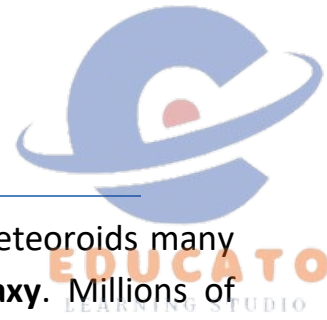


GEOGRAPHY

Chapter 1: The Earth In The Solar System





The Earth In The Solar System

Celestial Bodies

The Solar System is a family of eight planets, natural satellites, asteroids, meteoroids many other celestial bodies. Our Solar System is a part of the **Milky Way Galaxy**. Millions of galaxies make the **Universe**.

All the objects including the Sun and planets which shine in the sky at night are called **celestial bodies**.



All the objects in the sky are called celestial bodies.

These are also known as heavenly bodies. Some of the celestial bodies are:

The Sun

- It is in the centre of the Solar System.
- The Sun is the source of light and heat for the solar system.
- The Sun binds the entire solar system.
- It is made up of extremely hot gases.
- We do not feel the extreme heat of the Sun as it is far away from the Earth.
- The Sun is about 150 million kilometres away from the Earth.

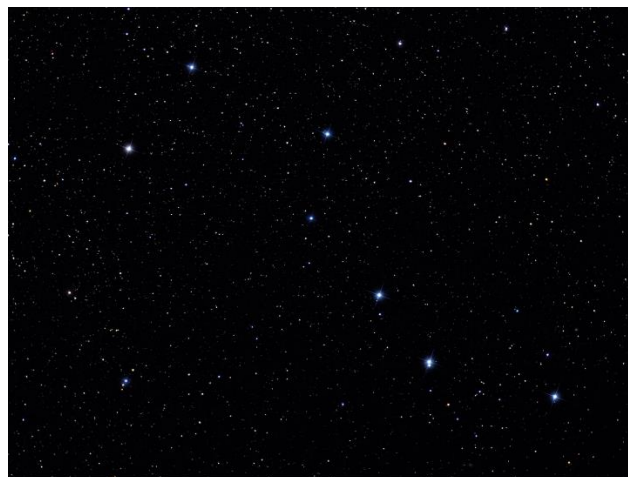


The Sun



The Stars

- Stars are hot and very big in size.
- They appear small to us as they are very far away from us.
- The Sun is a star.
- Stars have their own heat and light.
- Various patterns are formed by different groups of stars. These patterns are called constellations.
- Some known constellations are the Ursa Major (Big Bear) and the Saptarishi (Little Bear). Saptarishi is a group of seven stars which can be recognized easily and is part of the Big Bear.
- The North Star, also known as the Pole Star, indicates the north direction.
- In the ancient times, people tried to find out the location of places with the help of the Pole Star.



Stars

The Moon

- The Moon is a natural satellite of the Earth.
- The Moon moves around the Earth in about 27 days. It takes the same time to rotate

on its axis. This is the reason why only one side of the Moon is visible to us from the Earth.

- The Moon neither has water nor air. Thus, life is not possible on it.
- We can see the Moon only once in a month. This is called the full moon night or Purnima.
- About fifteen days after the full moon day, we are not able to see the moon. This is called New moon night or Amavasya.



Full Moon

Satellites

Satellites are celestial bodies which move around the planets. The Moon is a natural satellite which revolves around the Earth. An artificial satellite is a man made satellite which is constructed by scientists to gather information about various planets including the Earth. Some of the artificial satellites are INSAT, EDUSAT etc.



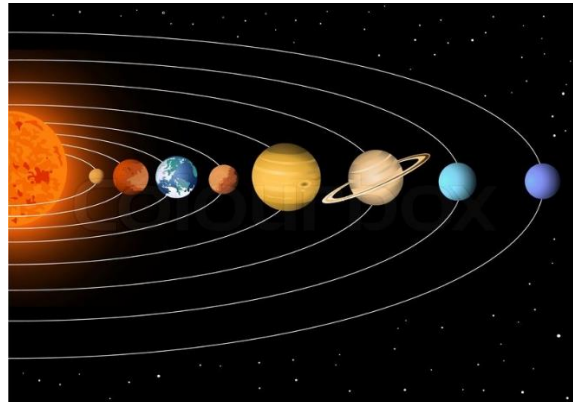
An artificial satellite

Planets

- The word 'planet' comes from the Greek word 'planetai' which means 'wanderers'.
- There are eight planets in our Solar System, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.
- Mercury is the planet nearest to the Sun and it takes only 88 days to revolve around the Sun.



