



# Science 4 **Microlearning Module**

# **QUARTER 4 – Module 5**

Use of Weather Instruments





**REGION XII - DIVISION OF SULTAN KUDARAT** 

#### Science 4 Microlearning Module (MLM) Quarter 4 – Module 5: Use of Weather Instruments First Edition, 2024

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#### **MICROLEARNING MODULE**

Name:		Grade & Sec:		Score:
Subject:	Science 4	Quarter:	4	MLM No5
Teacher:				
Competency:	The learners use record some of school day	weather instrum the characteris	ments t tics of	o measure and weather during a

#### **Use of Weather Instruments**

#### A. Look Back!

Our weather condition is determined by some basic characteristics used to change the weather. To measure how much you have learned from your past lesson, do this activity.

**Directions:** Read the sentences carefully and choose the letter of the correct answer. Write your answer on a separate sheet of paper.

- 1. It is the hydrological cycle described as the continuous movement of water on, above, and below the surface of the Earth.
- A. land cycle B. life cycle C. water cycle D. water vapor 2. It is the type of vaporization that occurs on the surface of the liquid as it changes into the gas phase.

A. condensation B. evaporation C. infiltration D. precipitation

3. It is any product of condensation of atmospheric water vapor that falls under gravity from clouds.

A. condensation B. evaporation C. infiltration D. precipitation

- 4. It is the general condition of the atmosphere at a particular time and place.
- A. condition B. pressure C. wather D.temperature 5. What causes wind?
- A. earth's rotation B. hail C. pressure difference D. rain

#### **B. What's New?**

A meteorologist is a person who studies the weather. They use different kinds of instruments to collect data before they can predict the weather. The accuracy of measuring instruments has not changed greatly but the ability to analyze large amounts of information has allowed for more accurate and precise weather forecasts. **Directions:** Name the following weather instruments by arranging the scrambled letters. Write your answer on a separate sheet of paper.

Illustration of the	Scrambled letters	Name of the instrument
instrument		
1.	EMNOETAMRE	
2.	IDNW ANVE	
3.	HOTEMRTEME	
4.	NIDW COSK	
5.	MGOYETREHR	

# C. What Is It?

**Weather instruments** are tools used to gather and record information about various weather conditions.



**Anemometer** is an instrument used to find out how fast the wind is blowing. Four cups are attached by crossed rods on the top of a pole. As the wind hits the cups, they begin to spin. The harder the wind blows, the faster the cups spin. It has a speedometer that measures the wind speed in kilometers per hour.



**Wind Vane** is a device that measures the direction of the wind. It spins on a rod and points in the direction from which the wind blows. The part of the vane that turns into the wind is usually shaped like an arrow. The other end is wide so it will catch the smallest breeze.



**A Wind Sock** is a light flexible cylinder or cone mounted on a mast to show the direction and strength of the wind. The wind sock is commonly used at an airport or chemical plant. The cone-shaped opened at both ends so that it extends horizontally as the wind blows through it and indicates the wind direction by pointing away from the wind.



**A Barometer** is a device that measures air pressure in the area. It shows whether the pressure is rising or falling. An increasing barometer indicates sunny, dry weather, while a falling barometer indicates stormy wet weather. There are two types of barometer; the mercury barometer and the aneroid barometer. The mercury barometer is more accurate than the aneroid barometer.



**Hygrometer is** an instrument used to measure the humidity or amount of water vapor in the atmosphere.



**A Thermometer** measures how hot or cold the atmosphere is in Celsius (C) or Fahrenheit (F) or Kelvin (K). A traditional thermometer consists of mercury, red spirit or green a glass tube and operates on the principle that the liquid expands more than the glass does when heated.



**Rain Gauge** is an instrument that measures the amount of rain that falls during a given time interval. It measures all forms of precipitation. It is placed in an open space.

# D. Let's try!

# **Activity 1: Eco-Friendly Edition**

Materials: 4 plastic cups, 1 paper cup, glue, pen or marker

1 long wooden stick, big empty can

Procedures: How to make an instrument.

- 1. Take the plastic cups and use scissors to carefully cut off the bottoms.
- 2. Attach the cup to the wooden stick, ensuring it at the center.
- 3. Take the paper cup and cut off the bottom then cut a vertical slit from the bottom to the rim.
- 4. Fold the paper cup into a cone shape, overlapping the slit to create a pointer and use glue to secure the cone shape.
- 5. Write the cardinal directions (N, S, E, W) on each side of the cone using the marker or pen.
- 6. Attach the wind direction indicator to the top of the wooden stick, just above the plastic cups.
- 7. Put soil in a big can and fix the wooden stick at the center.

