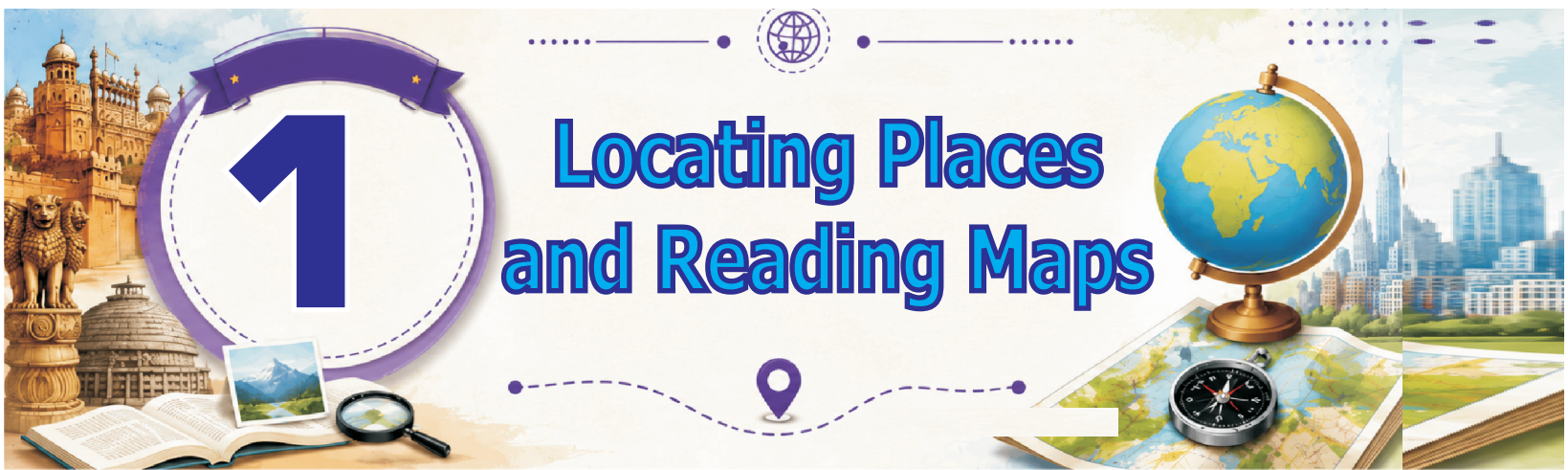


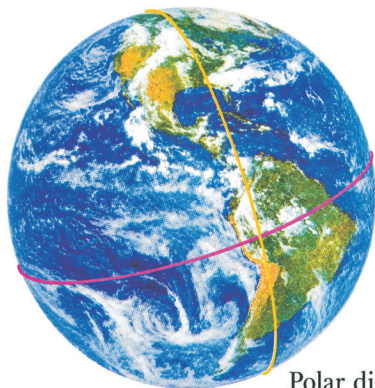


CHAPTER FOCUS

- Shape of Earth
- Globe
 - Latitudes
 - Prime Meridian
- Heat Zones
- Local Time
- Standard Time
- Maps
 - Types of Maps
- Measuring Distances
- Geographic Coordinates
- Sketch
- Longitudes
- Components of a Map

SHAPE OF EARTH

Earth is a unique planet. It is shaped like an oblate spheroid. It is bulging at the centre and is flat at the top and bottom. Earth's diameter at the Equator is 12,756 kilometres and at the Poles is 12,714 kilometres. From this, you can understand that Earth is a big planet. It is impossible to see the entire Earth from one place. To understand how it looks and moves, you need its model.



Earth

Equatorial diameter
12,756 km

Polar diameter
12,714 km

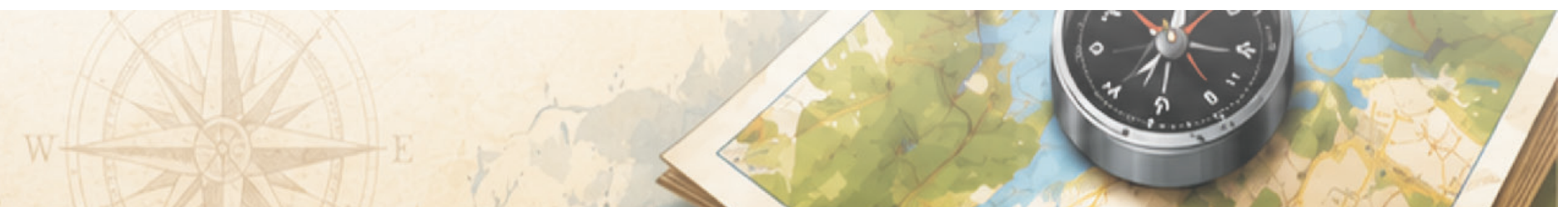
GLOBE

A globe is a small 3D model of Earth. It shows where and how the various landmasses exist and the location of different rivers and oceans. A globe shows how Earth rotates on an imaginary line passing through its centre, known as the axis. The two points on the top and bottom through which the axis of Earth passes are called the North Pole and the South Pole.

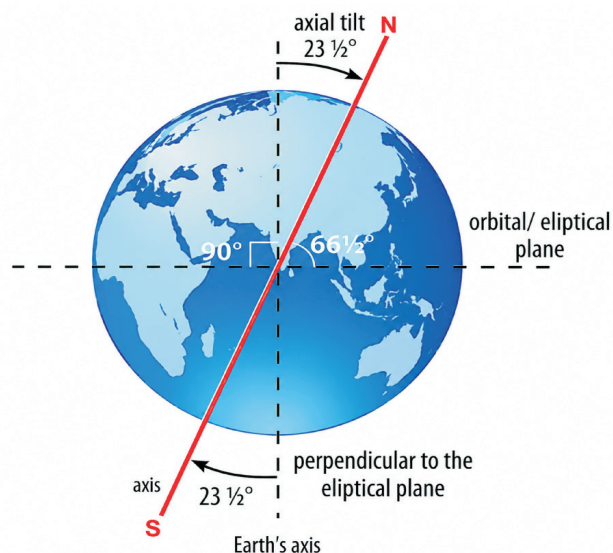


A model of globe

Have you ever played with a top? The top has a pin or nail in the centre and it rotates on that pin. Similarly, Earth also rotates on its axis.



