

### 3. Latitude Longitude and Time

#### Exercise

1. Answer the following questions in about 30 words:

(i) Which are the two natural points of references on the earth?

**Answer:** North and South Poles are the two natural points of references on the earth. The spinning of the earth on its axis from west to east provides these two natural points.

(ii) What is a great circle?

**Answer:** A Great Circle is a circle on the surface of the earth that divides the earth into two equal halves. For example, equator is the largest circle and divides the globe into two equal halves.

(iii) What are coordinates?

**Answer:** The latitudes and longitudes are commonly referred to as geographical coordinates as they provide systematic network of lines upon which the position of various surface features of the earth, can be represented.

(iv) Why does the sun appear to be moving from east to west?

**Answer:** The sun appear to be moving from east to west because the earth rotates from west to east over its axis and takes 24 hours to complete one rotation.

(v) What is meant by local time?

**Answer:** The time based on the meridian through a specific place, as a city, in contrast to that of the time zone within which the place is located is called local time.

2. Distinguish between latitudes and longitudes

**Answer:**

Latitude	Longitude
Run from East-west, parallel to the equator	Run from North to South

Used to demarcate temperature zones	Used to determine local time
Lines are parallel to each other	Lines converge at the poles
The distance between the two latitudes is approximately 111 km	The distance between the two longitude is maximum at equator, i.e., 111.3 km and minimum at poles , i.e., 0 km.
Latitude measures up to 180 degrees, i.e., 90° N and - 90° S.	Longitude measures up to 360 degrees

### ACTIVITY

1. Find out the locations of the following places with the help of your atlas and write their latitudes and longitude

Place	Latitude	Longitude
Mumbai		
Vladivostok		
Cairo		
New York		
Ottawa		
Geneva		

<b>Johannesburg</b>		
<b>Sydney</b>		

**Answer:**

Place	Latitude	Longitude
Mumbai	19° 4' N	72° 52' E
Vladivostok	43° 10' N	132° 0' E
Cairo	30° 2' N	31° 14' E
New York	40° 42' N	74° 0' W
Ottawa	45° 25' N	75° 41' W
Geneva	46° 12' N	6° 8' E
Johannesburg	26° 12' S	28° 2' E
Sydney	33° 52' S	151° 12' E

**2. What would be the time of the following cities if the time at Prime Meridian is 10 m.**

**Delhi, London, Tokyo, Paris, Cairo, Moscow**

**Answer:**

Delhi	3:30 p.m.
-------	-----------

London	11:00 a.m.
Tokyo	7:00 p.m.
Paris	12:00 Noon
Cairo	12:00 Noon
Moscow	1:00 p.m.