Criteria	Excellent (5 pts)	Good (3 pts)	Fair (1 pts)	Score
Presentation	The output is well presented and the objective is met.	The output is well presented but the objective is not met.	The output fails to meet the objective.	
Creativity	The output is creatively made and the concept is clear.	The output is creatively made but the concept is unclear.	The output is not creatively made and the concept is unclear.	

#### Rubrics for the Weather Instrument

Guide questions

- 1. Why is it important to label the cardinal directions (N,S,E,W) on the wind direction indicator? y
- 2. How can using plastic cups and paper cup contribute to environmental sustainability?

Once you've completed the instrument, you can use it to measure wind speed and direction by following these steps:

- 1. Find an open area outside, where the wind is not obstructed.
- 2. Place the instrument, ensuring the wind cups are facing into the wind.
- 3. Observe the direction in which the wind cups rotate. This indicates the wind direction.
- 4. Count the number of rotations the wind cups make in a specific time frame (e.g., 1 minute).
- 5. Use the rotations per minute to estimate the wind speed.

Using the instrument you made, observe and record the speed and direction of the wind in your place. Use the table below to record your observations by putting checkmark on the appropriate column. Do the observations in three successive periods following the time reflected on the table.

Speed	Fast		Moderate		Slow		Very Slow		Score				
	1	2	3	1	2	3	1	2	3	1	2	3	
7:00 am													
12:00 noon													
5:00 pm													
Direction	Not	rth		Sou	ith		Eas	st		We	st		
7:00 am													
12:00 noon													
5:00 pm													

**Guide Questions** 

1. In which part of the day does the wind blows fast? How can you inspire others to use recyclable materials to create their wind-measuring instrument? 2. Why is measuring the speed of the wind necessary in planning our activities?

# E. Let's Evaluate

**Directions**: Read the questions carefully and choose the letter of the correct answer. Write your answer on a separate sheet of paper.

- Scientists who study weather conditions.

   A. Biologist
   B. Meteorologist
   C. Paleontologist
   D. Sociologist

   This instrument measures the amount of precipitation.

   A. barometer
   B. rain gaug
   C. thermometer
   D. wind vane
- 3. The weather instrument that measures air pressure.A. anemometer B. barometer C. rain gauge D. wind vane
- 4. What weather instrument measures humidity?A. anemometer B. barometer C. hygrometer D. wind vane
- 5. Which instrument would be most useful at an airport for indicating wind conditions to pilots?
  - A. hygrometer B. rain gauge C. thermometer D. windsock
- 6. Which of the following is NOT an instrument used by a meteorologist?A. anemometer B. barometer C. rain gauge D. x-ray machine
- 7. How does a thermometer operate, and what does it measure?
  - A. by spinning cups; measure air pressure
  - B. by expanding glass; measures wind speed
  - C. by expanding liquid; measures air temperature
  - D. by extending horizontally; measures humidity
- 8. In what direction does a wind point?
  - A. where the wind is blowing to
  - B. where the wind was yesterday
  - C. where the wind is coming from
  - D. where the wind will be tomorrow

- 9. How does a wind sock indicate wind direction?
  - A. by spinning on a rod
  - B. by extending horizontally
  - C. by pointing away from the wind
  - D. by catching the smallest breeze
- 10. Why is a wind vane shaped like an arrow at one end?
  - A. to indicate humidity levels
  - B. to catch the smallest breeze
  - C. to measure air pressure changes
  - D. to measure wind speed accurately

# **E.** References

Ignacio, Milagros S. et al 2014. *Investigating Life's Wonders*. Las Piñas City: AVESDA Publishing

Tapay, Katrina B.2021. Weather Instruments and Safety Precautions on Different Weather Conditions.Edited by Jenny Lynne Aguilar.1253 Gregorio Araneta Ave, Quezon City, Metro Manila: Vibal Group, Inc.

https://www.youtube.com/watch?v=b574EU4Om2g

https://weather.gov.dm/resources/weather-elements-and instruments- used-for-measurement

# Answer Key

Grade 4 Science Quarter 4 MLM No. 5

# A. Look Back!

- 1. C
- 2. B
- 3. D
- 4. C
- 5. C

# B. What's New?

- 1. ANEMOMETER
- 2. WIND VANE
- 3. THERMOMETER
- 4. WIND SOCK
- 5. HYGROMETER

# C. Let's try!

# Activity 1

Answer may vary

# E. Let's Evaluate

1. B	6. D
2. B	7. C
3. B	8. C
4. C	9. C
5. D	10. B

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