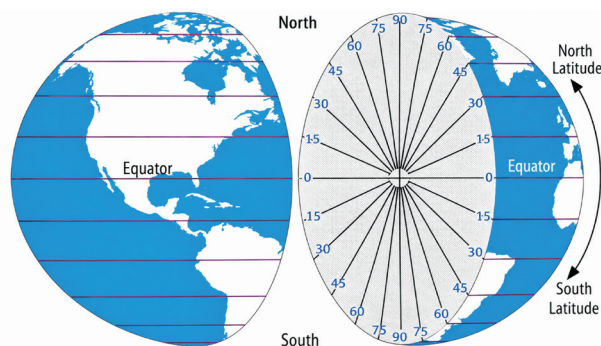
If you look closely, the axis of the globe is not perfectly vertical but tilted at an angle. The globe is tilted at $66\frac{1}{2}^\circ$ relative to its orbital plane.



With Earth's oblate spheroid shape, having no corners, beginning or end, it is challenging to locate places on Earth. A globe is marked with imaginary lines which help to locate places on it. These imaginary lines are called latitudes and longitudes. It would be very difficult to locate places on a globe and understand their interrelation without these imaginary lines. Let us read about these imaginary points and lines in detail.

Latitudes

Latitudes are imaginary lines running parallel to each other around the globe. Each hemisphere has been divided by parallel lines shown as concentric circles on a globe. They are marked in degrees.



Lines of Latitude

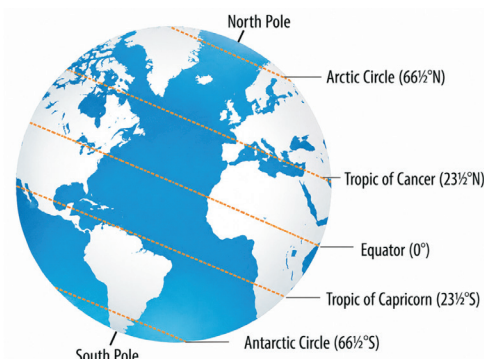
The degrees are obtained by the angle they form with the centre of Earth. The imaginary cut-out of Earth, the forming of angles and thus the latitudes are made very clear from the diagram below.

The Equator is the line of 0° latitude that divides Earth in into two equal halves: the Northern Hemisphere and the Southern Hemisphere. It runs around the centre of the globe. The degrees increase as you move away from the Equator towards the poles. The letters 'N' and 'S' are used to indicate north and south, like 10°N or 15°S and so on. There can be many subdivisions of the latitudes in the form of minutes. These subdivisions are denoted by minutes and are identified as $23^\circ 15'$ North (23 degrees 15 minutes north). There are 60 minutes in a degree.

Important latitude

There are seven important lines of latitude.

- Equator 0°
- North Pole (90°N)
- South Pole (90°S)
- Tropic of Cancer ($23\frac{1}{2}^\circ\text{N}$)
- Tropic of Capricorn ($23\frac{1}{2}^\circ\text{S}$)
- Arctic Circle ($66\frac{1}{2}^\circ\text{N}$)
- Antarctic Circle ($66\frac{1}{2}^\circ\text{S}$)



Important lines of latitude

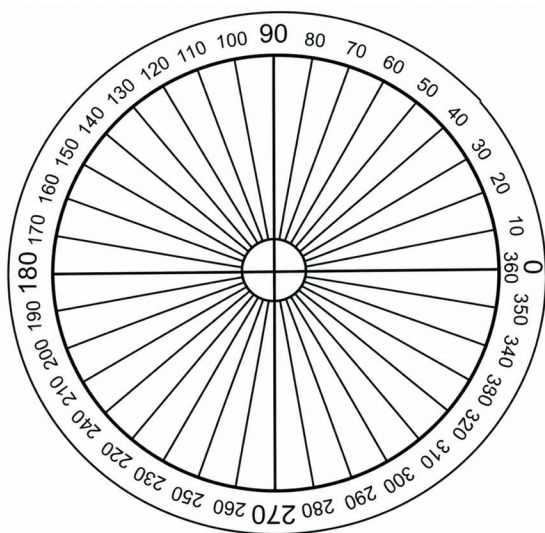
The latitudes help in dividing Earth into different heat zones as the spherical Earth with tilted axis does not get equal sunshine on all its parts.

Longitudes

The vertical lines on a globe that run from the North Pole to the South Pole are called meridians



of longitudes. **Longitudes** are equal in length. Like latitudes, longitudes are also measured in degrees and minutes. However, they do not run parallel to each other. They curve out and then again merge at the poles. Longitudes, when combined with latitudes, help determine precise locations on Earth through a system called geographic coordinates. Imagine a circle on top of Earth with its centre at the North Pole. These lines open outwards, as shown in the diagram. After reaching the widest part of Earth, i.e., the Equator, they start moving inwards up to the South Pole.



Imaginary circle from the North Pole

As you can see in the diagram, there would be 360° or 360 lines depicting each degree. There could be 60 lines between each degree depicting 1 minute each. Alternatively, these lines could be 10° apart, and we would have 36 lines in all. The lines are marked depending on the size of a globe.



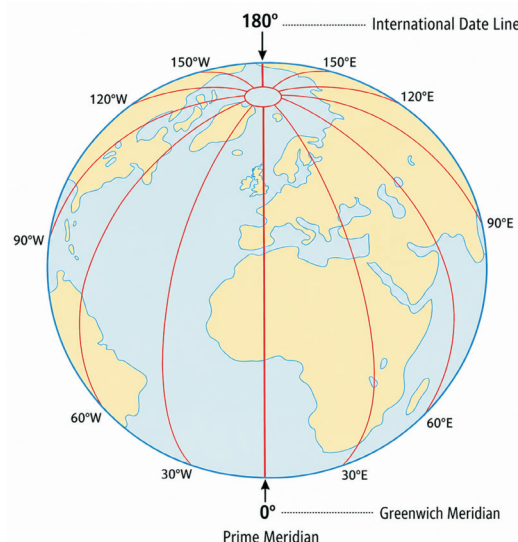
Let's Check 1

1. What do two points, one at the top and another at the bottom, denote on the globe ?
2. What do you understand about the 'axis of Earth' ?
3. Which latitude divides Earth into two hemispheres ?
4. Define longitude.
5. Name some important latitudes.
6. What is Equator ?