- All the planets move around the Sun in fixed paths called orbits which elongated in shape.
- Venus is also known as the ‘Earth’s twin’ as its shape and size are very much similar to the Earth.
- Jupiter is the largest planet in the Solar System.
- Pluto, which was the ninth planet, is now considered to be a dwarf planet.



The eight planets

Difference between Stars and Planets

Stars	Planets
Stars have their own light.	Planets do not have the light of their own. They shine by reflecting the light of the Sun.
There are billions of stars in the sky.	There are only eight planets.
Stars twinkle	Planets do not twinkle
Stars have high temperatures.	Planets have low temperature.

Earth

- The Earth is the third nearest planet to the Sun and the fifth largest planet in size.
- The Earth is a little flattened at the pole and therefore its shape is described as Geoid.
- The Earth has water and air, which includes the life supporting gas oxygen, and thus it is the only planet which has conditions which favour life.
- Due to the above reasons, the Earth is known as the unique planet in the Solar System.
- As two third of the Earth’s surface is covered with water, it appears blue from outer space. Thus, it is also known as the blue planet.



The Earth is also known as the blue planet as more than two thirds of its surface is covered with water



Asteroids and Meteoroids

Asteroids are small bodies which move around the Sun. They are found between the orbits of Mars and Jupiter. Many scientists have claimed that these asteroids are the parts of a planet which might have exploded many years ago.

Meteoroids are small pieces of rock which revolve around the Sun. Sometimes, these meteoroids may come near the Earth. Most of them get burned as they enter the Earth's atmosphere due to friction. At times they may strike the Earth's surface creating a hollow depression on the ground.



