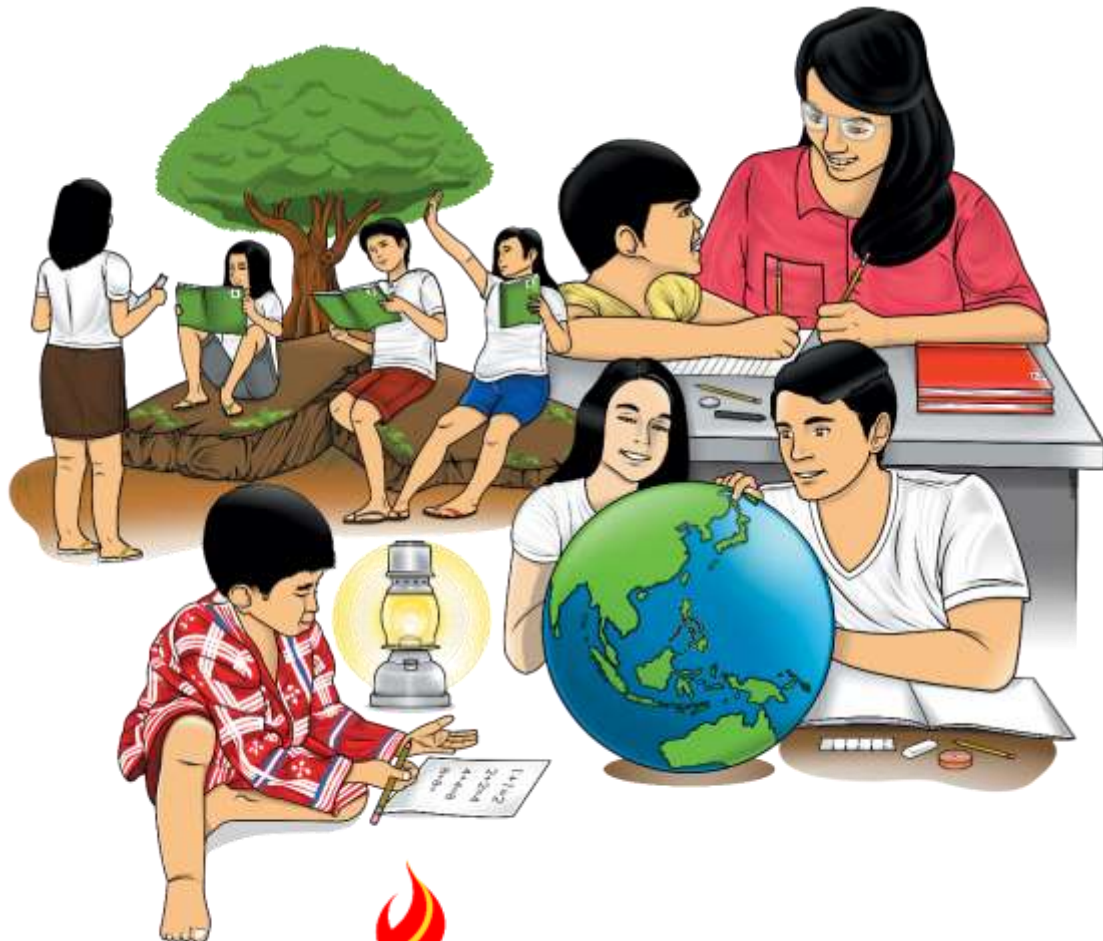


# Science

## Quarter 4 - Module 1: Locating Places of the Earth



**Science - Grade 7**  
**Alternative Delivery Mode (ADM)**  
**Quarter 4– Module 1: Title: Locating Places of the Earth**  
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# Science

## Quarter 4 – Module 1: Locating Places of the Earth

## **Introductory Message**

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.



## ***What I Need to Know***

Everything that we see around us makes up our environment. The landforms and bodies of water that make up the landscape, the mountains and valleys, rivers and seas; the climate, the rains brought by the monsoons, the warm, humid weather that we frequently experience; the natural resources that we make use of; every plant and animal that live around us. Truly, the environment is made up of a lot of things.

All these things that we find in our surroundings and all the natural phenomena that we observe are not due to some random luck or accident. What makes up our environment is very much related to where our country is located on the globe. Or, to say it in a different way, the characteristics of our environment are determined by the location of the Philippines on the planet.

### **Most Essential Learning Competency:**

- Demonstrate how places on earth may be located using a coordinate system **(S7ES-IVa-1)**.

This module is divided into two lessons:

- Lesson 1: Latitude
- Lesson 2: Longitude

After going through this module, you are expected to:

1. discuss the different reference lines used to locate places on Earth
2. locate a specific place using the coordinate system; and
3. recognize the relationship between latitude and the climate of a certain place.



## ***What I Know***

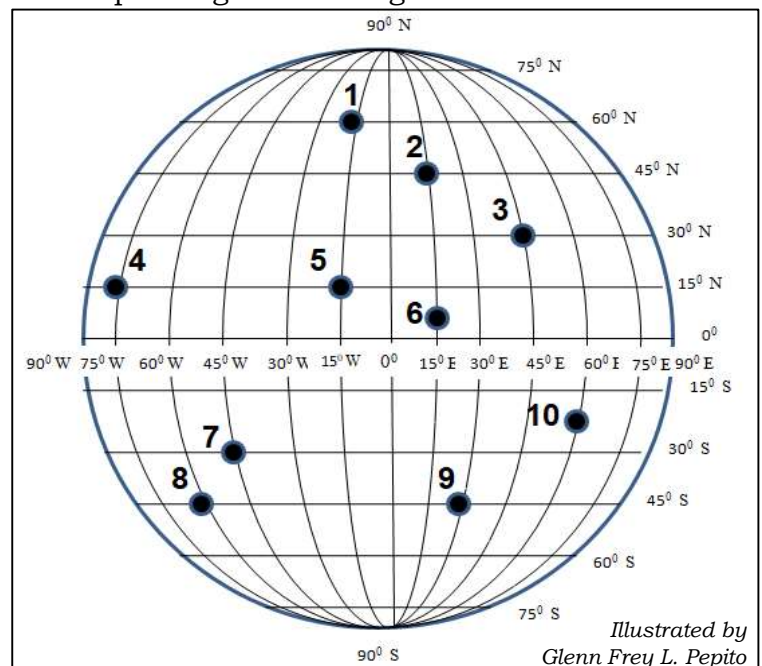
**Directions:** Read the following questions carefully. Choose and write the correct answer on a separate sheet of paper.

1. What do you call the horizontal lines found in the globe?
  - A. Equator
  - B. Latitude
  - C. Longitude
  - D. Prime Meridian

2. What do you call to the great circle that is halfway between the Northern and Southern Hemisphere?
  - A. Equator
  - B. Latitude
  - C. Longitude
  - D. Prime Meridian
  
3. Which of the following is the latitude of the equator?
  - A.  $0^{\circ}$
  - B.  $90^{\circ}$  N
  - C.  $90^{\circ}$  S
  - D.  $90^{\circ}$  E
  
4. Which of the following is considered as the greatest possible latitude found in the globe?
  - A.  $90^{\circ}$  N and  $90^{\circ}$  S
  - B.  $90^{\circ}$  E and  $90^{\circ}$  W
  - C.  $180^{\circ}$  N and  $180^{\circ}$  S
  - D.  $180^{\circ}$  E and  $180^{\circ}$  W
  
5. What is the climate experienced by countries that are located within or near the Tropic of Cancer and Capricorn?
  - A. Desert
  - B. Polar
  - C. Temperate
  - D. Tropical
  
6. What do you call the latitude between Tropic of Cancer and Arctic Circle?
  - A. Eastern temperate zone
  - B. Western temperate zone
  - C. Northern temperate zone
  - D. Southern temperate zone

For numbers 7-9, locate the latitude of the points given in the globe below.

7. What is the latitude of point 2?
  - A.  $0^{\circ}$
  - B.  $15^{\circ}$  N
  - C.  $45^{\circ}$  N
  - D.  $45^{\circ}$  S
  
8. What is the latitude of point 5?
  - A.  $15^{\circ}$  N
  - B.  $15^{\circ}$  S
  - C.  $15^{\circ}$  E
  - D.  $15^{\circ}$  W
  
9. What is the latitude of point 9?
  - A.  $30^{\circ}$  N
  - B.  $30^{\circ}$  S
  - C.  $45^{\circ}$  N
  - D.  $45^{\circ}$  S



10. Which of the following describes latitude?

- I. Lines do not meet or intersect.
- II. Lines are parallel to each other.
- III. Lines that run horizontally from east to west.
- IV. Lines that run vertically from north to south.

- A. I only
- B. IV only
- C. II and IV only
- D. I, II and III only

11. Which of the following best describes the polar region or frigid zones?

- I. These areas within the Arctic Circle and Antarctic Circle.
- II. Countries in these zones go through four seasons – winter, spring, summer, and autumn.
- III. It is cold all year round and even during the summer months, it does not feel like summer at all.
- IV. People who choose to live in these areas have to deal with temperatures that never go above 10°C.

- A. I, II, III and IV
- B. I, II and III only
- C. I, III and IV only
- D. II, III and IV only

12. The latitude of an area greatly affects its climate. Which of the following describes the relationship between latitude and climate?

- I. The closer the latitude to the poles, the hotter the climate.
- II. The closer the latitude to the poles, the colder the climate.
- III. The closer the latitude to the equator, the colder the climate.
- IV. The closer the latitude to the equator, the warmer the climate.