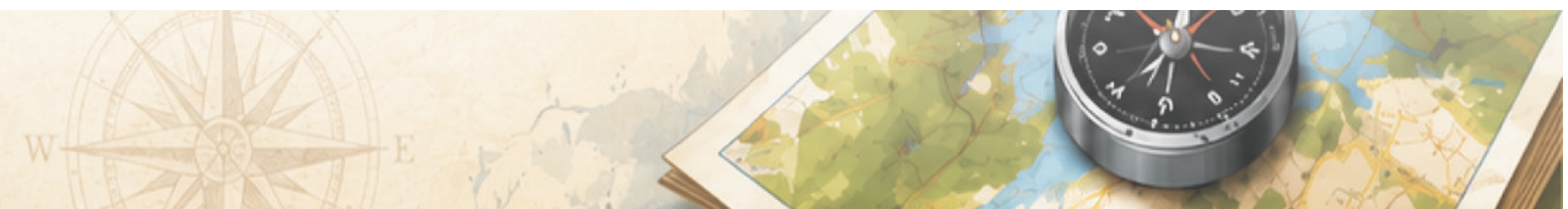
Prime Meridian

The **Prime Meridian** is the line of 0° longitude, the starting point for measuring distance both east and west around Earth. It divides Earth into East Hemisphere and West Hemisphere. This line runs through the astronomical observatory at Greenwich near London in the United Kingdom. On the absolutely opposite side, or 180° to the Prime Meridian, is the International Date Line that runs north-south across the Pacific Ocean from the North Pole to the South Pole. It defines the boundary between one day and the next. "All longitudes to the east of the Prime Meridian till the International Date Line are called East Meridians and those on the west are called West Meridians. The **International Date Line** is both 180°E and 180°W. However, the International Date Line is slightly irregular and does not follow the 180° East/West meridian. This has been done to ensure that it passes through the ocean and no land has a different date on either side of the line.

The Sun crossing the International Date Line means that the date changes. Similarly, if you cross the International Date Line while travelling by sea or air, you would be moving from one date to another. The direction of your movement will direct if you have added a date or reduced a date. If you are moving westward from Alaska to Japan, on crossing the date line, you would add a day, and in the reverse direction, you would lose a day.



Prime Meridian



Earth rotates from west to east on its axis. It takes 24 hours to rotate on its axis.

Since Earth takes 24 hours to rotate 360° , in one hour (60 minutes), it would traverse $360 \div 24 = 15^\circ$.

Thus 1° would take $60 \div 15 = 4$ minutes.

HEAT ZONES

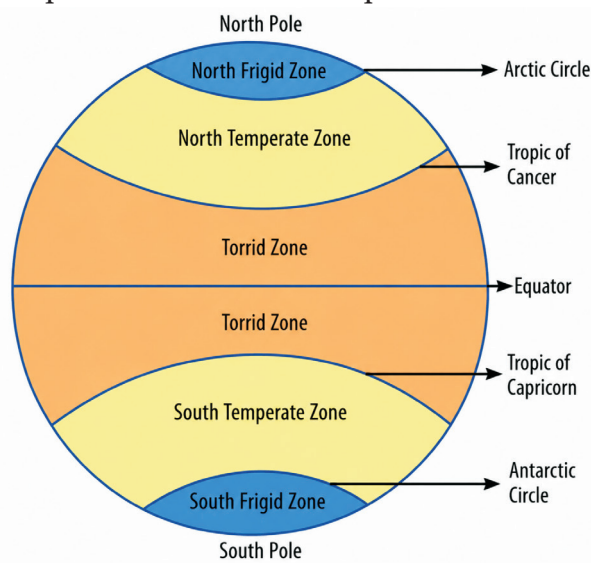
Earth's surface does not get the same amount of heat from the Sun. This happens because the distance of Earth's surface from the Sun varies due to the curvature of Earth and tilted axis. Hence some places are hot and some are cold. Earth can be divided into three heat zones.

Torrid Zone

The zone between the Tropic of Cancer ($23\frac{1}{2}^\circ$ N) and Tropic of Capricorn ($23\frac{1}{2}^\circ$ S) is called the Torrid Zone. In this zone, the surface of Earth receives vertical rays of the Sun throughout the year and thus is the hottest zone.

Temperate zones

The region between the Tropic of Cancer ($23\frac{1}{2}^\circ$ N) and the Arctic Circle ($66\frac{1}{2}^\circ$ N) in the Northern Hemisphere and the Tropic of Capricorn ($23\frac{1}{2}^\circ$ S) and the Antarctic Circle ($66\frac{1}{2}^\circ$ S) in the Southern Hemisphere is known as temperate zone.



Heat zones of Earth

This zone receives slanting rays of the Sun and thus the temperature is moderate in this zone.

Frigid zone

The region between the Arctic Circle ($66\frac{1}{2}^\circ$ N) and the North Pole (0° N) in the Northern Hemisphere and the Antarctic Circle ($66\frac{1}{2}^\circ$ S) and South Pole (0° S) in the Southern Hemisphere is known as frigid zone/ This zone receives slanting rays of the Sun. The Sun remains hardly above the horizon and this region remains extremely cold.)

LOCAL TIME

Local time is the time at a specific place based on the position of the Sun in the sky. It is based on the local meridian passing through that place. There are 180 meridians (one for each degree) to the west of the Prime Meridian and a similar number to the east. After every 15° , starting from the Prime Meridian, the time would be one hour ahead or behind. In other words, imagine 24 lines across a globe, each 15° apart and each differing by one hour. For any place which is between two meridians, we can use the fraction of a degree, that is, a minute to calculate the local time.

Earth rotates from west to east. As we move east of the Prime Meridian, we add an hour for every 15° , and we subtract 1 hour for every 15° that we move west.

STANDARD TIME

For determining the standard time, the local time of the central meridian of a region is chosen. Some countries are so large that they had to take many time zones; for example, Russia has 11 time zones. On the other hand, India extends between $68^\circ 7'$ E to $97^\circ 25'$ E. If every meridian had been accepted as a local time, there would be 29 local times, which would be very difficult to manage and would cause a lot of confusion. The making of timetables and movement schedules would be near impossible. Therefore, in India, the local time of the longitude 82° E which passes near Allahabad is regarded as the standard time for the entire country. All the watches are adjusted with



reference to the local time of this meridian. Time at this meridian is 5½ hours ahead of the Prime Meridian, which passes through Greenwich. While one part of East India may be seeing the sunrise, the Western part of Rajasthan would still have the darkness of pre-dawn moments. Yet the watches being set at **Indian Standard Time** would be showing the same clock hour.

The map shows how different countries of the world have fixed the standard time.



A map shows Standard Time of different countries

Now that we’ve learned about the globe, let’s read a story to explore maps and how they help us navigate directios.

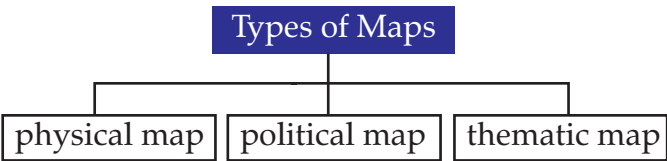
MAPS

A globe can be useful when we want to study Earth as a whole. But when we want to study a country or a state, the globe is of not much help. In such a situation people prefer using maps.