A meteorite

MIND MAP : LEARNING MADE SIMPLE CHAPTER-13

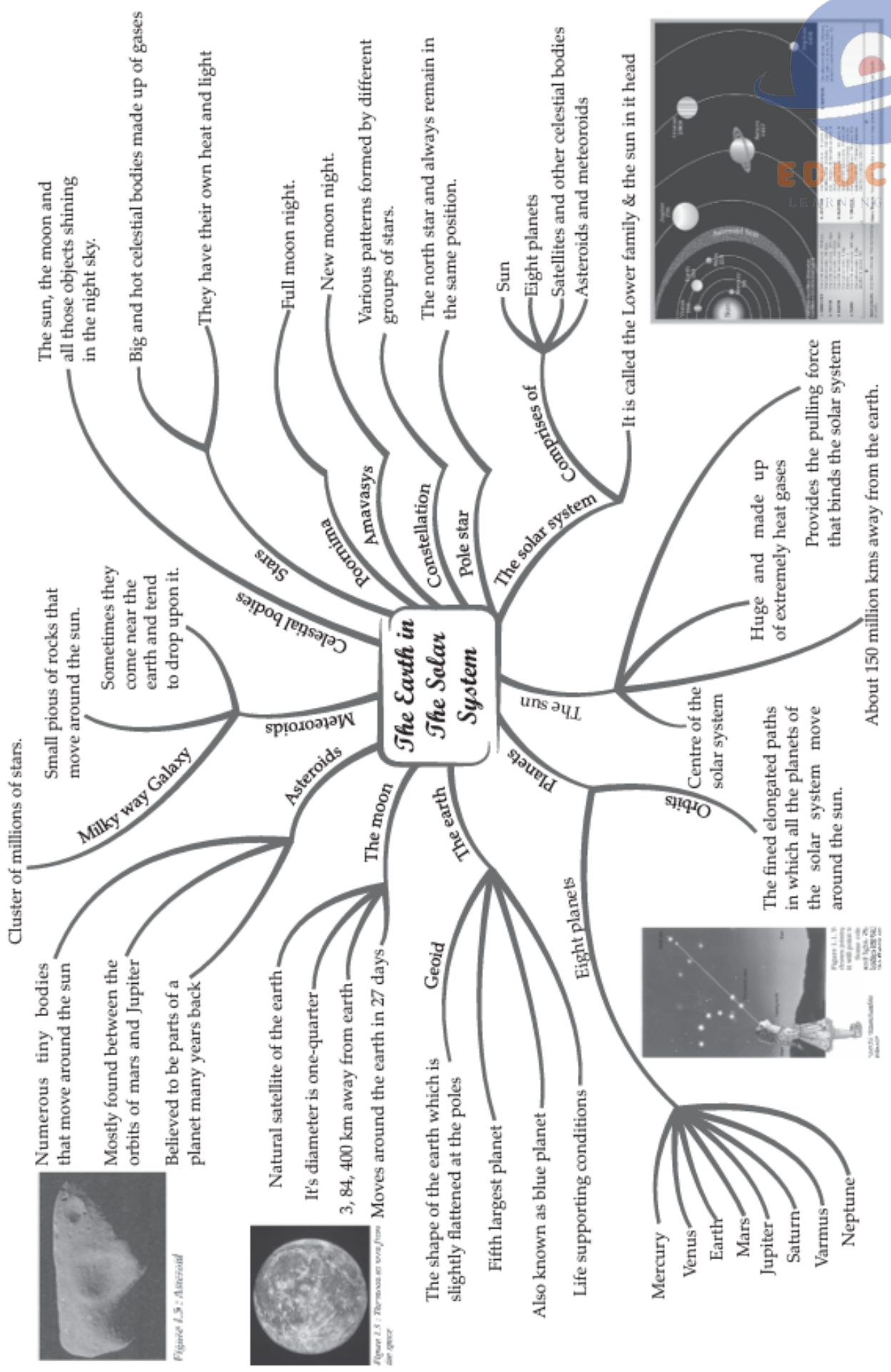


Figure 1.5 : Asteroid



Figure 1.5 : The moon as seen from the earth



Figure 1.5 : A person standing on the surface of the planet Mars



Important Questions



➤ Multiple Choice Questions:

Question 1. Which is the recently located planet?

- (a) Pluto
- (b) Mars
- (c) Earth
- (d) Uranus major

Question 2. What is ultimate source of heat and light for the planets?

- (a) Pluto
- (b) Sun
- (c) Moon
- (d) Ursa Major

Question 3. Which among the following is an constellation?

- (a) Ursa Major
- (b) Pluto
- (c) Earth
- (d) Mars

Question 4. Which is the third nearest planet to the Sun?

- (a) Mars
- (b) Saturn
- (c) Pluto
- (d) Earth

Question 5. Name the natural satellite of the Earth?

- (a) Saturn
- (b) Moon
- (c) Sun
- (d) Mars

Question 6. How does the moon shine

- (a) Have their own natural light
- (b) Reflects the Venus light



(c) Reflects the earth light

(d) Reflects the sunlight

Question 7. What is the orbital period of the Moon?

(a) 25 days

(b) 27.32 days

(c) 28 days

(d) 29 days

Question 8. The Stars are not visible during the day because

(a) Of their self-illumination

(b) Stars are far away from the earth

(c) Sun light is very bright

(d) Their size is large

Question 9. Moon appears big because

(a) It is very big than the earth

(b) It is bigger than the sun

(c) It is near to the earth

(d) It is far away from the earth

Question 10. Which star is the head of the solar system

(a) Earth

(b) Moon

(c) Sun

(d) Big bear

Question 11. Which is the closest planet to the Sun

(a) Earth

(b) Venus

(c) Mars

(d) Mercury

Question 12. Which is the brightest planet in the universe?

(a) Mercury

(b) Venus

(c) Earth

(d) Saturn



Question 13. Which is the nearest star to the earth

- (a) Mercury
- (b) Moon
- (c) Venus
- (d) Sun

Question 14. All the planets move around the sun in an _____

- (a) Rectangular path
- (b) Straight path
- (c) Elliptical path
- (d) Circular path

Question 15. Why is the earth called as Blue Planet?

- (a) Air colour is blue
- (b) Land colour is blue
- (c) Building having blue colour
- (d) Two-third surface is covered by water

➤ **Fill in the blanks:**

1. The North Star indicates the _____ direction.
2. The sun is in the _____ of the solar system.
3. We can see the full moon only once in about a _____ time.
4. Full moon night is also known as _____.
5. Ursa Major or Big Bear is a _____.
6. _____ was a famous astronomer of ancient India.

➤ **Write true (T) or false (F):**

1. All the planets move around the sun in an elongated path.
2. It is huge and made up of extremely hot liquids.
3. The word 'planet' comes from the Greek word "Planetai" which means 'wanderers'.
4. The moon is in the centre of the solar system.
5. Till recently (August 2006), Pluto was also considered a planet.
6. Word geography is made of two Greek words, 'ge' meaning 'earth' and 'graphia' meaning 'writing'.

➤ **Very Short Questions:**



1. How long does it take to go from a new moon to a full moon?
2. Name few dwarf planets.
3. Which is the third nearest planet to the sun?
4. Which is the closest celestial body to our earth?
5. Name the natural satellite of the earth?
6. Where are the most asteroids found?
7. How many times can we see full moon in a month time?
8. How long does it take for the moon to complete one revolution?
9. What is a geoid?
10. Why do the stars look so small in the sky?
11. From where does Earth receive heat and light?
12. What is the speed of light?
13. How much time light takes to reach the earth?
14. Who are called astronomers?
15. What cast shadow on the moon?

➤ Short Questions:

1. Write a short note on asteroids.
2. Name all the planets according to their distance from the sun.
3. What is meant by the 'Solar System'?
4. What are stars?
5. Why do we see only one side of the moon always?

