position and length of shadows in the surroundings depend on the angle at which the sunlight strikes the object to the ground.

Lesson 68: The Role of the Sun in the Water Cycle
Activity 1: "What Are the Processes?"

Objectives:

1. Observe the processes involved in the water cycle.
2. Define water cycle operationally.

What you need:

- improvised alcohol lamp
- crucible tong or test tube holder
- marker
- manila paper
- 100 mL water
- beaker or sardine can
- graduated cylinder or medicine cup
- improvised tripod

What to do:

1. Measure 100 mL of water and pour it into the beaker or sardine can.
2. Cover the beaker/sardine can with a foil.
3. Heats the water until it boils and observe what is coming out from the beaker.
4. Observe the changes in the water while boiling.
5. Let the water cool for at least 30 minutes.
6. Remove the foil cover and observe where you think these droplets came from.

Guide Questions:

1. What happened to the water when heated continuously?
2. What came out of the beaker/sardine can when water started boiling?
3. How do you call the process undergone by water when it changes from liquid to gas?
4. What did you see when you removed the foil cover. Where do you think the droplets of water came from?

5. How do you call the process when water vapour is changed to liquid water?
6. What did you notice with the droplets of water on the foil when you shook it? How do you call that process?
7. Describe water cycle in your own words.

Remember these:

Water come from many sources; bodies of water like oceans, seas, rivers, lakes, streams, etc, land, plants, animals and humans.

The sun plays the major role in the water cycle. It is the main source of heat on earth. When the earth's surface is heated, ***evaporation*** takes place in the bodies of water and on land. Water particles are released from the leaves of plants through ***transpiration***. Animals and humans give off water particles when they perspire and during ***respiration*** which evaporate in the atmosphere in lesser amounts. When water vapor in the atmosphere had cooled, ***condensation*** process takes place. The condensed water vapor is transported and move from one location to another in the atmosphere. When the condensed water vapor become heavy, it falls back to the earth in the form of rain, hail, snow, and sleet, this is called ***precipitation.***

When water falls back to the earth, it goes back to the bodies of water, and it may end up on land.When it ends up on land, it will become a part of ground water that animals and humans including plants can use, or it may run over the soil and collect it in the oceans, lakes, rivers where the cycle starts all over again. The water continues this cycle.

Water cycle is a continuous process of changing liquid water into water vapor (gas) when heated and back to liquid water when cooled.

Activity 2: “What’s My Role?”

Objectives:

1. Describe the role of the sun in the water cycle.
2. Explain the process of the water cycle

What you need:

- diagram of the water cycle
- marker
- manila paper

What to do:

1. Study the diagram of the water cycle.
2. Name the sources of water.
3. Write the process using the numbered parts of the water cycle diagram in your science activity notebook.
4. Arrange the scrambled words below to form the processes in the water cycle using the descriptive phrases as your clue.
5. Write a short paragraph to explain the water cycle shown in the diagram.