Maps are diagrammatic representations of Earth’s surface or part of it on a flat cloth or paper when drawn according to scale. The word ‘map’ comes from the Latin word ‘mappa’, which means a ‘napkin’. Maps give accurate and detailed information about land surface and human-made structures like roads, railways, bridges and hospitals as well as waterbodies. A flat surface is ideal to read from. Maps are easy to handle, easy to store and could contain huge amounts of information. That is why maps are preferred over globes. Cartography is the art or process of drawing or making maps.

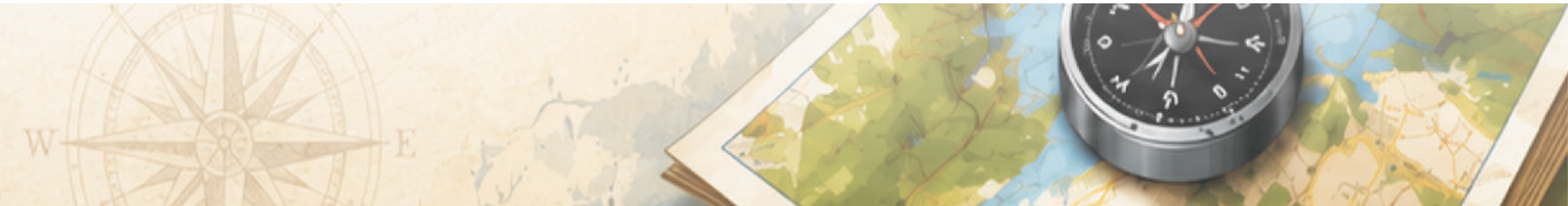
Types of Maps

Maps are of different types according to the information they give. Maps are generally classified into three categories: physical maps, political maps and thematic maps.



Physical map

A **physical map** shows natural landforms and physical features of an area, such as mountains, deserts, lakes, oceans and rivers. Different colours are used to show physical features, like blue is used to show waterbodies, brown is used to show mountains, yellow is used to show plateaus and green is used to show plains.





Physical map of Indina

Political map

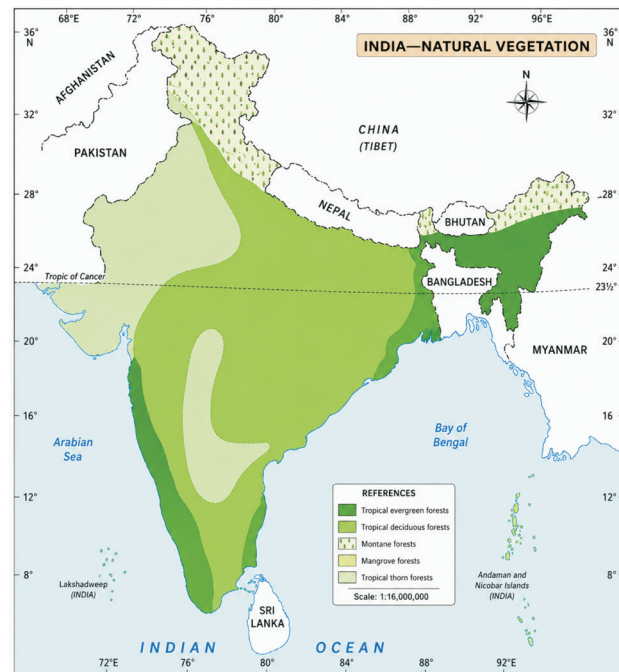
A **political map** shows the political divisions of Earth. It shows boundaries between countries, states, districts, cities and neighbourhoods.



Political map of India

Thematic map

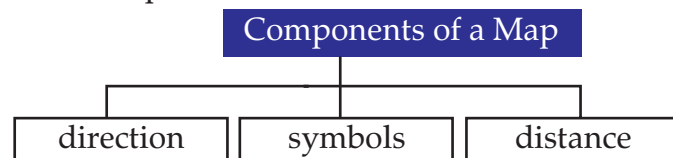
A **thematic map** shows information about a topic or theme. It can be a road map, rail map, weather map, wind or rain pattern map, industrial map, agricultural pattern map and forest map.



Thematic map of vegetation in India

Components of a Map

To understand a map, it is important to uderstand its different components. The major components of the map are :



Let us look at these components in detail.

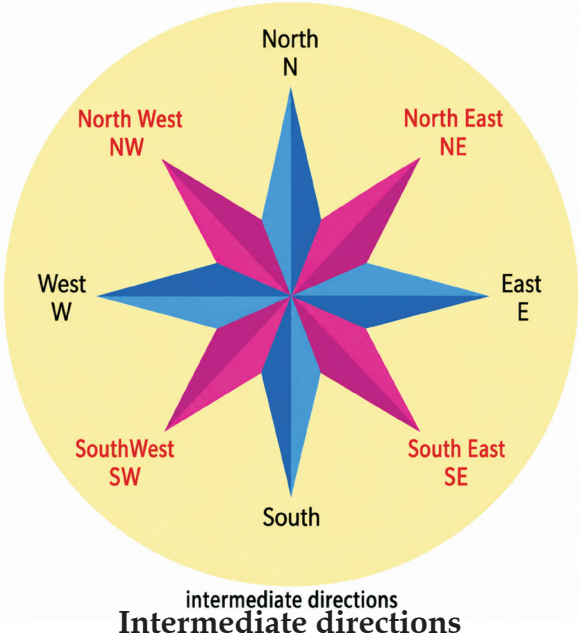
Directions

Direction is an important element of a map. Many maps have a compass rose to show direction. Some maps have a pointer or an arrow that points towards the north. The person using a map is required to align it to the north and then read it to understand the relative directions of places marked on it.

There are four major directions-North, South, East and West. They are known as cardinal points.



Besides these major directions we have four intermediate directions. These are located exactly at the centre of two cardinal directions. They get their name from the two directions on either side. For example, the direction between north and east is northeast. The direction between south and west is southwest. Similarly, there are northwest and southeast directions. The intermediate directions are very helpful in locating any place more accurately.



A compass is an instrument used to find directions. It has a magnetic needle that can rotate freely. The magnetic needle has a north pole and a south pole. The needle always points towards north and south direction. Place a compass on the map and align the north pointer on it with the north being shown on the compass. It is only after this you can locate places on the map and their directions on the ground.