➤ Long Questions:

1. Why the Earth is called a unique planet?
2. Despite being our nearest star, the tremendous heat of the sun is not felt so much. Why?
3. Write a short note on Sun.
4. How do meteoroids burn up?
5. Write about Human-made Satellite?

ANSWER KEY –

➤ Multiple Choice Answer:

1. (a) Pluto



2. (b) Sun
3. (a) Ursa Major
4. (d) Earth
5. (b) Moon
6. (d) Reflects the sunlight
7. (b) 27.32 days
8. (c) Sun light is very bright
9. (c) It is near to the earth
10. (c) Sun
11. (d) Mercury
12. (b) Venus
13. (d) Sun
14. (c) Elliptical path
15. (d) Two-third surface is covered by water

➤ **Fill in the blanks:**

1. north
2. centre
3. month's
4. Poornima
5. constellation
6. Aryabhatta

➤ **Write true (T) or false (F):**

1. True
2. False
3. True
4. False
5. True
6. True

➤ **Very Short Answer:**

1. A fortnight.
2. Pluto, Ceres, 2003 and UB313



3. Earth is the third nearest planet to the sun.
4. The moon is the closest celestial body to our earth.
5. Moon is the natural satellite of the earth.
6. They are found between the orbits of Mars and Jupiter.
7. We can see the full moon only once in about a month's time.
8. The moon moves around the earth in about 27 days.
9. A sphere with its ends flattened at poles (just like earth) is called geoid.
10. The stars look so small in the sky because they are very far from us.
11. Earth gets all its heat and light from the sun, which is its nearest star.
12. Light travels at the speed of about 300,000 km per second.
13. The light of the sun takes about eight minutes to reach the earth.
14. Those who study the celestial bodies and their movements are called astronomers.
15. It has mountains, plains and depressions on its surface. These cast shadows on the moon's surface.

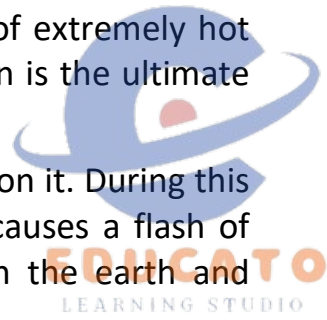
➤ Short Answer:

1. There are numerous tiny bodies which also move around the sun. These bodies are called asteroids. They are found between the orbits of Mars and Jupiter.
2. There are eight planets in our solar system. In order of their distance from the sun, they are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.
3. The sun, eight planets, satellites and some other celestial bodies known as asteroids and meteoroids form the solar system. We often call it a solar family, with the sun as its Head.
4. Some celestial bodies are very big and hot. They are made up of gases. They have their own heat and light, which they emit in large amounts. These celestial bodies are called stars. The sun is a star.
5. The moon moves around the earth in about 27 days. It takes exactly the same time to complete one spin. As a result, only one side of the moon is visible to us on the earth.

➤ Long Answer:

1. Conditions favourable to support life are probably found only on the earth. The earth is neither too hot nor too cold. It has water and air, which are very essential for our survival. The air has life-supporting gases like oxygen. Because of these reasons, the earth is a unique planet in the solar system.
2. The sun is the ultimate source of heat and light for the solar system. But that tremendous heat is not felt so much by us because despite being our nearest star, it is far away from us. The sun is about 150 million km away from the earth.

3. The sun is in the centre of the solar system. It is huge and made up of extremely hot gases. It provides the pulling force that binds the solar system. The sun is the ultimate source of heat and light for the solar system.
4. Sometimes these meteoroids come near the earth and tend to drop upon it. During this process due to friction with the air they get heated up and burn. It causes a flash of light. Sometimes, a meteor without being completely burnt, falls on the earth and creates a hollow.
5. A Human-made Satellite is an artificial body. It is designed by scientists to gather information about the universe or for communication. It is carried by a rocket and placed in the orbit around the earth. Some of the Indian satellites in space are INSAT, IRS, EDUSAT, etc.



