CHAPTER-1 LOCATING PLACES ON THE EARTH

🌍 What is a Map?

A map is a drawing or representation of a place, showing where things are. It can show a small area (like your school), a big area (like a state), or even the whole world. Maps help us find places easily.

Example: A city map can help us to find the way from the railway station to the bank.

📓 What is an Atlas?

An atlas is a book or collection of different kinds of maps.

🗺️ Mention various types of Maps with examples.

Physical Map – Shows natural features like mountains, rivers, oceans.

👉 Example: Physical Map of India

Political Map – Shows countries, states, cities, and boundaries.

👉 Example: Political Map of India with states and capitals

Thematic Map – Shows special information like population, rainfall, crops, etc.

👉 Example: Population Map of India

🗝️ What are the components of a map?

The three major components of a map are: -

Distance (Map Scale) –

The scale tells you the relationship between a distance on the map and the actual distance on the ground

👉 Example: Map Scale 1cm=50km means 1 cm on the map represent 50km on ground.

Direction – Maps usually show four main directions, called cardinal directions: North (at the top), East, South, and West (moving clockwise).

Intermediate directions are also used: Northeast (NE), Southeast (SE), Southwest (SW), and Northwest (NW).

👉 Most maps will have an arrow marked with the letter 'N' pointing to the north direction.

Symbols – Tiny pictures or marks used to show things like schools, hospitals, rivers, etc.

👉 Helps save space and make the map neat and readable.

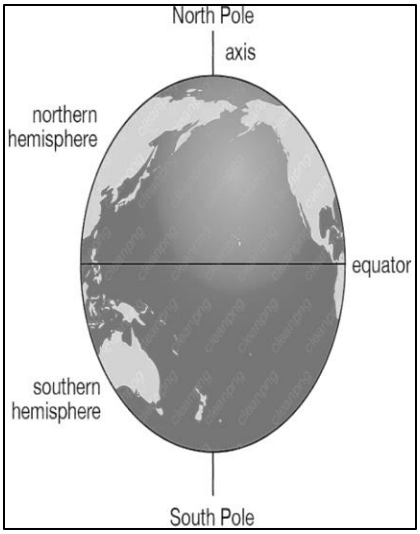
👉 Survey of India have fixed sets of symbols for maps of India.

🌐 Understanding the Globe

- A globe is a sphere on which a map is drawn. This may be a map of the Earth, the Moon etc.
- A globe of Earth is a small model of the Earth. It shows the true shape and layout of continents, oceans, and countries.

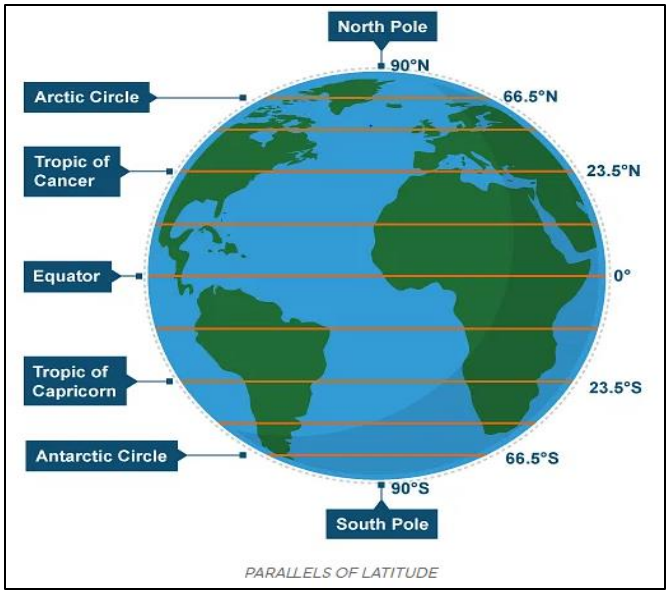
🗺 Coordinates: Latitude and Longitude

Just like addresses help us find houses, coordinates help us find places on Earth.



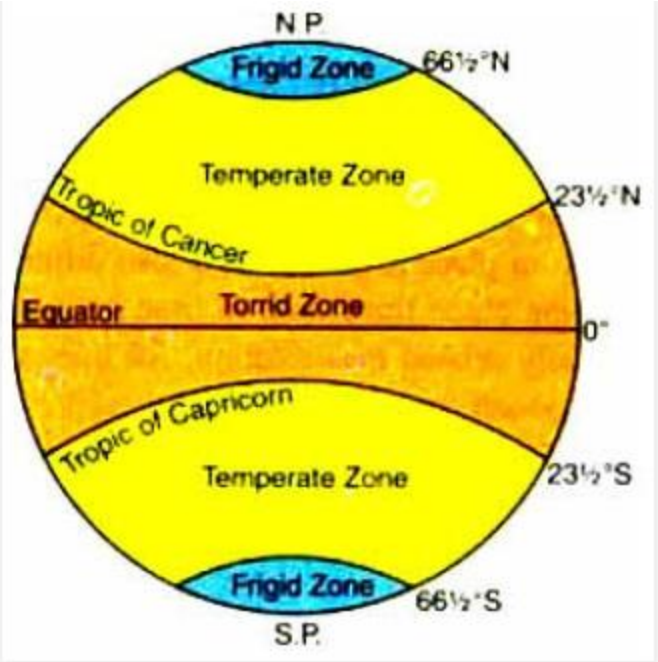
🧭 Latitude (Horizontal lines)