- A. I and III only
- B. I and IV only
- C. II and III only
- D. II and IV only

13. Which of the following does **NOT** describe the lines of latitude?

- I. It does not meet at the poles
- II. Lines are not parallel to each other.
- III. Parallel to the equator and to each other.
- IV. Form circles that are smaller at the poles.
- V. It does not form circles and it meet at the poles.

- A. I andII only
- B. II and V only
- C. IIIand IV only
- D. I, III andIV only

14. Ruby Jean was asked by her science teacher on how to measure the lines of latitude. She answered to always begin with the equator. Is her answer correct?

- A. Yes, because it represents 0 degrees.
- B. Yes, because it represents 90 degrees.
- C. No, because it must begin in the tropic of cancer.
- D. No, because it must begin in the prime meridian.

15. In a report presented by Ethan, he explained that the Philippines experiences a colder climate for it is just nearly above the equator. Do you think Ethan is correct about his explanation?

- A. Yes, because the closer the area to the equator, the colder the climate.
- B. Yes, because the farther the area from the equator, the warmer the climate.
- C. No, because areas that are closer to the equator will experience colder climate.
- D. No, because areas that are nearly above the equator will experience the tropical climate.



## Lesson

# 1

# Latitude



## What's In

The Earth has many interesting and wonderful places that you can visit. From the deep blue sprawling oceans to the vast and green fields and lush forests, you can actually get lost while wandering this amazing place. What would you do if you get lost?

Will you ask directions? That can be done indeed! However, if there comes a time that you have no one to ask, what will you rely on? A map would be a must-have. It is a handy tool to aid you in going to different places you haven't been to. Now the question is: "How do you locate places on a map?"

**Directions:** Fill the given boxes with letters to form a word that is being described by each statement below. Write your answers on a separate sheet of paper.

1. The horizontal line that divides the earth into northern and southern part.

2. It is called as the great circle on the globe.

3. It is the unit used in measuring the latitude of the globe.

4. It is a three-dimensional representation of the Earth.



## What's New

Study the images on the right that describes the latitude lines in the globe to answer the questions below. Write your answers on a separate sheet of paper.

### Questions to Ponder:

1. How will you define equator in your own words?
2. What are the two poles of the globe?
3. Differentiate Northern and Southern hemisphere in your own words.
4. Are these lines of latitude imaginary or not?
5. Are the lines of latitude parallel to the equator and to each other or not?

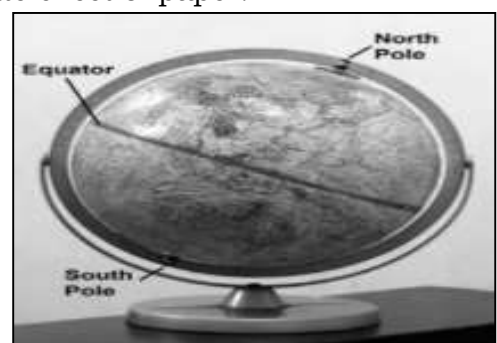


Figure 1. The Globe

Source: DepEd Grade 7 LM

CO\_Q4\_Science 7\_ Module 1

6. Does it form circles at the poles?
7. Do the lines of latitude meet or not?
8. In general, describe the lines of latitude.

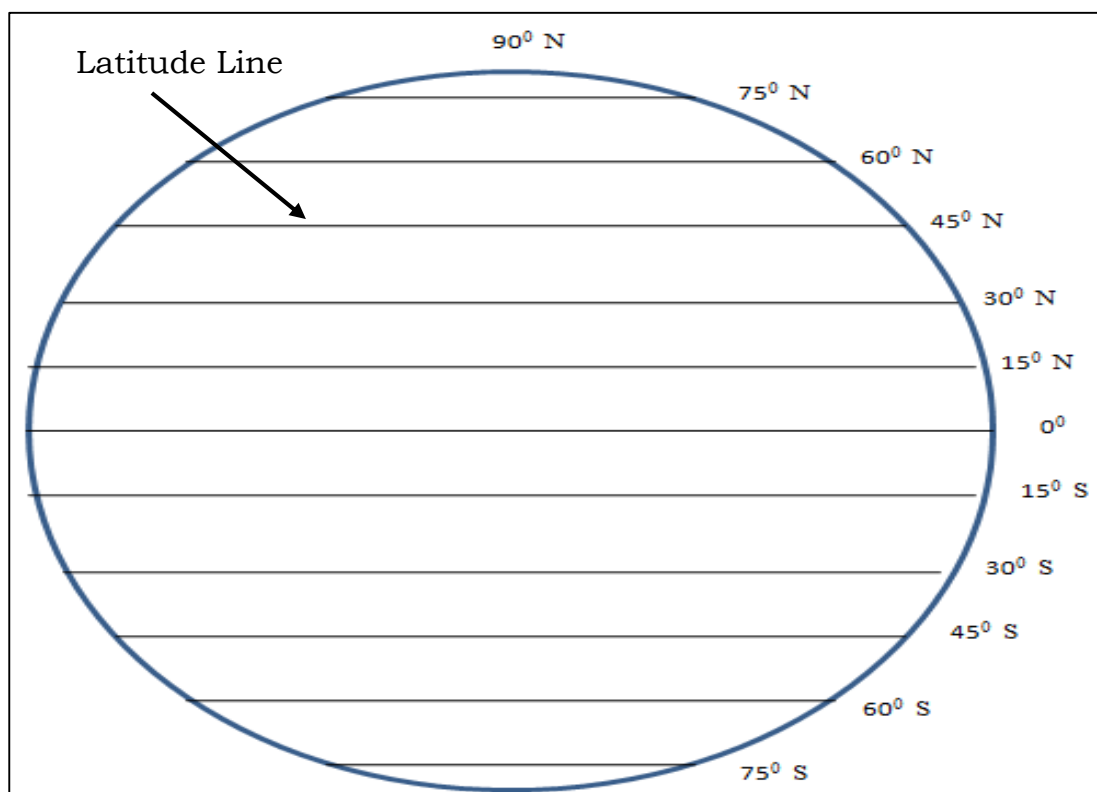


Figure 2. Lines of Latitude  
*Illustrated by Glenn Frey L. Pepito*

**Rubrics**

	Excellent (5 points)	Strong (4 points)	Fair (3 points)	Needs Improvement (2 points)
Content	Main ideas are clear and well-supported by detailed and accurate information.	Main ideas are clear but are not well-supported by detailed information.	Main ideas are somewhat clear.	Main ideas are not clear.
Organization	Information is relevant and presented in a logical order.	Information is relevant but not presented in a logical order.	Information is somewhat relevant.	Information is not relevant.



## What is It

### The Earth's Grid System

**Earth's grid** or **coordinate system** can be described and determined by means of the position or location of any place on the Earth's surface.

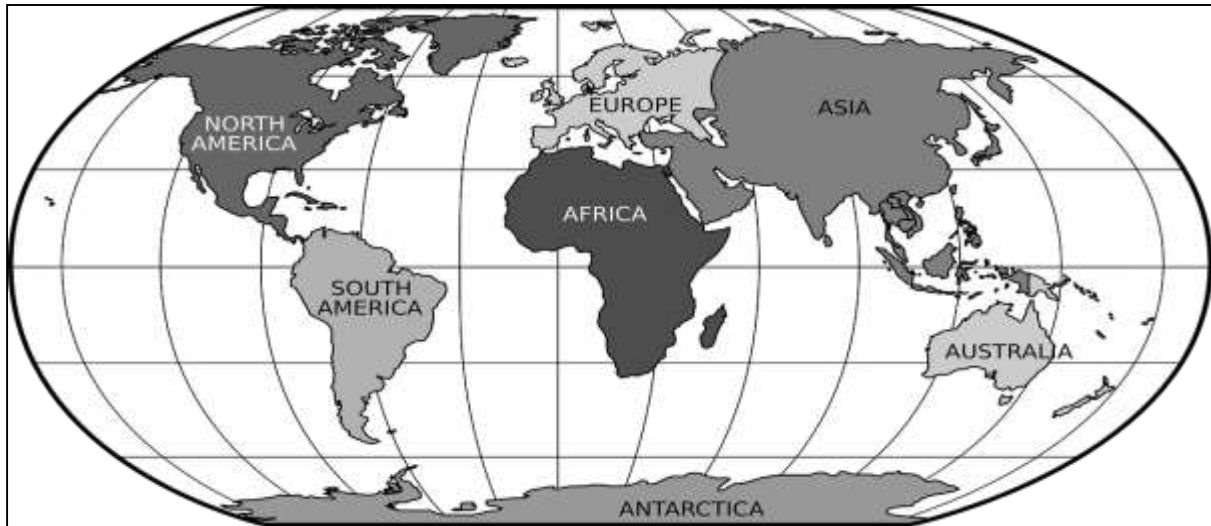


Figure 3. World map with grid lines

Source: pixabay.com

**Latitude** is the measurement on a globe or map of a place north or south of the equator. It is measured in degrees, minutes, and seconds. The greatest possible latitudes are  $90^\circ$  N and  $90^\circ$  S. To identify different latitudinal positions on maps or globes, equidistant circles are plotted and drawn parallel to the equator and each other. These are known as the parallels, or parallels of latitude.

The **equator** is also called the great circle around the Earth that is equidistant from the geographic poles and lies in a plane perpendicular to the Earth's axis. It divides the Earth halfway into the Northern and Southern hemispheres at 0 degrees latitude and forms the imaginary reference line.

The starting point for latitude is the equator at latitude  $0^\circ$  (0 degree). At the North Pole, the latitude is  $90^\circ$ N (90 degrees north) and at the South Pole, the latitude is  $90^\circ$ S (90 degrees south).

The **lines of latitude** are also known as parallels of latitude. That is because the lines of latitude are parallel to the equator and to each other. Five lines of latitude have special names. They are listed in the table below. The latitude values have been rounded off to the nearest half-degree.

