JANUARY
Makugihon
FEBRUARY
Mahigugmaon
MARCH
Matinabangon
APRIL
Matinahuron
MAY
Mahapsay og Malimpyo
JUNE
Maabtik og Musunod sa Ihsaktong Oras
JULY
Maantigo og Maabilidad
AUGUST
Maginhunahunaon para sa Uban
SEPTEMBER
Madaginoton
OCTOBER
Matinud-anon
NOVEMBER
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DECEMBER
Maalampuon

Republic of the Philippines

Department of Education

Regional Office IX, Zamboanga Peninsula

Zest for Progress

Zeal of Partnership

5

Science

Quarter 4 - Module 4
Weather Disturbances

Name of Learner: _____

Grade & Section: _____

Name of School: _____

What I Need to Know

This module is written to help you identify all the types of **weather disturbances in the Philippines and describe their effects to daily life.** After going through this module, you are expected to:

1. Characterize weather disturbances in the Philippines and describe their effects to daily life;

In the past ten years, there have been numerous destructive storms that have passed the Philippines. We experienced storms that brought heavy rainfall and strong winds. These storms destroyed many things and even caused the death of some people. Do you have an idea how these storms happen? What causes them to form?

What's In

Score: _____ 5

Activity 1: Types of Weather Disturbances

Learning Intention: To give the ways to prevent/control soil erosion due to different kinds of weather disturbances.

A. Give 5 ways to control soil erosion. Write your answer on the blank provided.

1. _____

2. _____

3. _____

4. _____

5. _____

What's New

These simple science activities demonstrate how air moves during weather disturbances.

Activity 2: Air Movement

Score: _____ 10

Science Skills: Observing, Communicating
You will need:

- One clear plastic container (shoebox size)
- Two tablespoon red food coloring
- Two tablespoon blue food coloring
- ice cubes
- blue and red colored pencils

What to Do:

1. Fill a plastic rectangular food container with 2/3 full of tap water. Let it stay for 30 seconds to make it still.
2. While waiting for the water to be still, put two drops of blue food coloring to the ice cubes. Make sure it will color the ice cubes.
3. Slowly place the blue ice cubes at one end of the container.
4. Add two drops of red coloring to the water at the opposite end of the container. Be careful not to disturb the water.
5. Observe how the blue and red food coloring moves.
6. Now, using the red and blue colored pencils, draw what you have observed.

Guide Question:

1. What does the activity imply?

_____

_____

_____

2. What did you observe in the movement of the red and blue food coloring in the water?

_____

_____

_____

Score: _____ 10

Activity 3: Let's Analyze

Directions: Write **True** if the statement is an effect of weather disturbances and **False** if not.

_____1. Crops are destroyed because of cyclone.

_____2. Houses are washed out due to heavy rainfall.

_____3. Abundant harvest because of typhoon.

_____4. Trees and plants are uprooted because of strong winds.

_____5. Flash floods and landslides may occur due to heavy rainfall.

_____6. Widespread disruption of electrical power and communication services due to strong winds.

_____7. Because of typhoon, large number of nipa and cogon houses may be totally unroofed.

_____8. Storm surge occurs due to abnormally high ocean tides because of heavy rainfall and strong winds.

_____9. Outdoor activities are postponed because of tropical cyclone.

_____10. Because of flash floods and landslides, children are allowed to swim and play.

What is it

Weather Disturbances

Low Pressure Area (LPA) and High Pressure Area (HPA)

This refers to the weight of the air that is pressing down on Earth. An abrupt change in the air pressure can trigger weather disturbances. Convection, or the rising of warm air and sinking of cold air, explains how a high pressure area and a low pressure area are formed.

When cold air sinks, it results to a **high pressure area**. Since most of the air is pressing down, the air on the surface becomes dry. Formation of a high pressure area indicates fair weather; fewer clouds are found on the sky. But when warm air rises, less air presses downward, resulting in the formation of a **low pressure area**. As the air continuously rises, it will eventually cool, condense, and form clouds. The formation of a low pressure area indicates the possibility of rain. There is a higher chance of rain when more clouds are formed. An LPA can result to weather disturbances, rains and strong winds are brought about by low pressure.

Tropical Cyclone

In a cyclone, the cool air flows to take the place of the rising warm air. As a result, the air current spins. The wind spirals around to the center of the cyclone. This center is called the **eye**. It is surrounded by bands of clouds and winds. When a cyclone is formed over the tropics, it is called a **tropical cyclone**.

Tropical cyclones that occur within the Philippine Area of Responsibility (PAR) develop in two areas. These areas are in the Pacific Ocean and in the West Philippine Sea.

The Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) keep track of cyclones that enter the Philippine Area of Responsibility.

A cyclone intensifies when it is located over warm tropical waters. It weakens as it moves inland. The intensity of tropical cyclones varies. Thus, we classify them according to their degree of intensity.

The classifications of tropical cyclones according to strength of winds are as follows:

Tropical Disturbance

It is an isolated weather system with an apparent circulation. It is characterized by a poorly developed wind circulation. This is commonly observed throughout the wet tropics and subtropics.