- Latitude is the distance north or south of the Equator, measured in degrees (°).
- The imaginary horizontal lines that run parallel to the Equator from east and west is called a parallel of latitude and it draws a circle around the Earth.
- The largest circle is the Equator, while the circles marked by the parallels of latitude grow smaller as we move towards the poles.
- The Equator is 0° latitude.
- North Pole: 90°N, South Pole: 90°S



PARALLELS OF LATITUDE

💡 Latitude affects climate:



The Earth is divided into three major temperature zones based on latitude:

🔥 1. Torrid Zone

Between Tropic of Cancer (23½°N) and Tropic of Capricorn (23½°S)

Hottest zone, gets direct sunlight.

🌤️ 2. Temperate Zones

Between Tropic of Cancer and Arctic Circle (North), and Tropic of Capricorn and Antarctic Circle (South)

Moderate climate, not too hot or cold.

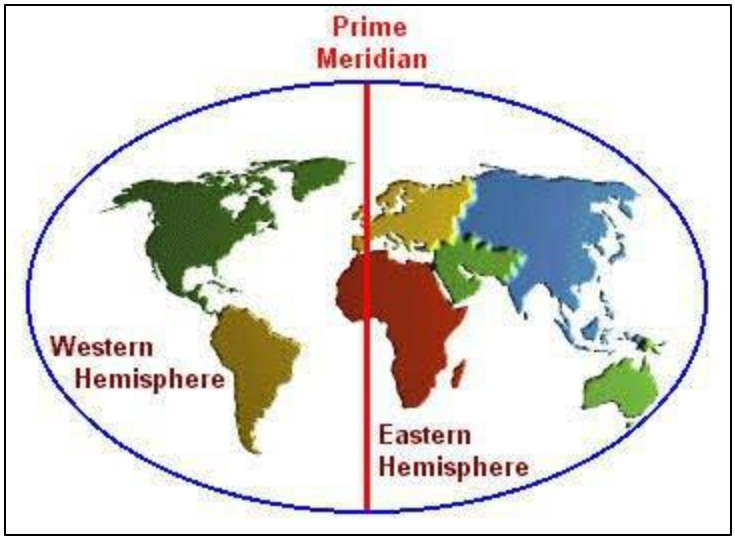
❄️ 3. Frigid Zones

Between Arctic Circle and North Pole, and Antarctic Circle and South Pole

Very cold, sun's rays are slanted.

↕️ Longitude (Vertical lines)

- ♠ Longitude is the distance east or west of the Prime Meridian, also measured in degrees (°).
- ♠ The Prime Meridian (0°) divides the Earth into the Eastern and Western Hemispheres.
- ♠ Meridians of longitude are imaginary half-circles that run from the North Pole to the South Pole.
- ♠ They are all the same length and meet at the poles.
- ♠ Meridians help us calculate time.



- In 1884, nations decided the meridian passing through Greenwich, London, England, would be the international standard Prime Meridian, marked as 0° longitude. It is also called the Greenwich Meridian.
- Historically, other prime meridians existed; for instance, ancient India had its own prime meridian called madhya rekhā (middle line) which passed through the city of Ujjayinī (modern Ujjain), a centre for astronomy.
- Longitudes go up to 180°.

🌎 Grid System

- When latitude and longitude lines cross, they form a grid. This helps us to pinpoint any place on Earth.
- 🗺️ Example: Delhi is located at 29°N latitude and 77°E longitude.

🕒 Time and Longitude

- The Earth spins on its axis from west to east, completing a full turn (360°) every 24 hours.
- This means the Earth rotates 15° of longitude per hour (360° / 24 hours = 15°/hour).
- Because of this rotation, different places on Earth experience different times of day (morning, midday, evening, night).
- Moving eastward from the Prime Meridian (0°), local time increases and moving westward, local time decreases.

🗣️ Local Time vs. Standard Time

- Local time is the time at a specific longitude, which varies across different longitudes. For example, the sun sets earlier in Assam than in Gujarat because Assam is further east, even if they are in the same country.

- It would not be convenient for a country to use many local times. Therefore, most countries adopt a standard time, which is based on a central meridian passing through them. This helps to unify time across a country.

IST – Indian Standard Time

- India's Standard Time is based on 82.5°E longitude, and is 5 hours 30 minutes ahead of GMT (Greenwich Mean Time).

Time Zones

- Standard times are organised into time zones, which broadly follow the 15° longitude zones.
- However, the lines dividing time zones are not always straight; they often deviate to respect each country's standard time and follow international borders.
- Large countries like Russia, Canada, or the USA have multiple time zones because they are too vast for a single time zone (e.g., USA has six, Russia has eleven).

International Date Line (IDL)

- Located around 180° longitude, opposite the Prime Meridian.
- travel eastward: Subtract a day (e.g., from Monday to Sunday).
- travel westward: Add a day (e.g., from Sunday to Monday).
- The IDL deviates from the exact 180° longitude in places to avoid dividing countries into two different days.