Symbols

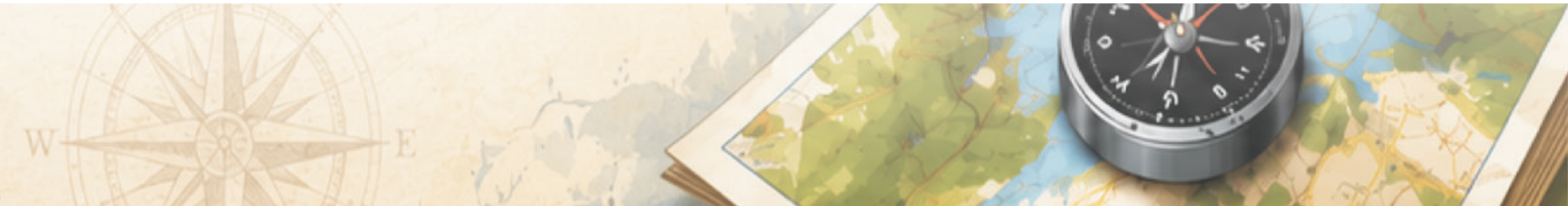
It is not possible to draw on a map the actual shape and size of different features such as buildings, roads, bridges, trees, railway lines or wells. So, they are shown by using certain symbols. These symbols are common across the world, so that people from different regions can easily read the map. These are also known as conventional symbols. Things like roads, tracks, railway lines,

ponds, temples, churches, mosques, bridges, overhead tanks, post offices, railway stations, state boundaries, borders, rivers and canals have symbols which are standardised.

These symbols do not represent the actual size but indicate the presence of a feature at a specific location. For example, symbol of a river on the map does not reflect its actual size, it only shows its location. A small river or a big river will have the same symbol. Similarly, the symbol for a tree is not indicative of the number of trees on the ground.

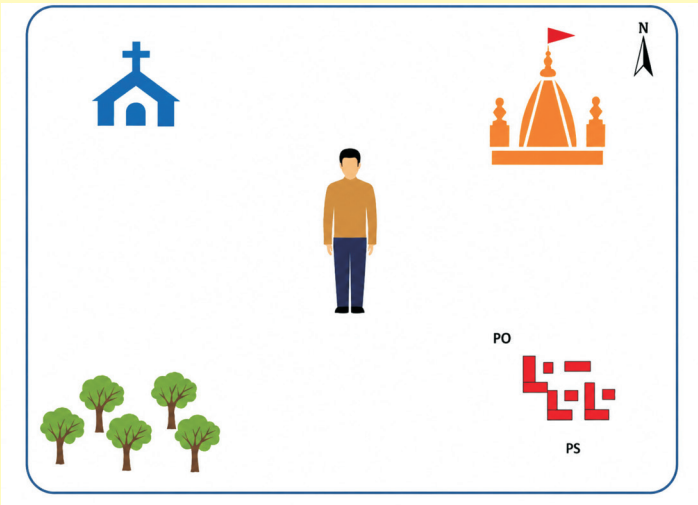
CONVENTIONAL SYMBOLS			
Railway line	: Broad Gauge Metre Gauge	 	
Roads	: Metalled Unmetalled	 	
Boundary	: International State	 	
River		Well	
Tank		Canal	
Bridge			

Temple		Church	
Mosque			
Post Office	PO		
Post & Telegraph Office	PTO		
Police Station	PS		
Settlement			
Tree			



Different colours are used on maps to signify different features. In the physical map of India, you can see different colours and the legend for the same. For example, blue is used for waterbodies and brown is used for mountains.

It is not necessary to remember each and every conventional symbol. The symbols are mostly listed on the map. They are given in a box placed outside. It is known as legend/key. They are to be referred to when you look at a map and want to use it to identify a place or to navigate it



Help the man find the way.

1. In which direction should be move to reach the temple ?
2. In which direction should be move to reach the orchard ?
3. The church is located to the _____ of the orchard.
4. The post office is located to the _____ of the village.
5. The police station is located to the _____ of the village.

Distance

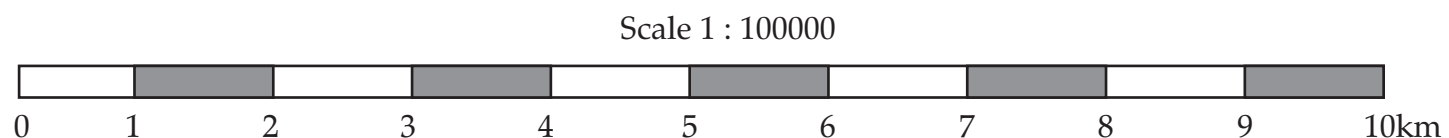
A map is much smaller than the actual size of the place it represents. It is possible to measure distances between two places marked on a map with accuracy. For this reason, all maps denote the scale on which they are made.

The scale of a map is the ratio between the actual distance on the ground and the distance shown on the map. It tells us how much distance measured on the map to the actual distance on the ground. Maps that represent the detailed view of larger

areas are called small-scale maps.

However, if a map is drawn to show the details of a part of a city or a town (smaller area), then such maps are called large-scale maps. A map stating the scale as 1 : 150000 indicates that 1 cm on the map represents 150000 cm on the ground, which can be understood as: 1 cm on the map = 1.5 km on the ground.

If the scale on a map is mentioned as 1:1000000, 1 cm on the map will represent km. Scales are usually represented on maps in the following manner :



The scale given above denotes that 1 unit on the map = 1 lakh units on ground.

In other words, 1 cm on map = 100000 cm on the ground.

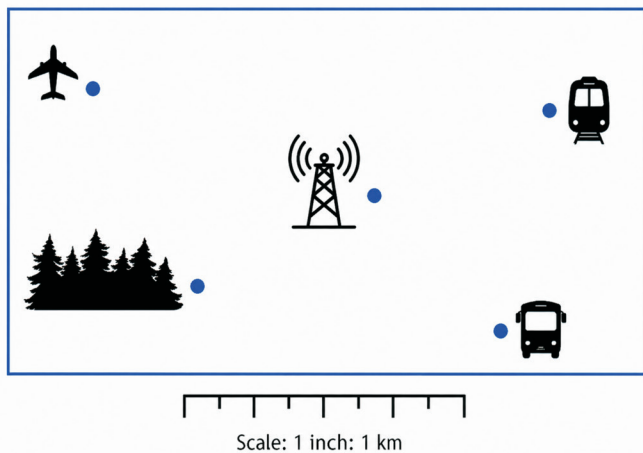
Since 100 cm = 1 m, 100000 cm = 1000 m = 1 km.