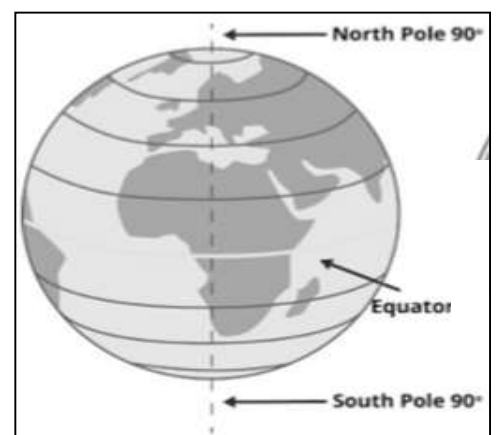


Figure 4. Lines of Latitude

Source: Mapa, Amelia et al. (2001)

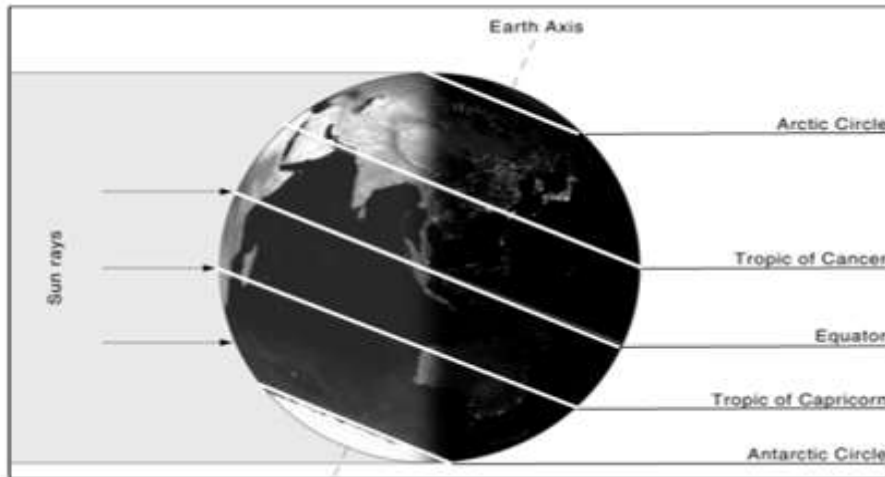


Figure 5. Different lines of Latitude  
 Source: DepEd Grade 7 LM

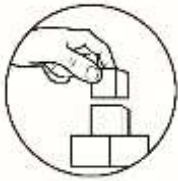
Look at Figure 5 and find the Tropic of Cancer and the Tropic of Capricorn. The part of the world between these two parallel lines is called the tropics. Countries that are located in this zone experience a tropical climate where the annual average temperature is above 18°C.

Now, find the Arctic Circle and the Antarctic Circle on the globe. Between the Tropic of Cancer and the Arctic Circle is the northern temperate zone; between the Tropic of Capricorn and the Antarctic Circle is the southern temperate zone. Countries in these zones go through four seasons – winter, spring, summer, and autumn.

Finally, the areas within the Arctic Circle and Antarctic Circle are called the polar regions or frigid zones. People who choose to live in these areas have to deal with temperatures that never go above 10°C. It is cold all year round and even during the summer months, it does not feel like summer at all.

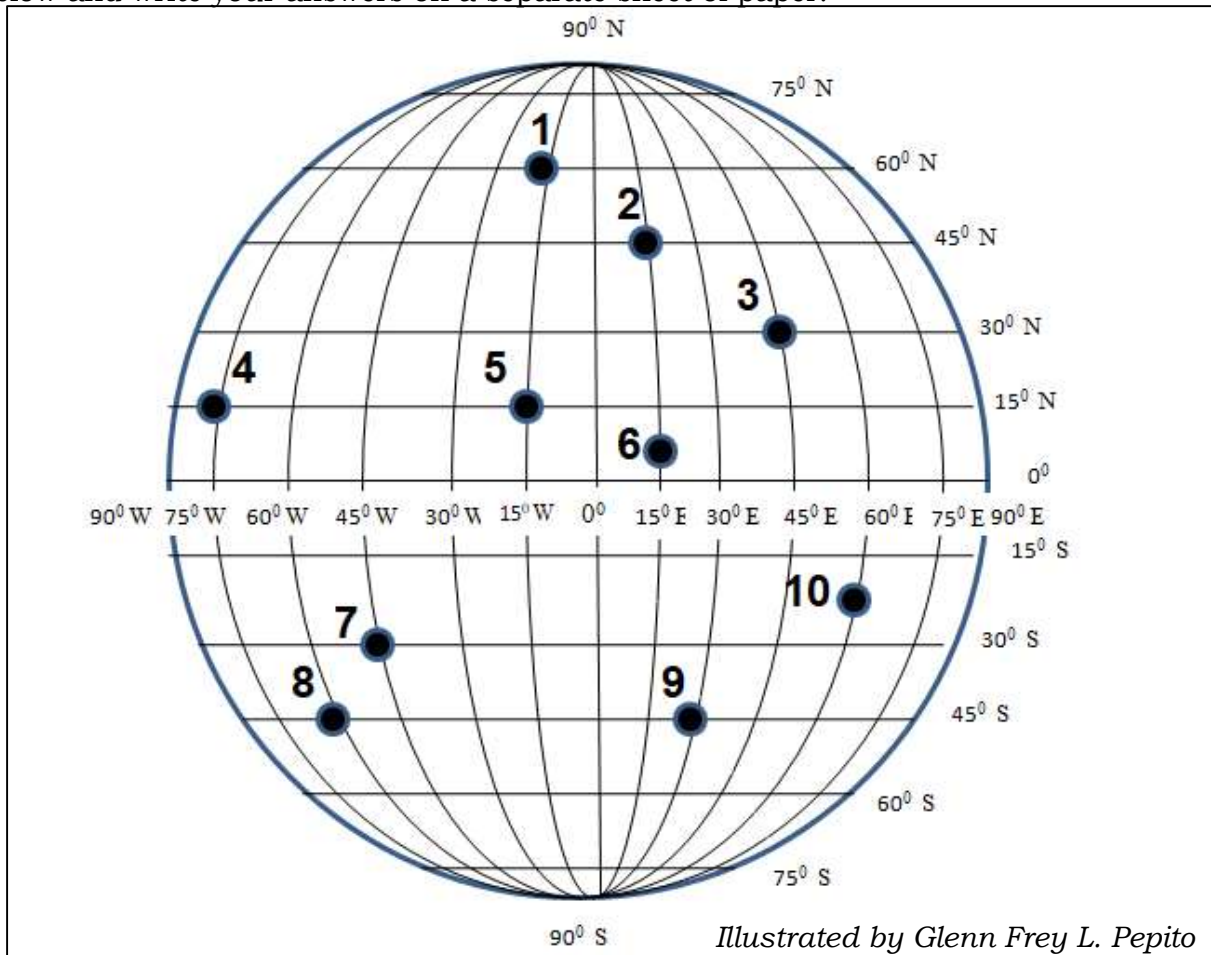
Latitude	Name
0°	Equator
23.5°N	Tropic of Cancer
23.5°S	Tropic of Capricorn
66.5°N	Arctic Circle
66.5°S	Antarctic Circle

To sum up, the closer the latitude is to the equator, the warmer the climate. The closer it is to the poles, the colder. Thus, it is clear that there is a relationship between the latitude of a place and the climate it experiences,



## What's More

**Directions:** Study the diagram below. Identify the latitude (in degrees) and indicate the position (N-North and S-South) of the numbered points on the globe. Complete the table below and write your answers on a separate sheet of paper.



Point on the Globe	Parallel Latitudes
1	60° N
2	_____
3	_____
4	_____
5	_____
6	_____
7	_____
8	_____
9	45°S
10	_____

**Question to Ponder:**

The globe does not show all lines of latitude. If you wish to find 50°N, where should you look?



## ***What I Have Learned***

**Directions:** Read the paragraph carefully and identify the correct word that fit in each sentence in the box below. Write your answers on a separate sheet of paper.

northern	latitude	intersecting	parallel
degrees	colder	equator	southern
map	globe	increases	warmer
decreases			

Currently, Earth is composed of seven continents surrounded by different bodies of water. Locating a specific place would not be possible if not for Earth's models such as maps and globes. A \_\_\_\_\_ is a two-dimensional drawing which can be used on flat surfaces and is easily carried. On the other hand, a \_\_\_\_\_ is a three-dimensional representation of the spherical shape of Earth. A unique feature of a globe is Earth's tilt with respect to its North and South Poles. It also represents Earth's position relative to Sun. Through time, both models have undergone modifications to represent Earth better.

A common feature of maps and globes is the presence of \_\_\_\_\_ horizontal and vertical lines to form a Cartesian plane. These imaginary lines form a grid collectively known as the geographic coordinate system. The geographic coordinate system does not exist but it was drawn as a numerical reference which determines the locations of different places on Earth. Locating places on a map or globe uses these lines which are represented as \_\_\_\_\_ ( $^{\circ}$ ) since it is assumed that the world is spherical. Most maps usually draw these lines apart at a  $15^{\circ}$  interval.

Lines which run horizontally from east to west are called \_\_\_\_\_. These lines are \_\_\_\_\_ to each other. Hence, latitudes do not meet or intersect. The latitude which cuts the Earth in half is called the \_\_\_\_\_. This line divides Earth into \_\_\_\_\_ and \_\_\_\_\_ hemispheres. As a reference point, the equator is read as  $0^{\circ}$  latitude. The degree \_\_\_\_\_ as it approaches the two poles which are read as  $90^{\circ}$  north latitude ( $90^{\circ}$ N) or  $90^{\circ}$  south latitude ( $90^{\circ}$ S).

