

SS1 Geography

Week 4: Latitude (Detailed Lesson Note)

Lesson Objectives

By the end of the lesson, students should be able to:

- Define latitude and explain how it is measured.
 - Describe the importance of the Equator.
 - Understand latitudinal distances and their significance.
 - Identify major latitudinal lines such as Tropic of Cancer, Tropic of Capricorn, Arctic Circle, and Antarctic Circle.
 - Explain the significance of these latitudinal lines in relation to climate and geography.
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1. Definition of Latitude

- Latitude refers to the angular distance of a point north or south of the Equator.
 - It is measured in degrees ($^{\circ}$), from 0° at the Equator up to 90° at the poles (North or South).
 - Lines of latitude run **east to west** but measure positions **north to south**.
 - These lines are also called **parallels** because they run parallel to the Equator and never meet.
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2. The Equator

- The Equator is the **0° latitude** line that divides the Earth into two halves: the Northern Hemisphere and the Southern Hemisphere.
- It is the longest parallel and circles the Earth horizontally.
- The Equator passes through countries like Nigeria, Brazil, Indonesia, Kenya, and Ecuador.
- It is significant because it is the reference point for all other latitudes.

- Places on the Equator experience roughly equal day and night throughout the year, and generally have a hot climate.
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3. Latitudinal Distances

- The distance between two lines of latitude is approximately **111 kilometers (69 miles)** everywhere on Earth.
 - Since there are 90 degrees between the Equator and the poles, the distance from the Equator to either pole is about **10,000 km**.
 - This regular spacing makes latitude useful for navigation, mapping, and defining climate zones.
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4. Major Latitudinal Lines and Their Significance

Latitude Line	Degree	Description & Location	Significance
Equator	0°	Divides Earth into Northern and Southern Hemispheres	Zone of highest solar energy; tropical climate; equal day/night
Tropic of Cancer	23.5° N	Northern boundary of the tropical zone	Marks northernmost position of sun's direct rays (Summer Solstice)
Tropic of Capricorn	23.5° S	Southern boundary of the tropical zone	Marks southernmost position of sun's direct rays (Winter Solstice)
Arctic Circle	66.5° N	Near North Pole	Region experiences 24-hour daylight/night during solstices
Antarctic Circle	66.5° S	Near South Pole	Region experiences 24-hour daylight/night during solstices

5. Climate Zones Defined by Latitude

- **Tropical Zone:** Between the Tropic of Cancer and Tropic of Capricorn. Characterized by hot, humid climate and abundant rainfall.
- **Temperate Zones:** Between the tropics and polar circles; experience moderate temperatures and four seasons.

- **Polar Zones:** Beyond Arctic and Antarctic Circles; very cold with long winters and phenomena like polar day and night.
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6. Measuring Latitude

- Latitude is measured from the Equator towards the poles using degrees (°).
 - Each degree is divided into 60 minutes ('), and each minute into 60 seconds (").
 - Instruments like a sextant and modern GPS devices are used for precise measurements.
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7. Visualizing Latitude

- Latitude lines are drawn horizontally on maps and globes.
 - The Equator is in the middle, with latitude lines increasing up to 90° N at the North Pole and 90° S at the South Pole.
 - Latitude helps in locating places and understanding climate patterns.
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8. Summary Table

Latitude Line	Degree	Hemisphere/Zone	Key Fact
Equator	0°	Divides N & S Hemispheres	Reference point for latitude
Tropic of Cancer	23.5° N	Northern Tropics	Sun directly overhead at Summer Solstice
Tropic of Capricorn	23.5° S	Southern Tropics	Sun directly overhead at Winter Solstice
Arctic Circle	66.5° N	Polar North	24-hour day/night at solstices
Antarctic Circle	66.5° S	Polar South	24-hour day/night at solstices