Thus, on a map with the scale of 1:100000, 1 cm on the map represents 1 km on the ground.

MEASURING DISTANCES

Look at the picture showing an airport, a metro station, a mobile tower, an orchard and a bus stop.





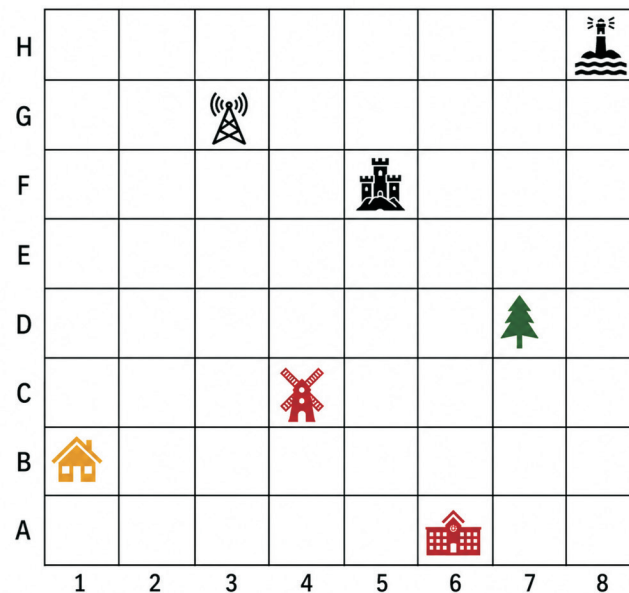
To measure the distance between two places, use a string to measure the distance between them and then use the given scale to calculate the actual distance on the ground.

Answer the following questions on the basis of the picture.

- What is the distance between the airport and the metro station?
- How far is the metro station from the orchard?
- What is the distance between the mobile tower and the bus stand ?

GEOGRAPHIC COORDINATES

Maps usually have a network of vertical and horizontal lines. These are parallels of latitude and meridians of longitude. These are called grid lines. These help in locating a place on the map. A place on Earth's surface can be located at its point of intersection. The vertical lines are given specific numbers and/or letters and progress from left to right. The horizontal lines are also given numbers and/or letters and progress from bottom to top. They form small squares on the map and any place falling in a square is accordingly indexed in the atlas.



In the grid map to locate a place based on grid lines, first consider the vertical lines which are on the left of the item/place. Then consider the horizontal lines below the item/place. The square on the top right of the intersection of the vertical and the horizontal lines depicts the square where the item/place is located. For example, in the given grid map the location of the pine tree would be 7D. Similarly, the square 8H shows a light house.

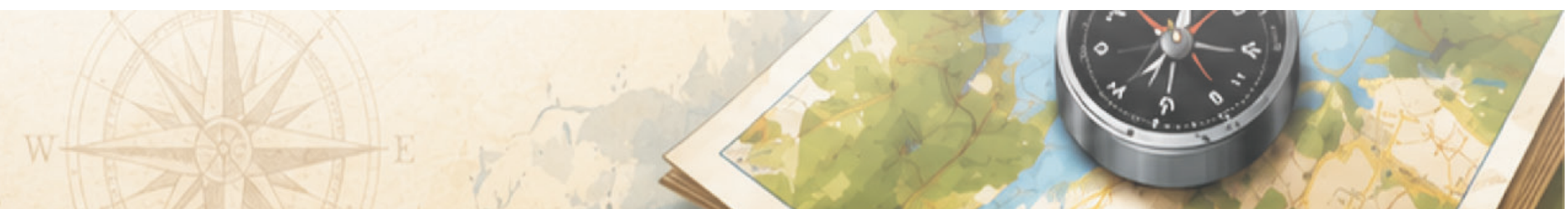
Based on the grid map, answer the following questions.

- What is the place located in square 4C ?
- In which square is the house located ?
- In which square is the school building located ?
- In which square is the fort located ?
- What is the place located in square 3G ?

Maps, undoubtedly, represent the location of anything in detail, but there are cases in which representing something in a map may be complicated. For example, if you are asked to show in a map the way from your house to the super market, then instead of representing it in a map, it can be represented by simply drawing a sketch that has all the important landmarks.

SKETCH

A sketch is a rough drawing of an area. It is not made to scale and just gives broad guidelines

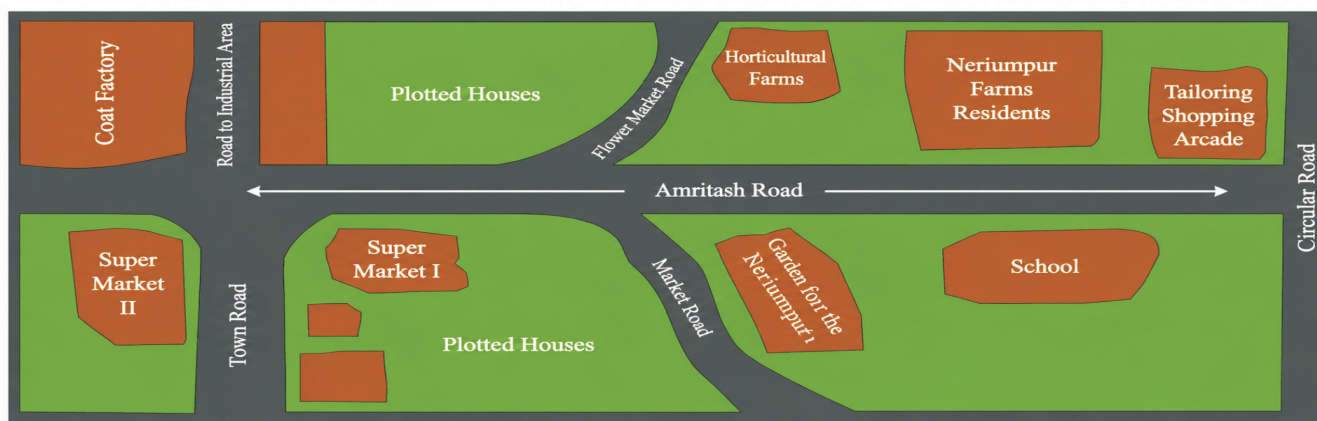


for finding or locating a place. Sketches can be made freehand or using geometrical instruments. They are not accurate in dimensions and may not be accurate in detail, as they are not based on a survey using instruments. Sketches are simple and easy to make.

While preparing a sketch, one should note that it should give a fair idea of directions and distances. Suppose you want to go to your friend's house, but you do not know how to get there. Your friend may make a rough sketch to show the way to his/her house. Such a rough drawing drawn without scale is called a sketch.