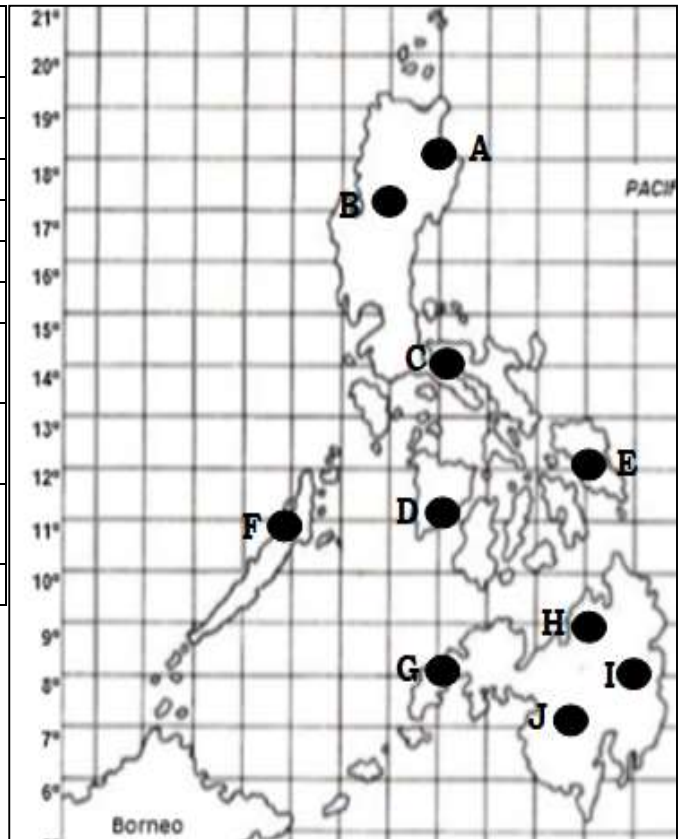
The closer the latitude is to the equator, the \_\_\_\_\_ the climate. The closer it is to the poles, the \_\_\_\_\_. Thus, it is clear that there is a relationship between the latitude of a place and the climate it experiences.



## What I Can Do

**Directions:** Locate the latitude of some areas here in the Philippines using the points given below on the Philippine Map. Write your answers on a separate sheet of paper.

Point	Province	Parallel Latitudes
<b>A</b>	Isabela	1. _____
<b>B</b>	Nueva Viscaya	2. _____
<b>C</b>	Quezon	3. _____
<b>D</b>	Iloilo	4. _____
<b>E</b>	Samar	5. _____
<b>F</b>	Palawan	6. _____
<b>G</b>	Zamboanga Zibugay	7. _____
<b>H</b>	Misamis Oriental	8. _____
<b>I</b>	Compostela Valley	9. _____
<b>J</b>	North Cotabato	10. _____



### Question to Ponder:

What do you think are the reasons why the Philippines is considered as a tropical country? Does the latitude affect our climate? Explain your answer.

Source: DepEd Grade 7 LM





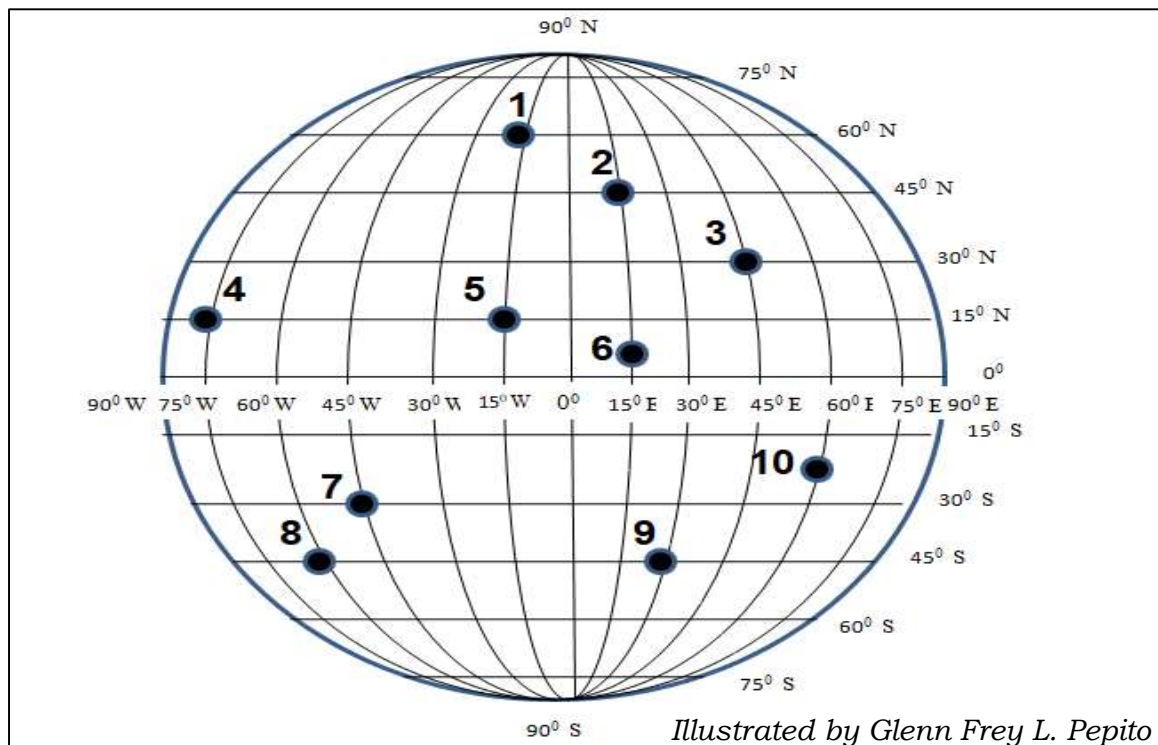
## Assessment

**Directions:** Read the following questions carefully. Choose and write the letter of the correct answer on a separate sheet of paper.

1. What do you call the latitude between Tropic of Capricorn and Antarctic circle?
  - A. Eastern temperate zone
  - B. Western temperate zone
  - C. Northern temperate zone
  - D. Southern temperate zone
2. What do you call the Great Circle of the globe?
  - A. Equator
  - B. Latitude
  - C. Longitude
  - D. Prime meridian
3. What is the latitude of Tropic of Capricorn?
  - A.  $0^{\circ}$
  - B.  $23.5^{\circ}$  N
  - C.  $23.5^{\circ}$  S
  - D.  $66.5^{\circ}$  S
4. What do you call the imaginary line that divides the places on the earth in a north-south direction?
  - A. Equator
  - B. Latitude
  - C. Longitude
  - D. Prime meridian
5. Which of the following is the latitude of arctic circle?
  - A.  $23.5^{\circ}$  N
  - B.  $23.5^{\circ}$  S
  - C.  $66.5^{\circ}$  N
  - D.  $66.5^{\circ}$  S
6. What is the annual average temperature of tropical countries like the Philippines?
  - A.  $0^{\circ}$  C
  - B.  $10^{\circ}$  C
  - C. above  $18^{\circ}$  C
  - D. above  $37^{\circ}$  C



For numbers 7-9, locate the latitude of the numbered points given in the globe below.



7. What is the latitude of point 1?

- A.  $0^{\circ}$
- B.  $60^{\circ}$  N
- C.  $60^{\circ}$  S
- D.  $90^{\circ}$  N

8. What is the latitude of point 3?

- A.  $30^{\circ}$  N
- B.  $30^{\circ}$  S
- C.  $45^{\circ}$  N
- D.  $45^{\circ}$  S

9. What is the latitude of point 4?

- A.  $15^{\circ}$  N
- B.  $15^{\circ}$  S
- C.  $75^{\circ}$  N
- D.  $75^{\circ}$  S

10. All of the following describe latitude, **EXCEPT**

- I. Lines do not meet or intersect.
- II. Lines are parallel to each other.
- III. Lines that run horizontally from east to west.
- IV. Lines that run vertically from north to south.

- A. I only
- B. IV only
- C. I and III only
- D. II and IV only

11. Which of the following best describes the areas that belong to the tropics?

- I. Areas in this zone experience a tropical climate
- II. Areas within the tropics experiences the four seasons- winter, spring summer, and autumn.
- III. It is cold all year round and even during the summer months, it does not feel like summer at all.
- IV. People who choose to live in these areas experiences an annual average temperature of above 18°C.

- A. I and IV only
- B. II and III only
- C. I,II and III only
- D. II, III and IV only

12. Which of the following best describe the features of latitude?

- I. The equator is at latitude 0°
- II. The starting point for latitude is the equator.
- III. At the North Pole, the latitude is 90°N (90 degrees north)
- IV. At the South Pole, the latitude is 90°S (90 degrees south).

- A. I, II, III, IV
- B. I, II and III only
- C. I, III and IV only
- D. II, III and IV only

13. The latitude of an area greatly affects its climate. Which of the following does **NOT** describe the relationship between latitude and the climate of an area?

- I. The closer the latitude to the poles, the hotter the climate.
- II. The closer the latitude to the poles, the colder the climate.
- III. The closer the latitude to the equator, the colder the climate.
- IV. The closer the latitude to the equator, the warmer the climate.

- A. I and III only
- B. I and IV only
- C. II and III only
- D. II and IV only

14. Mattheus was asked by his science teacher on how to measure the lines of latitude. He answered to always begin at the poles. Is he correct about his answer?

- A. Yes, because it represents 0 degrees.
- B. Yes, because it represents 90 degrees.
- C. No, because it must begin at the equator.
- D. No, because it must begin in the tropic of cancer.