Tropical Depression

It is a weak low pressure disturbance with a definite surface circulation. A tropical depression has a maximum wind speed of up to 61 kilometers per hour (kph). It is most common in the equatorial region or the intertropical convergence zone (ITCZ). The ITCZ is the belt of low pressure which circles the Earth generally near the equator.

Tropical Storm

Once a tropical depression has intensified, it becomes a tropical storm. A tropical storm is a moderate tropical cyclone with maximum wind speed of 62 to 88 kph. A tropical storm is more organized and more circular in shape.

Typhoon

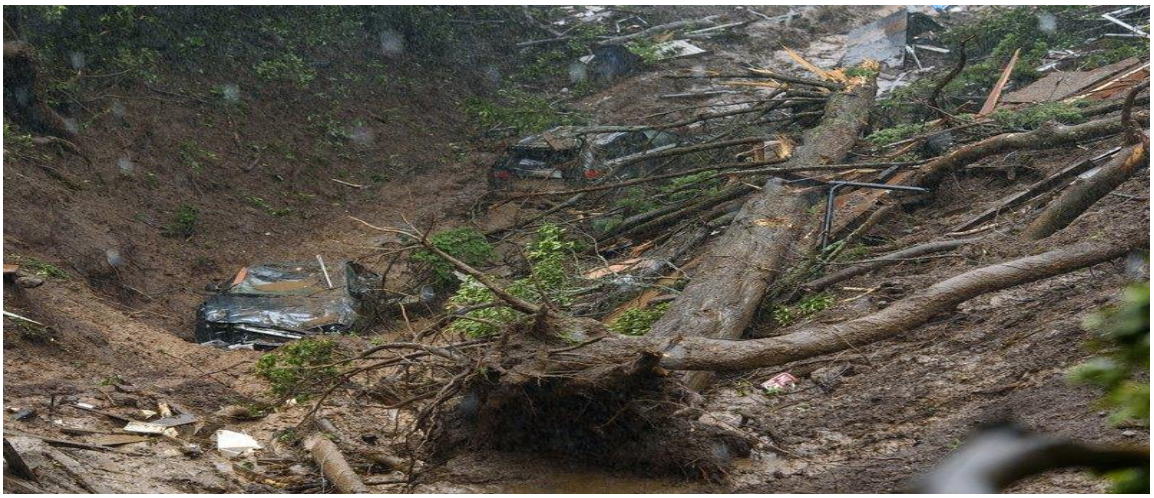
It is an intense tropical cyclone with the maximum wind speed of 118 to 220 kph. Most of the time, a typhoon is accompanied by heavy rains and strong winds.

Effects of weather disturbances in our daily life

Weather disturbances are devastating. It can cause damage to our life and properties. Heavy winds can destroy power and communication lines. Roads and bridges are also damaged due to heavy rainfall and flooding. Weather disturbances can also destroy our means of livelihood. Heavy rains and strong winds can uproot trees and destroy our crops that provide us with food. This is why there is always a food shortage when there is a typhoon.

During a typhoon, the sky is dark and cloudy. Heavy rainfall accompanied by strong winds occurs. Big waves are also observed near the coast. When these waves become unusually high due to abnormally high ocean tides, a storm surge occurs.

We cannot change the path of the typhoon or stop it from coming. But we can always prepare for it. PAGASA, with its modern technology, can assess and monitor any upcoming typhoon. Once we already have all the information about it, we can now prepare ourselves for it and lessen the possible damages that the weather disturbance may bring.



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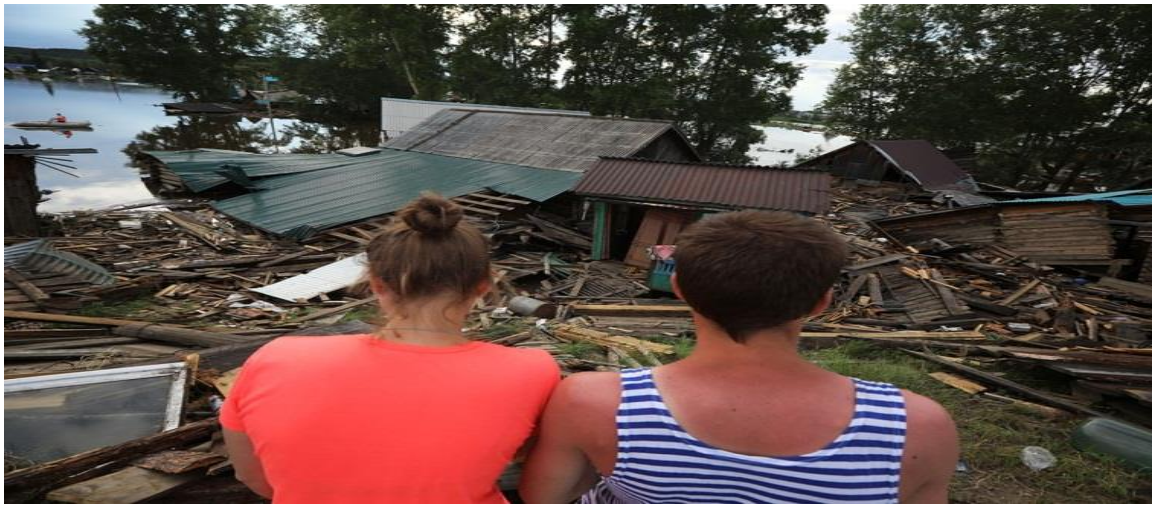

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What's More

Score: _____ 10

Activity 4: Let's answer it

Directions: Draw ☺ if the statement is correct and ☹ if not. Write your answer on the blank provided.