GEOGRAPHY

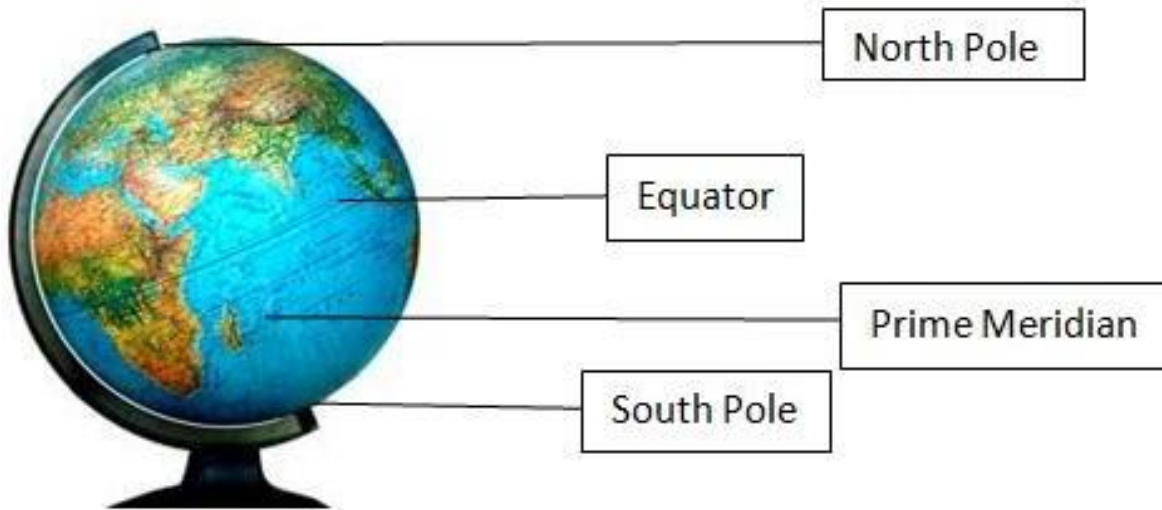
Chapter 2: Globe: Latitudes and Longitudes



Globe: Latitudes and Longitudes

The Globe

A globe is a 3D miniature model of the Earth on which all countries, continents and oceans are shown in a correct proportionate size. Globes are of various sizes.



A needle, fixed into the globe in a tilted manner, is known as its **axis**. The uppermost point of the globe represents the North Pole and the bottom end is known as the South Pole. There are many horizontal lines on the globe which are known as latitudes and vertical lines are known as longitudes. The globe is divided into two equal halves by a latitude, which is known as the **Equator**. The Equator is the 0° latitude. Similarly, the longitude at 0° is known as **Prime Meridian**.

Important Parallels of Latitudes

- The Equator is an imaginary circular line (latitude) which divides the Earth into two equal halves. The northern part of the Earth is known as the **Northern Hemisphere** and the southern part is known as the **Southern Hemisphere**.
- Latitudes are circular and all parallel circles from the Equator up to the poles are known as parallels of latitudes. The parallels of latitudes are measured in degrees.
- The 90° north latitude represents the North Pole and the 90° south latitude marks the South Pole.
- All parallels to the north of the Equator are called north latitudes and all parallels to the south of the Equator are called south latitudes.
- The **Tropic of Cancer** at 23°N lies in the Northern Hemisphere.
- The Tropic of Capricorn at 23°S lies in the Southern Hemisphere.

- The Arctic Circle at 66°N lies to the north of the Equator.
- The Antarctic Circle at 66°S lies to the south of the Equator.

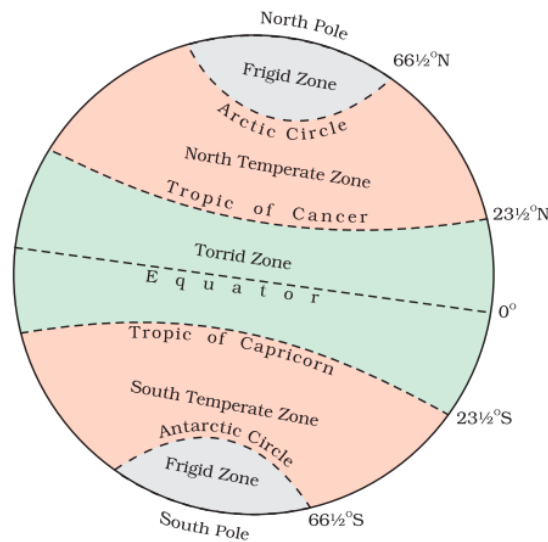
Heat Zones of the Earth

The various heat zones of the Earth are:

Torrid Zone: The Sun is directly overhead at least once during the year on all latitudes lying between the Tropic of Cancer and the Tropic of Capricorn. As a result, this area receives maximum heat from the Sun. **Temperate Zones:** The latitudes lying between the Tropic of Cancer and Arctic Circle in the Northern Hemisphere and the areas between the Tropic of Capricorn and

Antarctic Circle in the Southern Hemisphere lie in the Temperate zone. Here the Sun does not shine directly overhead the latitudes. The regions lying in this zone experience a moderate climate.

Frigid Zone: The Sun's rays go on decreasing towards the pole. In the areas between the Arctic Circle and the North Pole in the Northern Hemisphere and the Antarctic Circle and the South Pole in the Southern Hemisphere. The Sun does not rise much above the horizon at the poles and therefore, the regions lying in this zone experience an extremely cold climate.