A person who uses a sketch should be able to orientate it to the ground and therefore ensure the following :

- One of the cardinal directions should be indicated on the sketch.
- Try and use as many conventional symbols as possible since they would be understood by all.
- A rough estimate of distances and markings will help in making the sketch more realistic.
- The greater the details in the sketch, the better it is.



Maps and sketches are very important for understanding geography. In the modern world, directions and routes are available on computers and smartphones, but still there are regions where no internet network is available. In such situation,

only traditional maps and compasses can help one find routes and places. Maps are also used to understand many other things like forests, terrains, weather and distribution of crops.

Key Words

latitudes : imaginary lines that run parallel to the Equator around the globe; also known as parallels

longitudes : imaginary lines that run from the North Pole to the South Pole; also known as meridians

Prime Meridian : the longitude which passes through Greenwich near London and is considered as 0°

International Date Line : the longitude which runs on the opposite side of the Prime Meridian on the globe (or at 180°) and is considered as the International Date Line

Indian Standard Time : the Indian Standard time is based on the 82½° East Meridian and thus is +5½ hours from the Greenwich Mean Time (GMT)

map : a drawing of Earth's surface or part of it drawn on a flat surface to scale

political map : a map showing different countries and states of the world with boundaries

physical map : a map showing relief features of Earth

sketch : a rough drawing drawn without scale





Exercises

A. Choose the correct option.

- Which of the following lies between the Tropic of Cancer and the Arctic Circle in the northern hemisphere and the Tropic of Capricorn and the Antarctic Circle in the southern hemisphere ?
(i) Torrid Zone (ii) Temperate Zone (iii) Frigid Zone (iv) None of these
- Which ocean does the International Date Line pass through ?
(i) Pacific Ocean (ii) Indian Ocean (iii) Arctic Ocean (iv) Antarctic Ocean
- What should we add for each hour as we move east of the Prime Meridian ?
(i) 10° (ii) 15° (iii) 20° (iv) 30°
- How many time zones are there in Russia ?
(i) 9 (ii) 10 (iii) 11 (iv) 12
- Where does the Standard Meridian of India pass through ?
(i) $82\frac{1}{2}^\circ\text{E}$ (ii) $82\frac{1}{2}^\circ\text{W}$ (iii) $80\frac{1}{2}^\circ\text{W}$ (iv) 83°E
- Which of the following is not an intermediate direction ?
(i) Northeast (ii) Northwest (iii) Southeast (iv) North-South
- For what scale is necessary for ?
(i) sketch (ii) map (iii) both (i) and (ii) (iv) none of these
- What does blue colour show on a map ?
(i) waterbodies (ii) hills (iii) deserts (iv) plains

B. Fill in the blanks.

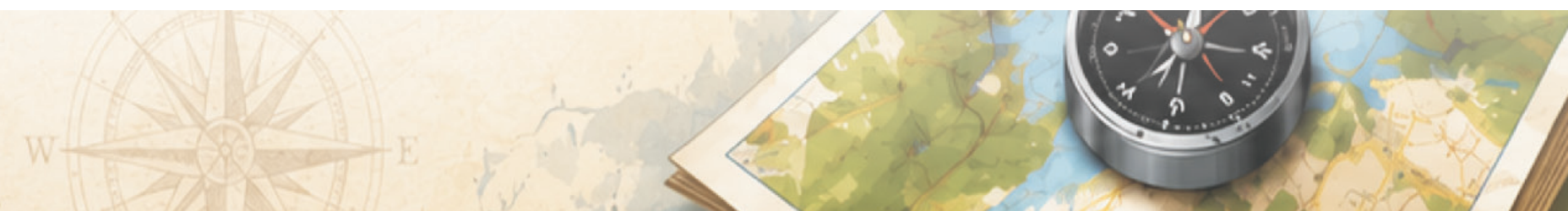
- The axis is an imaginary line passing through the topole.
- The axis is tilted at an angle of
- Lines of do not run parallel to each other.
- The zone has a moderate climate.
- map depicts information on a particular topic or theme.
- The four principal directions are called points.
- A is the most common instrument used to locate directions.
- A sketch is a rough drawing of an area.

C. Match the following.

- | | |
|------------------------------|-----------------------------|
| 1. waterbodies | (i) intermediate direction |
| 2. atlas | (ii) physical map |
| 3. southwest | (iii) blue |
| 4. compass | (iv) a book of maps |
| 5. natural features of Earth | (v) used to find directions |

D. State whether true or false.

- The degrees of latitudes decrease as we move away from the Equator to the poles.



2. The North and South Hemispheres are equal.
3. The torrid zone has a moderate climate.
4. The Equator is the widest part of Earth.
5. Longitudes are horizontal lines starting from the North Pole and terminating at the South Pole.
6. Details of Earth can easily be shown on a globe.
7. We can show natural features as well as human-made structures on a map.
8. Grey colour is used to show mountains on a map.

E. Answer the following questions briefly.

1. What is a globe? What does it show ?
2. Write a short note on the frigid zone.
3. What is the Prime Meridian ?
4. What is local time ?
5. What is a map ?
6. Why are maps more useful than a globe ?
7. What is the significance of the arrow which points towards the north on a map ?
8. How does a compass help in finding directions ?
9. What are grid lines ?
10. Why is distance a very important aspect of a map ?

F. Answer the following questions in detail.

1. Explain the heat zones of Earth.
2. How is time assigned to a place through the meridians ?
3. Why have countries fixed a Standard Time ? Explain this considering India as an example.
4. Write any three differences between latitudes and longitudes.
5. Write the advantages and limitations of a globe.
6. What do you understand by scale of a map ? Mention its importance.
7. Explain in detail the three different types of maps.
8. How do symbols help in reading a map ? Why are conventional symbols used in a map

HOTS

1. Google maps are useful tools in modern life. Do you think they can completely substitute the aspect of map-reading ?
2. The temperature on Earth is increasing every year. This is due to human activities. How does this phenomenon impact the environment ? Do you think there is a need for sensitising our family and friends about this issue ?



Activities

- (A) make a chart with different watches showing the comparative time in Singapore, Japan, New York (USA), Sydney (Australia) and Moscow (Russia) at 7 a.m. in Delhi.



(B) On the political map of India, mark the Longitude of $82\frac{1}{2}^{\circ}\text{E}$ and shade the states through which it passes.

(C) On an A4 sheet draw the conventional symbol for the following.