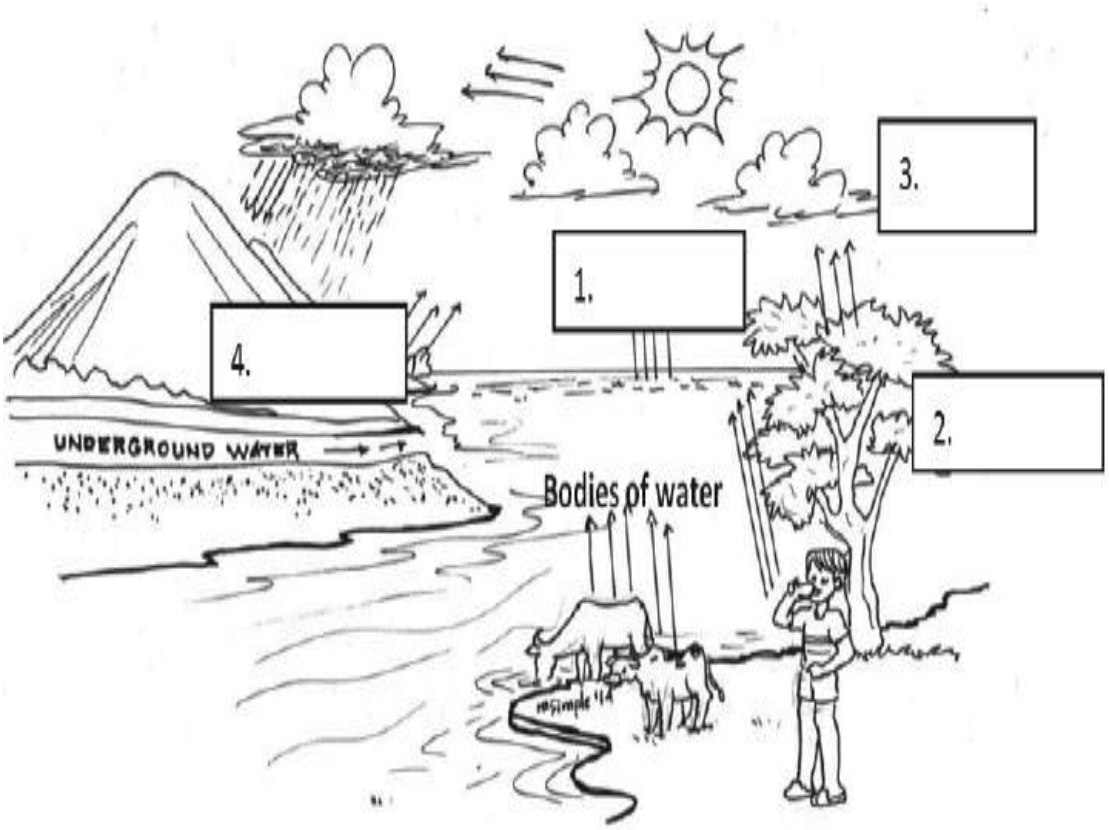


Figure 1: The Water Cycle

Arrange the scrambled words to form a new word. Write these words on the numbered part of the diagram:

R A T S P I N T A R I O N - is the process by which plants release water from their leaves.

T A T P O I N R E C I P – is the process by which the condensed water vapor falls back on the earth's surface in the forms of rain, hail, snow and sleet.

A S O N T E N D I C O N – is the process of changing water vapor (gas) into liquid water

T I N O PO V A E R A – is the process of changing liquid water into gas (water vapor)

Guide Questions:

1. Where does water come from as shown in the diagram?
2. What are the processes involved in the water cycle as shown in the numbered parts of the water cycle?
3. What is the role of the sun in the water cycle?
4. Which parts of the earth does greater evaporation takes place?
5. In which process do plants release water particles from their leaves?
6. How do animals and humans participate in the water cycle?
7. When does water vapor change to liquid?
8. What are the forms of precipitation that fall on the earth's surface?
9. Where does water go when it falls back to the earth?

Lesson 69: Effects of Sun's Heat and Light

Activity 1: "How Beneficial is the Sun's Heat and Light?"

Objectives:

1. Identify the beneficial effects of the sun's heat and light on living things.
2. Explain how the sun affects living things.

What you need:

- pictures of plants and animals and pictures of humans activities during sunny days
- manila paper
- marker

What to do:

1. Study the pictures and identify the benefits that living things can get from the sun.
2. Discuss with your group mates the beneficial effects of the sun on living things.
3. Write your group output on a manila paper and answer the guide questions below.

http://permaculturegloba l.org/post_projects/3386

http://www.ask.com/science/percent-sun-s-energy-plants-use-6a9055758e22e06a

http://www.theguardian.com/social-care-network/2012/aug/20/learning-disabilities-tips-family-holidays

http://newsinfo.inquirer.net/512237/harvest-decline-shows-in-ecija-as-few-workers-take-farm-jobs

http://www.thelongestwayhome.com/stories/the-philippine-salt-makers.html

http://slowtravelguidebook.com/philippines/

http://www.redbubble.com/people/davebubble/works/7640702-fish-drying-in-the-sun-gibitngil-island-cebu-philippines

http://betterphils.blogspot.com/2013/09/philippines-to-replace-imported-diesel.html

Guide Questions:

1. In what way is the sun beneficial to plants, animals and humans?
2. What activities of people that need sun's heat and light?
3. In what way is the sun's heat useful to farmers? Fishermen?