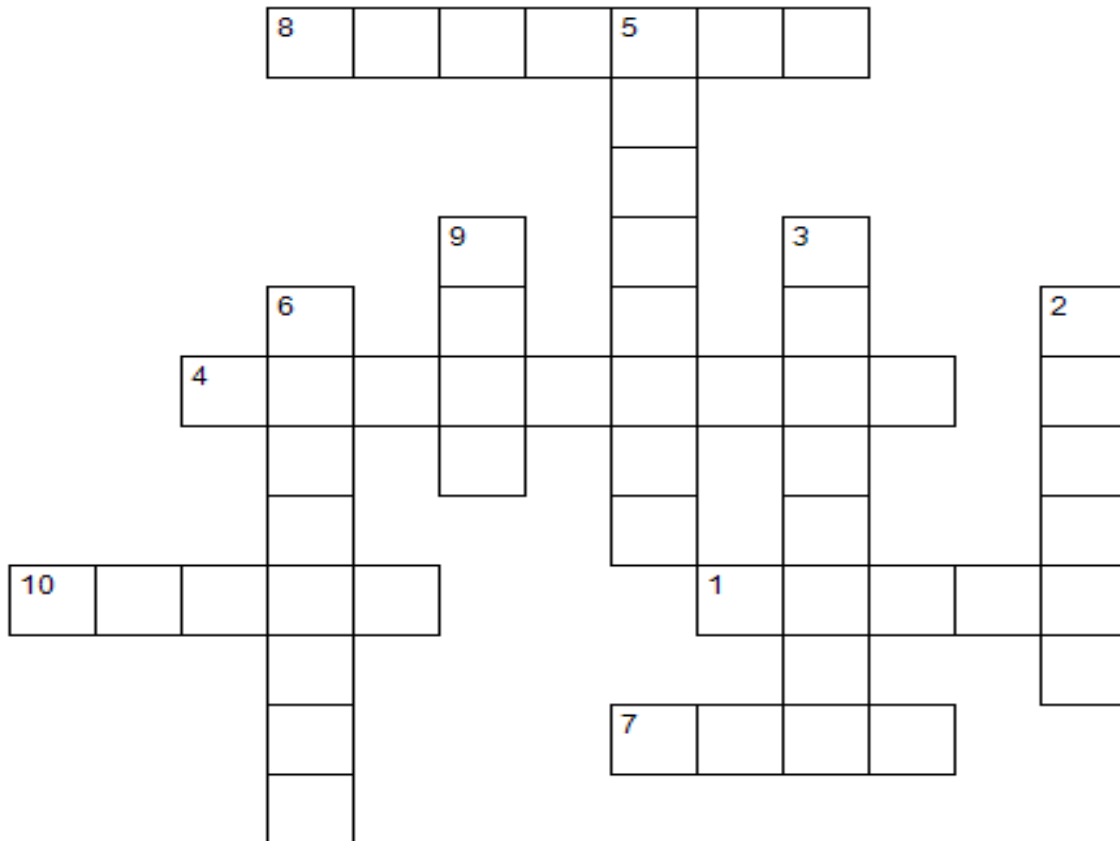
15. In a report presented by Ethan, he explained that the Philippines experiences a tropical climate for it is just nearly above the equator. Do you think Ethan is correct about his explanation?

- A. Yes, because the closer the area to the equator, the warmer the climate.
- B. Yes, because the farther the area from the equator, the warmer the climate.
- C. No, because areas that are closer to the equator will experience colder climate.
- D. No, because areas that are nearly above the equator will experience the four seasons.



## Additional Activities

**Directions:** Complete the crossword by identifying the words being described in each item below. Write your answers on a separate sheet of paper.

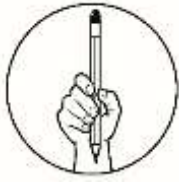


Across:

1. It is a three-dimensional representation of the spherical shape of Earth.
4. It is tropical line with latitude of  $23.5^{\circ}\text{S}$ .
7. Places that are far from the equator will experience a climate with this temperature.
8. It is called the great circle around the Earth that is equidistant from the geographic poles and lies in a plane perpendicular to the Earth's axis.
10. It is the pole of the Earth where the arctic circle is found.

Down:

2. It is tropical line with latitude of  $23.5^{\circ}\text{N}$ .
3. These are lines that do not meet or intersect with each other.
5. Areas that belong to or nearer the equator will experience this kind of climate.
6. It is the measurement on a globe or map of distance to north or south of the equator.
9. Places that are near or at the equator experience this temperature.



## ***What I Know***

**Directions:** Read the following questions carefully. Choose and write the letter of the correct answer on a separate sheet of paper.

1. What do you call the line of the globe that runs from north to south?
  - A. Equator
  - B. Latitude
  - C. Longitude
  - D. Prime meridian
2. What do you call the starting point of longitude measured in 0 degree?
  - A. Starter
  - B. Equator
  - C. Antemeridian
  - D. Prime meridian
3. Which of the following describes the right side of the prime meridian?
  - A. Eastern Hemisphere
  - B. Western Hemisphere
  - C. Northern Hemisphere
  - D. Southern Hemisphere
4. What imaginary line of the globe is read as 0° longitude?
  - A. Equator
  - B. Meridian
  - C. Antemeridian
  - D. Prime meridian
5. Which of the following describes the left side of the prime meridian?
  - A. Western Hemisphere
  - B. Eastern Hemisphere
  - C. Northern Hemisphere
  - D. Southern Hemisphere
6. What imaginary line of the globe is read as 180° longitude?
  - A. Meridian
  - B. Antemeridian
  - C. Prime median
  - D. Tropic of Cancer

For numbers 7-9, refer to the illustration on the right.

7. What is the longitude of point 4?

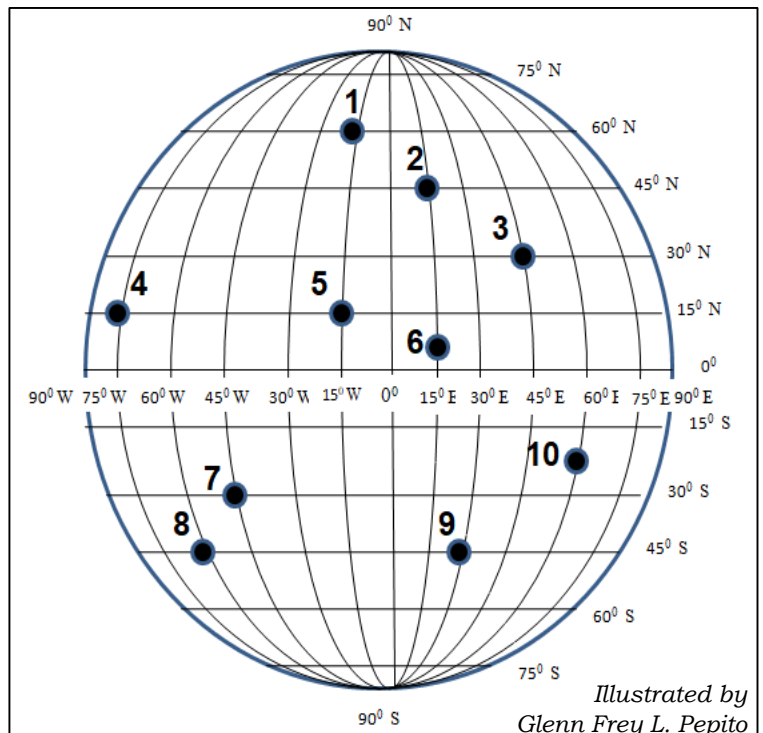
- A.  $15^{\circ}$  E
- B.  $15^{\circ}$  W
- C.  $75^{\circ}$  E
- D.  $75^{\circ}$  W

8. What is the longitude of point 7?

- A.  $30^{\circ}$  E
- B.  $30^{\circ}$  W
- C.  $45^{\circ}$  E
- D.  $45^{\circ}$  W

9. What is the latitude and longitude of point 3?

- A.  $30^{\circ}$  N,  $45^{\circ}$  E
- B.  $30^{\circ}$  N,  $45^{\circ}$  W
- C.  $45^{\circ}$  N,  $30^{\circ}$  E
- D.  $45^{\circ}$  N,  $30^{\circ}$  W



10. Which of the following best describe the lines of longitude?

- I. It does not meet at the poles
- II. Lines are not parallel to each other.
- III. Lines are parallel to the equator and to each other.
- IV. Lines form circles that are smaller at the poles.
- V. It does not form circles and it meet at the poles.

- A. II and V only
- B. II and IV only
- C. I, III and IV only
- D. I, II, III, IV and V

11. How can you locate the exact places on the earth?

- I. Use the lines of latitude only.
- II. Use the lines of longitude only.
- III. Use the parallel lines to describe the location.
- IV. Use the intersecting lines of latitude and longitude.

- A. III only
- B. IV only
- C. I and III only
- D. II and III only

12. Which of the following BEST differentiates latitude from longitude?

- I. Lines of latitude do not form circles while longitude lines do.
- II. Lines of latitude do not meet while longitude lines meet at the poles.
- III. Lines of latitude are parallel to the equator and to each other while longitude lines are not parallel to each other.
- IV. Lines of latitude runs vertically from north to south while lines of longitude runs horizontally from east to west.

