

Our Earth

Improve your learning

Q. 1. Look at the map of India in an Atlas and identify latitude and longitude for the following places:

Kanyakumari _____ and _____
Imphal _____ and _____
Jaisalmer _____ and _____
Pune _____ and _____
Patna _____ and _____

Answer : Kanyakumari 8.0883° N and 77.5385°E

Imphal 24.8170° N and 93.9368° E

Jaisalmer 26.9157° N and 70.9083° E

Pune 18.5204° N and 73.8567° E

Patna 25.5941° N and 85.1376° E

Q. 2. Identify the words that match with Latitude and Longitude (parallel lines, vertical lines, horizontal lines)

Answer : The words that match with latitude are: parallel lines and horizontal lines.

The word that matches with longitude is vertical lines.

Q. 3. Look at the world map of time zone in the text page 13.

a) If you travel from Vijayawada to Paris to which time zone are you moving?

b) If you are travelling from Hyderabad to Tokyo which time zone are you moving? _____.

Answer : (a) Vijayawada, being a city in South India, belongs to the Indian Standard Time zone (IST). If you travel from Vijayawada to Paris, you are flying to the Central European Time Zone (CET), to which all the European countries belong. CET is 4.5 hours behind IST.

(b) If you travel from Hyderabad to Tokyo, you are moving from India to Japan. This means you are moving from the Indian Standard Time Zone (IST) to Japan Standard Time zone (JST). JST is 3.5 hours ahead of IST.

Q. 4. Why is it difficult to study the formation of the earth and its structure?

Answer : The earth's surface is predominantly made up of rocks which are thick in diameter and difficult to break through. During the earth's formation, these rocks were liquid in form, due to excessive heat. Over time, the temperatures cooled down, allowing the rocks to solidify and heavier rocks to sink down to the center of the earth.

The lighter rocks remained on the surface and broke down to create soil. Scientists have attempted to dig further into the earth to discover the deeper layers, lying beneath the crust, but they are incapable of digging deep enough. This is due to the solid rocks, the thick diameter of the crust and the excessive heat and temperature in the deeper layers which are closer to the core. To study the formation and structure of the earth, scientists need to rely on earthquakes which create cracks in the earth's crust and study samples of magma.

Q. 5. Read the paragraph under the heading of “Internal structure of the earth” and answer the question.

How can you say the earth is still very active?

Answer : Our Earth is in a constant state of formation and destruction, what with the numerous volcanoes, earthquakes, the rise of mountains and subduction of land due to processes taking place deep down within the bowels of the planet. This constant state of change is why we can say the Earth is still very active.

Q. 6. What is a grid and how does it help us?

Answer : Grid is a network of longitudes and latitudes drawn on a map. This helps us locate places on the map and learn a lot about them, like which direction we would have to go to reach it, what time it would be there at any moment, and how hot or cold it would be there.

Q. 7. Differentiate between a. Local and Standard time b. Equator and Prime meridian

Answer :

	Local Time	Standard Time
(a)	(i) It refers to the time of a particular country or place.	(i) It refers to the official time of a region, consisting of several countries.
	(ii) It depends on the movements of the sun.	(ii) It depends on the law made in a country.
	(iii) It changes due to the shift in longitude.	(iii) It remains constant in the country.

	Equator	Prime Meridian
(b)	(i) It is the line of latitude which passes through the center of the earth, that passes through 13 countries.	(i) It is the line of longitude that passes through Greenwich, in England.
	(ii) It separates the Northern and Southern hemispheres.	(ii) It separates the Eastern and Western hemispheres.
	(iii) It is located at 0 degrees latitude.	(iii) It is located at 0 degrees longitude.

Q. 8. If every state follows its local time then what problems will arise?

Answer : If every state follows its local time, the following problems will arise:

- (i) People traveling to different states would have to change their clocks too often.
- (ii) There would be confusion and chaos in the timings of railways, airlines, buses etc.
- (iii) The schedules of television shows, live shows and games, news, etc. would be disrupted.

Q. 9. With the help of your teachers find out the standard meridian of given countries:

1. Nepal 2. Pakistan 3. Bangladesh 4. England 5. Malaysia 6. Japan

Answer : 1. Nepal: Longitude $86^{\circ}20'E$. It passes through Mount Gauri Shankar.

2. Pakistan: Longitude $74^{\circ}22'E$.

3. Bangladesh: 90.00° E longitude, which passes over the Harukandi Union of Harirampur Upazila of the Manikganj District.

4. England: Longitude 0 degree, which passes over Greenwich.

5. Malaysia: Longitude 105 degree.

6. Japan: Longitude 135 degrees east.