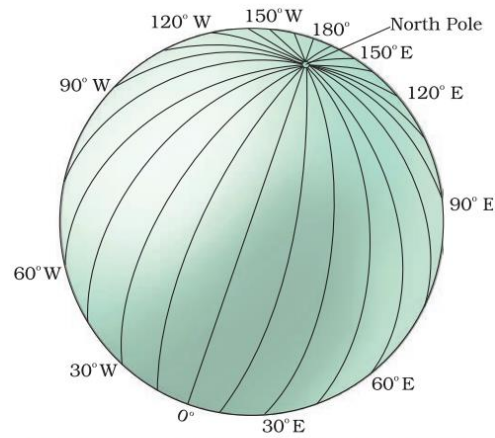


Important Latitudes and Heat Zones

Meridians of Longitude

- It is not possible to find out the exact location of a place only on the basis of latitudes. We also have to take into account the longitudes.
- The vertical lines which run from the North Pole to the South Pole are called longitudes or meridians of longitudes.
- The distance between two longitudes is measured in terms of degrees. Longitudes are semi-circular and distance between them decreases as they go towards the poles.

- The **Prime Meridian** is a 0° longitude which passes through the British Royal Observatory at London. It divides the Earth into the Western Hemisphere and the Eastern Hemisphere.
- When the latitudes and the longitudes crisscross each other at right angles, they form a geographical grid or coordinate, which help us to determine the exact location of a place.

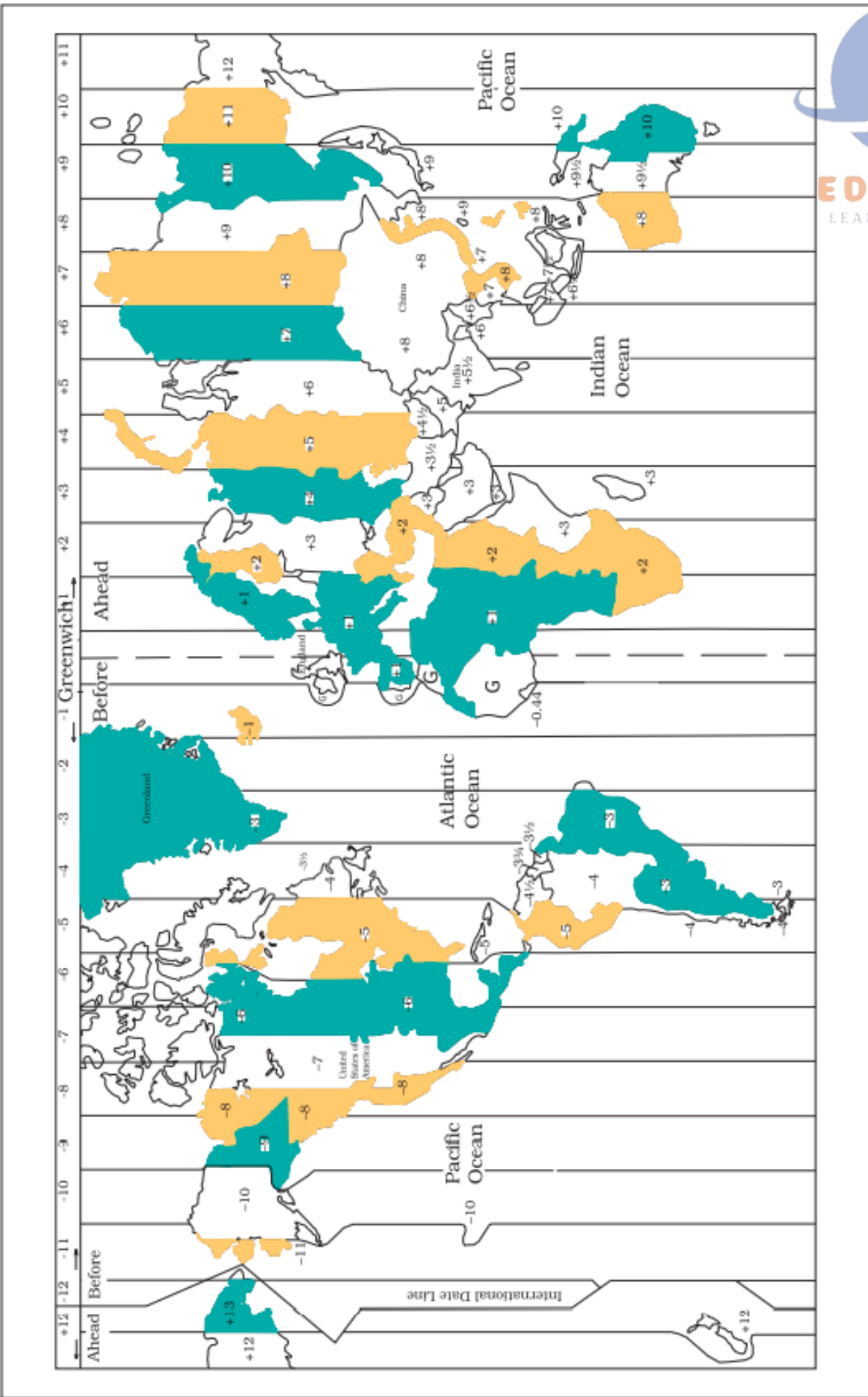
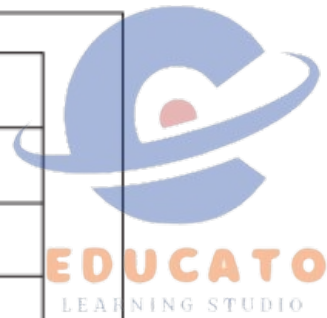