- A. I and II only
- B. I and III only
- C. II and III only
- D. III and IV only

13. Which of the following statements BEST describes prime meridian and antemeridian?

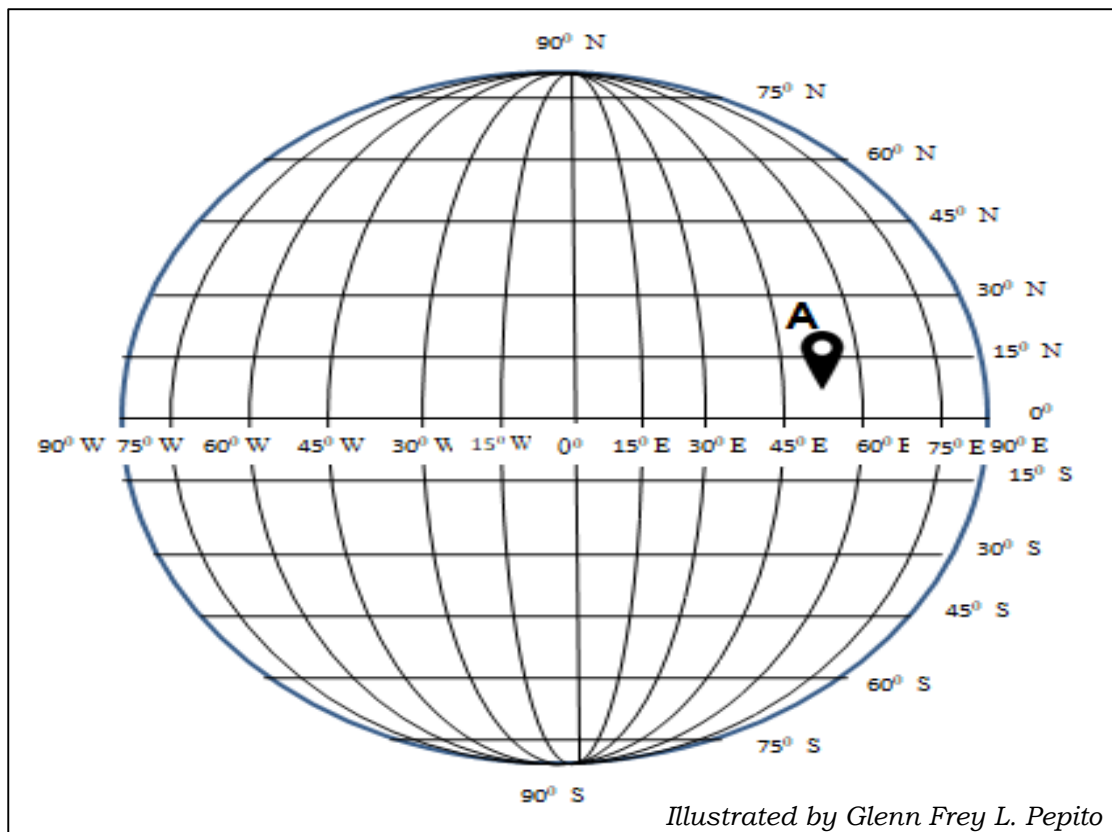
- I. Longitude  $180^\circ$  represents the antemeridian.
- II. The Prime Meridian and longitude  $180^\circ$  are on the same sides of the world.
- III. Like the Prime Meridian, longitude  $180^\circ$  represents the boundary of the eastern hemisphere and western hemisphere.
- IV. Starting at the Prime Meridian, moving 180 degrees to the east or to the west brings you to longitude  $180^\circ$

- A. II only
- B. II and III only
- C. III and IV only
- D. I, III and IV only

14. EJ discussed with his classmates that to locate the exact places on the earth, one must look at the neighboring area to describe the location. Is he correct about his explanation?

- A. Yes, because the neighboring area will give the exact location of the area.
- B. No, because one must look at the intersecting lines of latitude and longitude.
- C. Yes, because the neighboring area will give the intersecting lines of latitude and longitude.
- D. No, because one must look at the non-intersecting lines of latitude and longitude.

15. Looking at the illustration given below, which of the following does **NOT** describe location A with respect to its latitude and longitude?



- I. It is located in the eastern hemisphere.
- II. It is located in the western hemisphere.
- III. It is located in the northern hemisphere.
- IV. It is located in the southern hemisphere.

- A. I and IV only
- B. I and III only
- C. II and III only
- D. II and IV only

**Lesson****2****Longitude****What's In**

**Directions:** Complete the table below by indicating the names of the given latitudes. Write your answers on a separate sheet of paper.

Latitude	Name
0°	1. _____
23.5°N	2. _____
23.5°S	3. _____
66.5°N	4. _____
66.5°S	5. _____

This time, you will be learning about another component of the coordinate system – longitude. It is the imaginary line in the globe that runs vertically from north to south. To discover more about longitude, read and analyze the activities given below.

**What's New**

Study the images on the right that describes the longitude lines in the globe to answer the questions below. Write your answers on a separate sheet of paper.

**Questions to Ponder:**

1. Are the lines of longitude parallel from each other?
2. Does it form circles at the poles?
3. Do the lines of longitude meet or not?
4. In general, describe the lines of longitude?

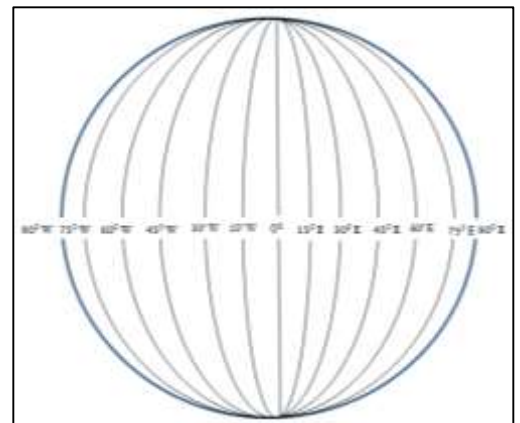


Figure 1. Longitude lines  
Illustrated by Glenn Frey L. Pepito





## What is It

Lines which run from north to south are called **longitudes**. The longitude which passes through Greenwich, England is called the **prime meridian**.

As a reference point, the prime meridian is read as  $0^\circ$  longitude. The degree increases as it moves westward or eastward until it reaches the longitude opposite to the prime meridian, the **antemeridian** (read as  $180^\circ$  longitudes). The prime meridian and antemeridian divide the globe into its eastern and western hemispheres. The right side of the prime meridian is the eastern hemisphere while the left side is the western hemisphere.

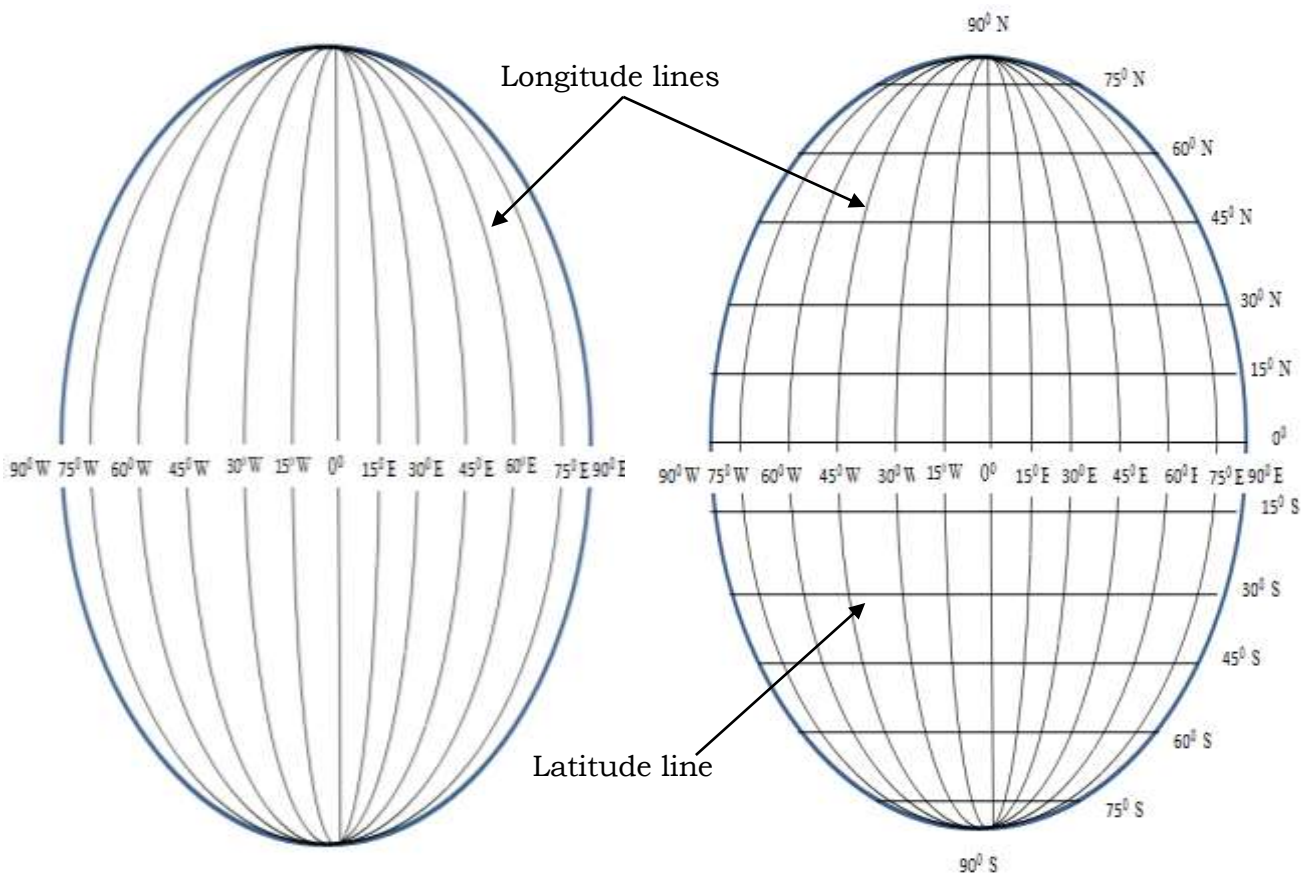
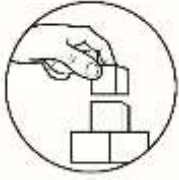