_____1. Typhoon is an isolated weather system with an apparent circulation.

_____2. Due to heavy rainfall houses are washed out.

_____3. Crops cannot be destroyed because of cyclone.

_____4. Philippine Area of Responsibility is also known as PAOF.

_____5. Tropical cyclone is formed over the tropics.

_____6. Children are advised to play outside whenever there is a typhoon.

_____7. Nipa and cogon houses may be totally unroofed because of heavy rainfall and strong winds.

_____8. Heavy rainfall can cause flash floods and landslides.

_____9. Typhoon is an intense tropical cyclone with the maximum wind speed of 60 to 120 kph.

_____10. Outdoor activities and parties are not postponed because of tropical cyclone.

What I Have Learned

Score: _____ 10

Activity 5: Let's fill it

Let us check what you have learned about weather disturbances and their effects in our daily life through completing the table below.

Directions: Fill the table with different weather disturbances and its effect in our daily life.

Weather Disturbances	Effects in our Daily Life

What I Can Do

Score: _____ 15

Activity 6: Let's see what you have learned!

Directions: Answer the questions briefly.

1. Describe the different weather disturbances?

_____

_____

_____

2. How will you differentiate High Pressure Area and Low Pressure Area?

_____

_____

_____

3. What is the importance of knowing the effects of weather disturbances in our daily life?

_____

_____

_____

Assessment

Score: _____ 10

Directions: Encircle the letter of the best answer.

1. What is formed when warm air rises and less air presses downward?
   a. high pressure area
   b. typhoon
   c. low pressure area
   d. tropical storm

2. A cyclone formed in the tropics?
   a. low pressure area
   b. tropical disturbance
   c. tropical depression
   d. tropical cyclone

3. It is a weak low pressure disturbance with a definite surface circulation?
   a. tropical depression
   b. tropical disturbance
   c. typhoon
   d. tropical cyclone

4. It is an intense cyclone with maximum wind speed of 118 to 220 kph?
   a. tropical cyclone
   b. tropical disturbance
   c. typhoon
   d. high pressure area

5. What is being formed when cold air sinks?
    a. tropical cyclone
    b. high pressure area
    c. low pressure area
    d. tropical depression

6. What is called to the center of the cyclone?
    a. eye
    b. nose
    c. head
    d. face
7. Can be trees uprooted during a typhoon?
    a. No
    b. Yes

8. What agency that keeps track of cyclones that enter the Philippines?
    a. PAR
    b. ICTZ
    c. LPA
    d. PAGASA

9. It is a moderate tropical cyclone with maximum wind speed of 62 to 88 kph?
    a. tropical cyclone
    b. typhoon
    c. tropical storm
    d. tropical disturbance

10. Can weather disturbances pose danger in our daily life?
    a. Yes
    b. No

References

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Region IX Hymn

OUR EDEN LAND

Here the trees and flowers bloom, Here the breezes gently blow,
Here the birds sing merrily,
And liberty forever stays,

Here the Badjaos swam the seas,
Here the Samals live in peace,
Here the Tausogs thrive so free,
With the Yakans in unity.

Gallant men And Ladies fair,
Linger with love and care,

Golden beams of sunrise and sunset,
Are visions you'll never forget.
Oh! That's Region IX...

Hardworking people abound,
Every valley and dale
Zamboangenos, Tagalogs, Bicolanos, Cebuanos, Ilocanos, Subanens, Boholanos, Illongos,
All of them are proud and true
Region IX our Eden Land.

Region IX, our Eden Land.

Activity 1-A.
1. Contour Plowing
2. Strip Cropping
3. Terracing
4. Crop Rotation
5. Riprapping

Activity 2
1. The activity implied that fluids with different temperatures tend to move differently. Fluids with lower temperature tend to move downward while fluids with higher temperature ends to rise.
2. The blue food coloring moved to the bottom of the plastic container while the red food coloring moved to the upper portion of the container.

Activity 3
1. True
2. True
3. False
4. True
5. True
6. True
7. True
8. True
9. True
10. False

Activity 4
1. Happy
2. Happy
3. Sad
4. Sad
5. Happy
6. Sad
7. Happy
8. Happy
9. Sad
10. Sad

Assessment
1. c
2. d
3. a
4. c
5. b
6. a
7. b
8. d
9. c
10. a

Activity 5
Example:
Weather Disturbances - Effects in our Daily Life
Typhoon - Destroyed properties and crops

Activity 6
Answer may vary

Answer Key