The distance between all the longitudes becomes zero at the Poles

Time and Longitude

- As the Earth completes one rotation from the west to the east in 24 hours, every meridian receives the direct sunlight of the Sun once every day.
- When the Greenwich meridian receives direct sunlight, the places located along this meridian experience mid-day. As the Earth rotates from the west to the east, the places which are located to the east of Greenwich are ahead of Greenwich Time.
- In the same way, the places located to the west of Greenwich are behind the Greenwich Time.
- The Earth has been divided into twenty-four time zones of one hour each. Each zone thus covers a 15° of longitude.





Time zones of the World

Indian Standard Time

The local time of a place depends on the longitude which passes through it. Many longitudes pass through India. Therefore, the standard time for each country is usually taken as the time of the central meridian which passes through it. In India, the $82\frac{1}{2}^{\circ}\text{E}$ longitude determines the standard time. This is known as the **Indian Standard Time**. This longitude passes through Allahabad in Uttar Pradesh.

Calculating Time

We can calculate the time of two different places with the help of their longitudes. Lucknow is located at 82°E and London is located at 0 degree GMT. If it is 12 pm in London, we can calculate the local time in Lucknow.

As the Earth rotates from the west to the east, those places which lie to the east of Greenwich are ahead than those places which lie to the west of Greenwich. The Earth rotates 1° in four minute. Thus if Lucknow is located to the east of Greenwich at 82°E , we will multiply 82 by 4 which will be 328 minutes or 5 hrs and 28 minutes. Therefore, the time in Lucknow is 5 hrs and 28 minutes ahead of London (since Lucknow is located to the east of Greenwich). So if the time in London is 12:00 pm, we will add 5 hrs and 28 minutes to it which will be 5:28 pm.

Therefore, it will be 5:28 pm in Lucknow when it is 12:00 pm in London.