Figure 2. Lines of Longitude  
*Illustrated by Glenn Frey L. Pepito*

Figure 3. Latitude and Longitude lines  
*Illustrated by Glenn Frey L. Pepito*

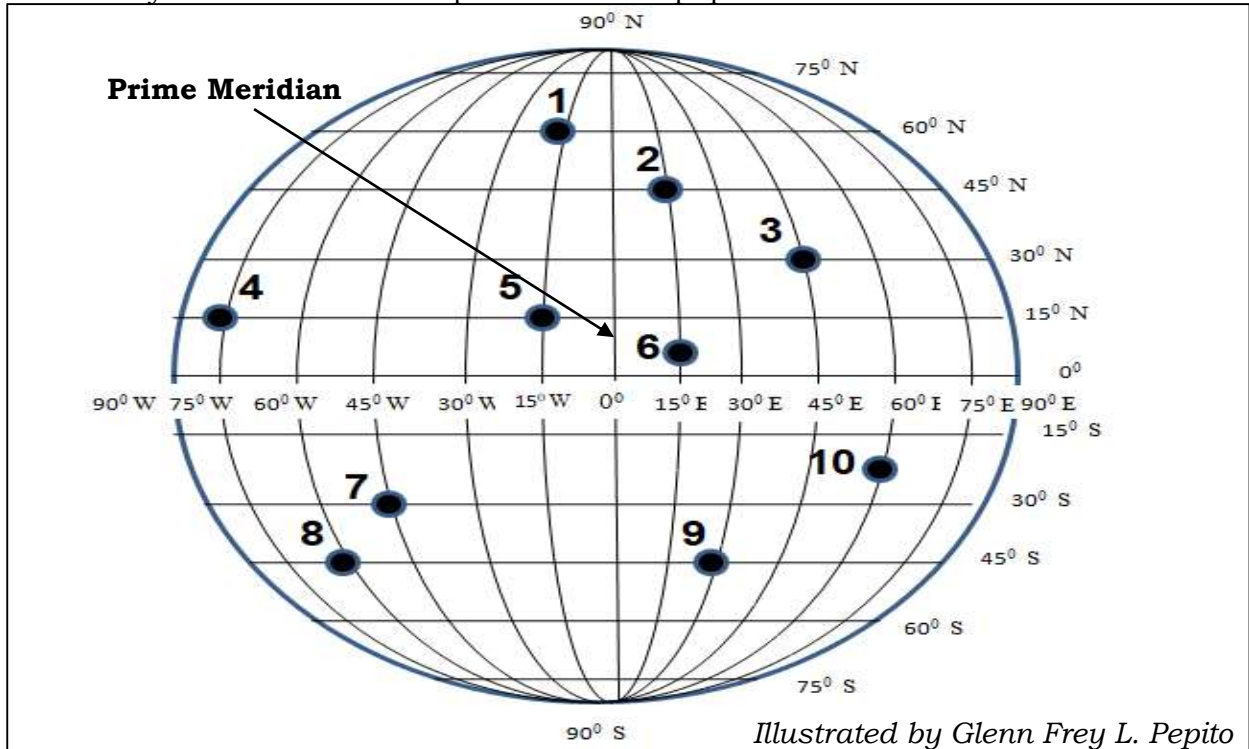
Starting at the Prime Meridian, moving 180 degrees to the east or to the west brings you to longitude  $180^\circ$  or also known as antemeridian. Like the Prime Meridian, longitude  $180^\circ$  represents the boundary of the eastern hemisphere and western hemisphere. The Prime Meridian and longitude  $180^\circ$  are on opposite sides of the world.



## What's More

### Activity 1: Finding the Longitude

**Directions:** Study the diagram below. Determine the longitude of the identified points on the globe by indicating the number of degrees the point is from the prime meridian and its direction E (east) or W (west) from the prime meridian. Complete the table below and write your answers on a separate sheet of paper.



Point on the Globe	Longitudes
1	15° W
2	_____
3	_____
4	_____
5	_____
6	_____
7	_____
8	_____
9	30°E
10	_____

#### Question to Ponder:

Not all lines of longitude are shown on a globe. If you want to find 20°W, where should you look?



## What I Have Learned

**Directions:** Complete the following statements below by writing what you have learned about longitude. Write your answers on a separate sheet of paper.

I know that I know about \_\_\_\_\_

First, I know that \_\_\_\_\_

Second, I know that \_\_\_\_\_

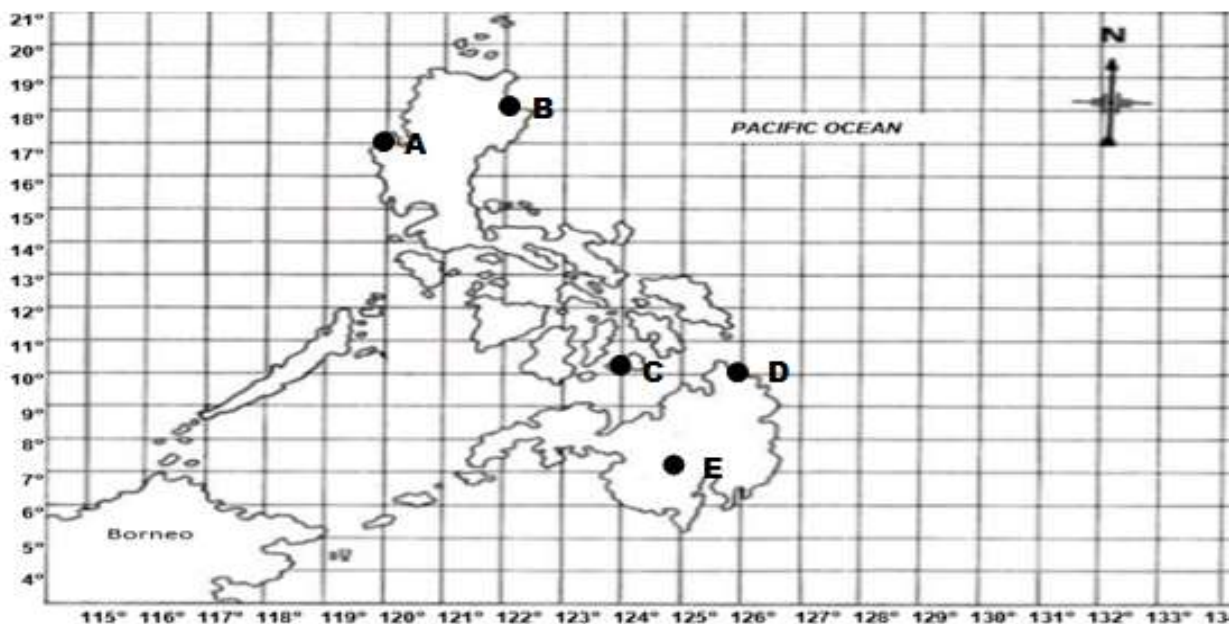
Finally, I know that \_\_\_\_\_

Now you know that I know something about \_\_\_\_\_



## What I Can Do

**Directions:** Locate the latitude and the longitude of some areas here in the Philippines using the points given below on the Philippine Map. Write your answers on a separate sheet of paper.



Source: DepEd Grade 7 LM

Point on the Map	Province	Latitude	Longitude
A	Pangasinan		
B	Isabela		
C	Bohol		
D	Surigao del Norte		
E	North Cotabato		



## Assessment

**Directions:** Read the following questions carefully. Choose and write the letter of the correct answer on a separate sheet of paper.

- Which of the following describes a longitude?
  - Its reference point starts at the equator.
  - It is an imaginary line that runs from east to west.
  - It is an imaginary line that runs from north to south.
  - It is horizontal line that divides the earth into north and south hemisphere.
- What do you call to the imaginary line that divides the places on the earth in an east-west direction?
  - Equator
  - Latitude
  - Longitude
  - Prime meridian
- Which of the following BEST describes the prime meridian?
  - 15 degree line
  - 180 degree line
  - Vertical, center line
  - Horizontal, center line
- What do you call the opposite longitude of prime meridian?
  - Equator
  - Latitude
  - Meridian
  - Antemeridian

For numbers 5-9, refer to the illustration on the right.