Remember these:

1. Plants can make their own food through the presence of sunlight in the photosynthetic process. Likewise animals and humans need the sun's heat and light energy in order to survive. With the presence of sunlight, humans can do a lot of activities such as laundry, harvesting, drying of crops, fishing and drying of fishes and recreational activities like outing/picnics.

   Harvesting and drying of crops, fishing, drying of fish, laundry/washing and drying of clothes, outing/ picnics, and other activities are related to human activities during sunny days.
2. Both the farmers and fishermen use the sun's heat in drying crops and fishes.

Day 2

Activity 2: "How Harmful is the Sun's Heat and Light on Living Things?"

Objectives:

1. Identify the harmful effects of the sun's heat and light to living things.
2. Explain how the sun affects living things

What you need:

- pictures of a boy with a burnt skin,
- potted plants with withered leaves
- pictures of dead animals
- picture depicting drought
- manila paper
- marker

What to do:

1. Study the pictures and identify the harmful effects of the sun's heat and light on living things.
2. Discuss with your group mates the harmful effects of sun's heat and light to living things.
3. Write your output on a manila paper and answer the guide questions.

http://growingchillies.net/revive-wilted-or-dehydrated-chili-plants

photobucket.com/images/dead%20decaying%20cow

http://www.theguardian.com/environment/gallery/2011/jun/28/2010-year-global-weirding

Guide Questions:

1. In what way is the sun's heat and light harmful to living things as shown in the pictures?
2. Why should you not look directly at the sun?
3. What happens to the soil or land during the dry and sunny seasons? What could be its effects on living things?
4. Are lakes, rivers and streams also affected?

Remember these:

1. Excessive exposure to sunlight can burn or harm the skin. This is called sunburn. Too much heat of the sun can cause the withering of the plants and eventually they die. Animals are badly affected when there is no food for them and exposure to intense heat can cause them to become ill and eventually die.
2. We should not look directly at the sun because it can damage our eyes.
3. The soil will become very dry and can crack causing the plants to die. Farming also is not possible

Lesson 70: Practice Safety Precautions on the Effects of the Sun

Activity 1: "Am I Protected?"

Objective:

Practice safety precautions to protect us from the negative effects of the sun.

What you need:

- activity cards
- manila paper
- marker

What to do:

1. Read the activity card assign to your group.

Activity Card # 1- GROUP 1
You have a family outing in a beach. How can you protect your eyes from the glare of the sun?

Activity Card # 2 - GROUP 2
You will help your father in harvesting your corn. What should you wear to protect you from the intense heat of the sun?

Activity Card # 3 - GROUP 3
You will go on swimming with your friends this weekends, what should you do to avoid sun-burn.

Activity Card # 4 – GROUP 4

You are hiking back and forth in going to school. What should you bring to protect you from the sun's heat and light during sunny days?

2. Brainstorm on how to act out/role play the situation given.
3. Present your role play in 5 minutes

Guide Questions:

1. What should you wear to protect you from the intense heat of the sun?
2. When you go for an outing or swimming what should you wear to protect your eyes from the glares of the sun?
3. What should you apply on your skin to protect you from sunburn?
4. If you work in the farm, what should you wear to protect you from the intense heat of the sun?
5. What should you do to protect yourself from the harmful effects of the sun?

Remember these:

The sun gives off heat and light. Too much exposure to sun's heat and light can be harmful. It can cause sunburn. The ultra violet rays can damage skin cells too. Very bright light can also harm our eyes.

These are some ways of protecting ourselves from the excessive sun's heat and light.

1. Wear a cap or wide brimmed hat during sunny days.
2. Carry along an umbrella to protect you from the intense heat of the sun.

3. Wear sunglasses when playing on beaches while the sun is too hot.
4. Apply sunscreen or lotion which protects your skin from sunburn when you go for swimming.
5. Wear clothes which protect the skin of your hand and feet while working under the heat of the sun (like gardening, plowing, planting, harvesting etc.)

Seek out the shade and avoid exposure during hours of peak sunlight