- | | | |
|------------|-------------------|------------|
| • a river | • a metalled road | • a temple |
| • a church | • a settlement | • a bridge |

NCERT EXERCISE QUESTIONS WITH ANSWERS

1. Returning to page 10 and to Fig. 5.2 in Chapter 5 of this textbook, taking the scale to be $2.5\text{ cm} = 500\text{ km}$, calculate the real distance from the estuary of the Narmada River to the estuary of the Ganga river. (Hint: round off your measurement on the map to an easy number.)

Ans. To calculate the real distance from the estuary of the Narmada River to the estuary of the Ganga River using the given scale ($2.5\text{ cm} = 500\text{ km}$), follow these steps :

- Use a ruler to measure the distance between the two points (Narmada River estuary and Ganga River estuary) on the map. Suppose the distance measures approximately 12 cm.
- Given that 2.5 cm on the map represents 500 km in reality, you can set up a proportion to find the actual distance.

Distance on map (cm) = Real distance (km)

2.5 cm 500 km

$$12\text{ cm} = x\text{ km}$$

$$= 12\text{ cm} \times \frac{500\text{ km}}{2.5\text{ cm}}$$

$$x = \frac{6000\text{ km}}{2.5\text{ cm}}$$

$$x = 2400\text{ km}$$

Therefore, the real distance from the estuary of the Narmada River to the estuary of the Ganga River is approximately 2400 km.

2. Why is it 5 : 30 pm in India when it is 12 pm or noon in London ?

Ans. It is 5 : 30 pm in India when it is 12 pm or noon in London because of the following reasons :

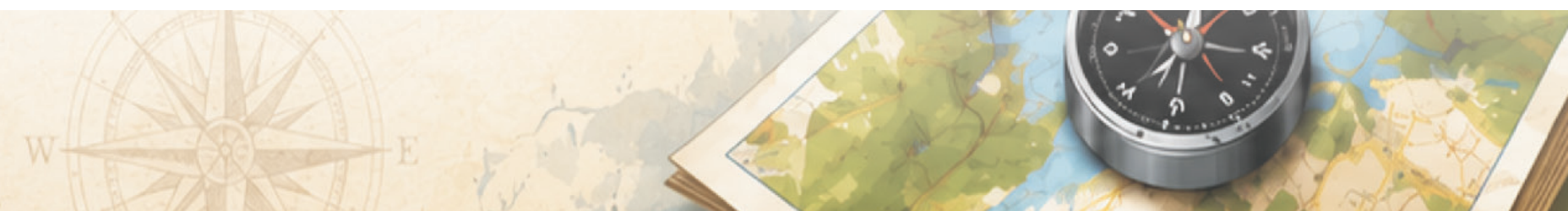
- London is located at 0 degree longitude while the time of $82\frac{1}{2}^{\circ}\text{E}$ longitude is taken as Standard Time in India.
- There is a difference of $82\frac{1}{2}$ degree between the longitude of London and the Standard Meridian of India ($82\frac{1}{2}$ degree E).
- Time in India is ahead of London. It is 4 minutes ahead at every longitude towards the East.
- Hence, time in India is ahead of London by 5 : 30 hours ($4 \times 82\frac{1}{2} = 330$ minutes or 5:30 hours).

3. Why do we need symbols and colours in the map ?

Ans. We use symbols and colours in the map due to following reasons :

- It is not possible to draw, on a map, the actual shape and size of different features such as buildings, roads, bridges, trees, railway lines or a well. So, they are shown by using certain letters, shades, colours, pictures and lines. These symbols give a lot of information in a limited space. "Colours play an essential role in a map as they help to distinguish and identify different features, such as landforms, bodies of water, and political boundaries. For example, blue colour is used to depict water bodies, green is used to indicate forests or vegetation, and brown is used to show mountainous areas, etc.

4. Delhi's and Bengaluru's latitudes are 29°N and 13°N ; their longitudes are almost the same, 77°E . How much will be the difference in local time between the two cities ?



Ans. Delhi and Bengaluru have nearly the same longitude, so the difference in local time is based on their latitude.

- **Latitude difference** : 29°N (Delhi) – 13°N (Bengaluru) = 16°

- **Time difference** : Each degree of latitude difference equals 4 minutes of time.

$16^{\circ} \times 4 \text{ minutes} = 64 \text{ minutes}$ So, Delhi and Bengaluru have a local time difference of about 64 minutes.

5. Mark the following statements as true or false; explain your answers with a sentence or two.

- (i) All parallels of latitude have the same length.
- (ii) The length of a meridian of longitude is half of that of the Equator.
- (iii) The South Pole has a latitude of 90°S .
- (iv) In Assam, the local time and the IST are identical.
- (v) Lines separating the time zones are identical with meridians of longitude.
- (vi) The Equator is also a parallel of latitude.

Answers :

- (i) **False** (*Explanation* : Parallels of latitude vary in length. The Equator is the longest parallel, while those closer to the poles are shorter).

- (ii) **False** (*Explanation* : The length of a meridian of longitude is the same as the length of the Equator. Both run from pole to pole and are equal in length).

- (iii) **True** (*Explanation* : The South Pole is located at 90 degrees south of the Equator, making its latitude 90°S).

- (iv) **True** (*Explanation* : Assam, like the rest of India, uses Indian Standard Time (IST), so the local time and IST are the same.)

- (v) **False** (*Explanation* : While time zones are

based on meridians of longitude, the lines separating them are not always straight and can be adjusted to follow country borders).

- (vi) **True** (*Explanation* : The Equator is the most important parallel of latitude, located at 0° latitude).

Sources-based Question

Read the below passage and answers the following questions :

A map is a representation or a drawing of an area. It shows us how to get to different places. There are different kinds of maps, such as political, physical, thematic, and road maps. Political maps show countries and cities, while physical maps show natural features like mountains and rivers. Thematic maps provide specific kinds of information, such as population density or climate. Road maps are used for navigation, showing roads, highways, and important landmarks. Maps have various elements, including symbols, scales, and directions, which help in understanding the represented area. The Prime Meridian and the Equator are important reference lines in geography, dividing the Earth into hemispheres and helping in determining locations.

1. What is the main purpose of a map

Ans. The main purpose of a map is to represent an area and show how to get to different places.

2. Name two types of maps mentioned in the passage and their features.

Ans. Ans. Two types of maps mentioned are political maps, which show countries and cities, and physical maps, which show natural features like mountains and rivers.

3. What elements are commonly found in maps ?

Ans. Common elements found in maps include symbols, scales, and directions.



Picture-based Questions

Observe the picture and answer the following questions :



1. Which direction represents latitude ?

Ans. Latitude measures the distance north or south of the equator.

2. What is measured by longitude ?

Ans. Longitude measures the distance east or west from the Prime Meridian