5. What is the longitude of point 1?

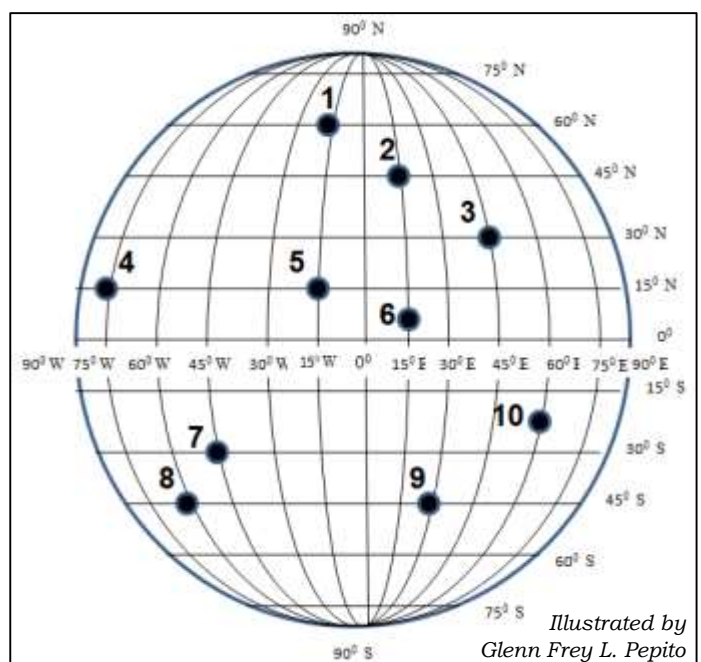
- $15^{\circ}$  E
- $15^{\circ}$  W
- $60^{\circ}$  N
- $60^{\circ}$  S

6. What is the longitude of point 9?

- $30^{\circ}$  E
- $30^{\circ}$  W
- $45^{\circ}$  N
- $45^{\circ}$  S

7. What is the latitude and longitude of point 2?

- $15^{\circ}$  N,  $45^{\circ}$  E
- $15^{\circ}$  N,  $45^{\circ}$  W
- $45^{\circ}$  N,  $15^{\circ}$  E
- $45^{\circ}$  N,  $15^{\circ}$  W



8. What is the latitude and longitude of point 7?

- A.  $30^{\circ}$  N,  $45^{\circ}$  E
- B.  $30^{\circ}$  S,  $45^{\circ}$  W
- C.  $45^{\circ}$  N,  $30^{\circ}$  E
- D.  $45^{\circ}$  S,  $30^{\circ}$  W

9. What point has the latitude and longitude of  $15^{\circ}$  N,  $75^{\circ}$  W respectively?

- A. Point 4
- B. Point 5
- C. Point 6
- D. Point 10

10. Which of the following does **NOT** describe the lines of longitude?

- I. It does not meet at the poles
- II. Lines are not parallel to each other.
- III. Parallel to the equator and to each other.
- IV. Form circles that are smaller at the poles.
- V. It does not form circles and it meet at the poles.

- A. II and V only
- B. II and IV only
- C. I, III and IV only
- D. I, II, III, IV and V

11. Which of the following does **NOT** differentiate latitude from longitude?

- I. Lines of latitude do not form circles while longitude lines do.
- II. Lines of latitude do not meet while longitude lines meet at the poles.
- III. Lines of latitude are parallel to the equator and to each other while longitude lines are not parallel to each other.
- IV. Lines of latitude runs vertically from north to south while lines of longitude runs horizontally from east to west.

- A. I and IV only
- B. I and III only
- C. II and III only
- D. III and IV only

12. Which of the following statements BEST describe the lines of longitude?

- I. Lines do not form circles
- II. Lines meet at the poles
- III. Lines have the same length
- IV. Lines are not parallel to each other.

- A. I, II, III, IV
- B. I, II, and III only
- C. I, II and IV only
- D. I, III and IV only

13. Which of the following statements does **NOT** describe prime meridian and antemeridian?

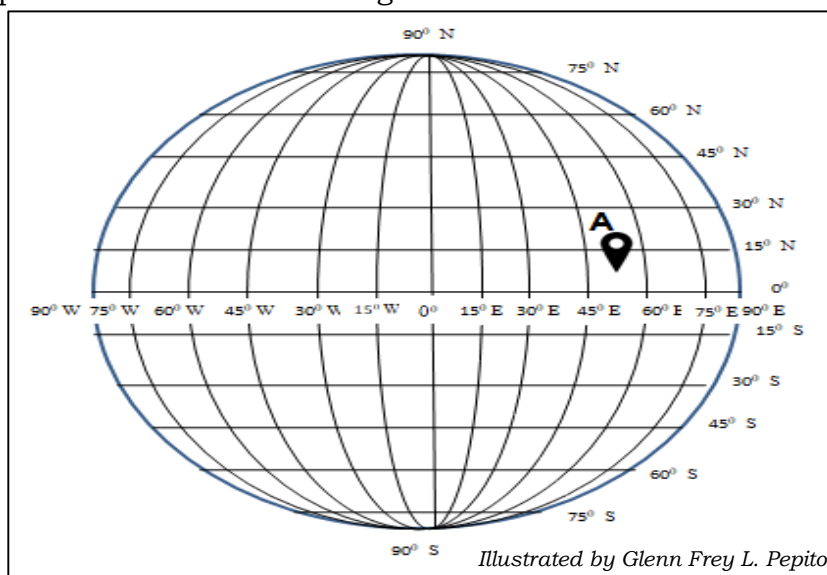
- I. Longitude  $180^\circ$  represents the antemeridian.
- II. The Prime Meridian and longitude  $180^\circ$  are on the same sides of the world.
- III. Like the Prime Meridian, longitude  $180^\circ$  represents the boundary of the eastern hemisphere and western hemisphere.
- IV. Starting at the Prime Meridian, moving 180 degrees to the east or to the west brings you to longitude  $180^\circ$

- A. II only
- B. II and III only
- C. III and IV only
- D. I, III and IV only

14. EJ discussed with his classmates that to locate the exact places on the earth, one must look only at the latitude lines. Is he correct about his explanation?

- A. Yes, because it gives us the north or south location of an area.
- B. Yes, because it helps us in determining the west and east location of an area.
- C. No, because one must look at the intersecting lines of latitude and longitude.
- D. No, because one must look at the non-intersecting lines of latitude and longitude.

15. Looking at the map given below, which of the following **BEST** describe the location A with respect to its latitude and longitude?



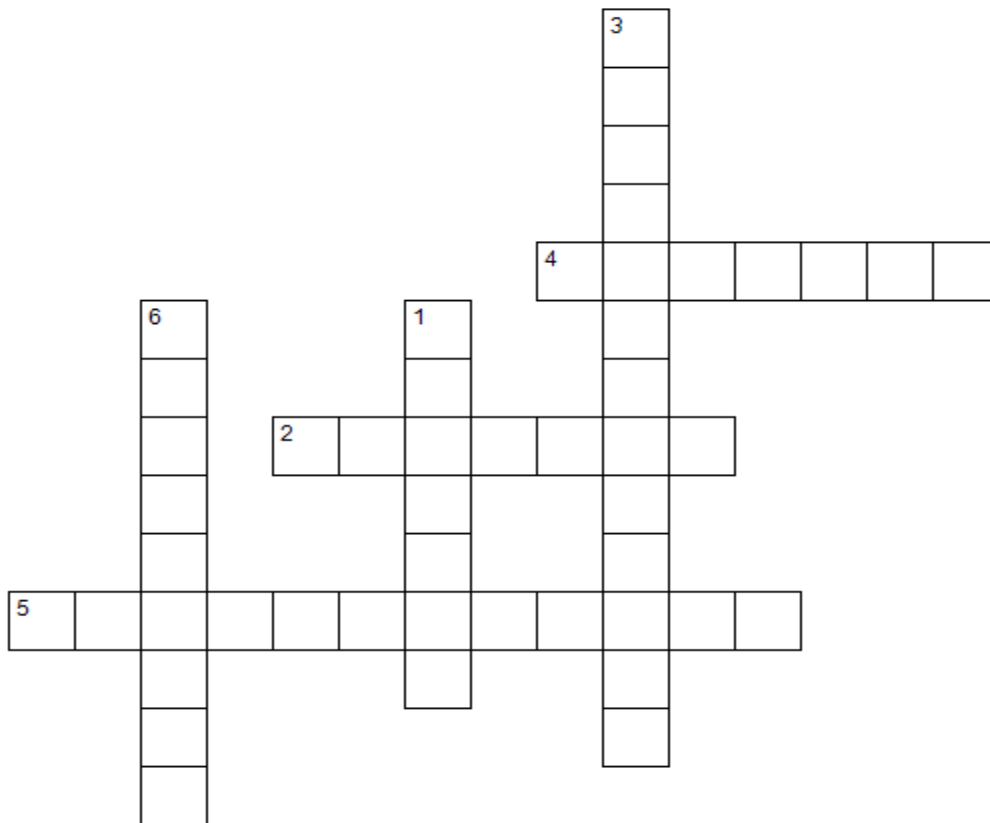
- I. It is located in the eastern hemisphere
- II. It is located in the western hemisphere
- III. It is located in the northern hemisphere.
- IV. It is located in the southern hemisphere.

- A. I and IV only
- B. I and III only
- C. II and III only
- D. II and IV only



## Additional Activities

**Directions:** Complete the crossword by identifying the words being described in each item below. Write your answers on a separate sheet of paper.

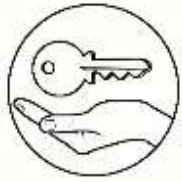


### Across:

2. It is described as the hemisphere of the earth that is located to the left side of the prime meridian.
4. It is the unit used in measuring the latitude and longitude of the globe.
5. The opposite of prime meridian.

### Down:

1. It is described as the hemisphere of the earth that is located to the right side of the prime meridian.
3. It is known as the  $0^{\circ}$  longitude.
6. An imaginary vertical line that divides the globe into eastern and western Hemisphere.



# Answer Key

## Lesson 1

<b>What I Know</b>
1. B
2. A
3. A
4. A
5. D
6. C
7. C
8. A
9. D
10. D
11. C
12. D
13. B
14. A
15. D

<b>Assessment</b>
1. D
2. A
3. C
4. B
5. C
6. C
7. B
8. A
9. A
10. B
11. A
12. A
13. A
14. C
15. A

## Lesson 2

<b>What I Know</b>
1. C
2. D
3. A
4. D
5. A
6. B
7. D
8. D
9. A
10. A
11. B
12. C
13. D
14. B
15. D

<b>Assessment</b>
1. C
2. C
3. C
4. D
5. B
6. A
7. C
8. B
9. A
10. C
11. A
12. A
13. A
14. C
15. B



## ***References***

### **Books**

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Mapa, Amelia et al. (2001). *EASE I Module 14 (The Earth's Atmosphere)*. Quezon City: Bureau of Secondary Education.

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