MIND MAP : LEARNING MADE SIMPLE CHAPTER-14

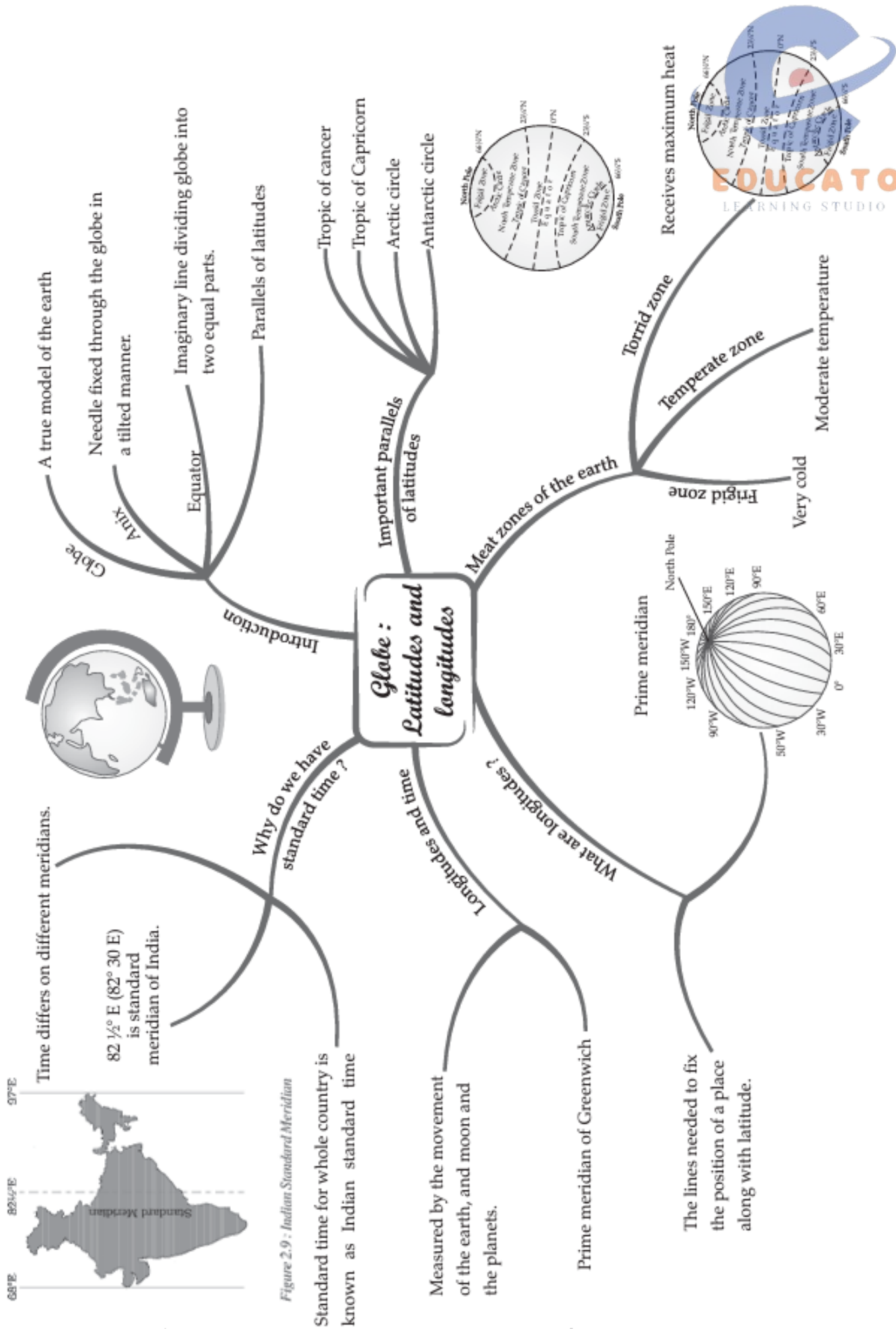


Figure 2.9 : Indian Standard Meridian

GEOGRAPHY

Chapter 3: Motions of the Earth



Motions of the Earth

Rotation and Revolution of the Earth



Rotation and revolution are two types of motions of the Earth.

Rotation of the Earth

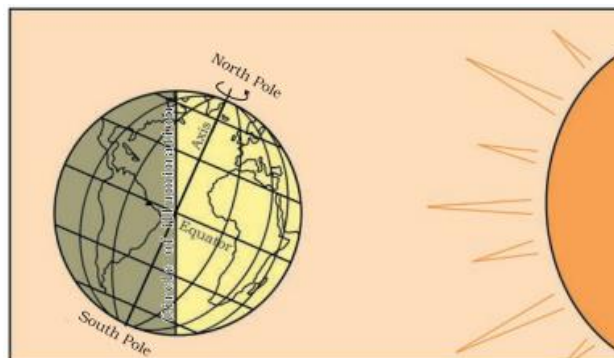
The spinning of the Earth on its axis is called **rotation**. The Earth takes about 24 hours to complete one rotation. This is called the **Earth day**.

The Earth receives light from the Sun. As the Earth is spherical in shape, only half of the Earth gets sunlight at a time. The half of the Earth which faces the Sun experiences day while the other half which is away from the Sun experiences night.

The circle which divides day and night on the globe is called the circle of illumination.

If the Earth does not rotate, then:

- The part of the Earth facing the Sun would always experience day. This will lead to a constant increase in the temperature.
- The other half of the Earth would always remain in darkness. This will result in a continuous decrease in the temperature.
- In both the conditions, survival of any life form will not be possible.



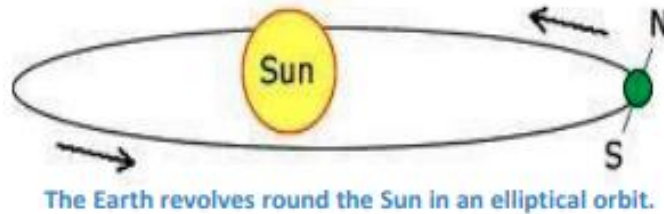
The imaginary line of the circle which divides day and night on the globe is called the circle of illumination.

Revolution of the Earth

When the Earth moves around the Sun in its orbit, its motion is called **revolution**. The Earth takes $365\frac{1}{4}$ days to complete one revolution around the Sun. We consider only 365 days in a year and add up six hours ($\frac{1}{4}$ th day) over a period of four years. This one extra day is added to the month of February in the fourth year. Therefore, in every four years, the month of February has 29 days. The year with 366 days is known as a leap year.

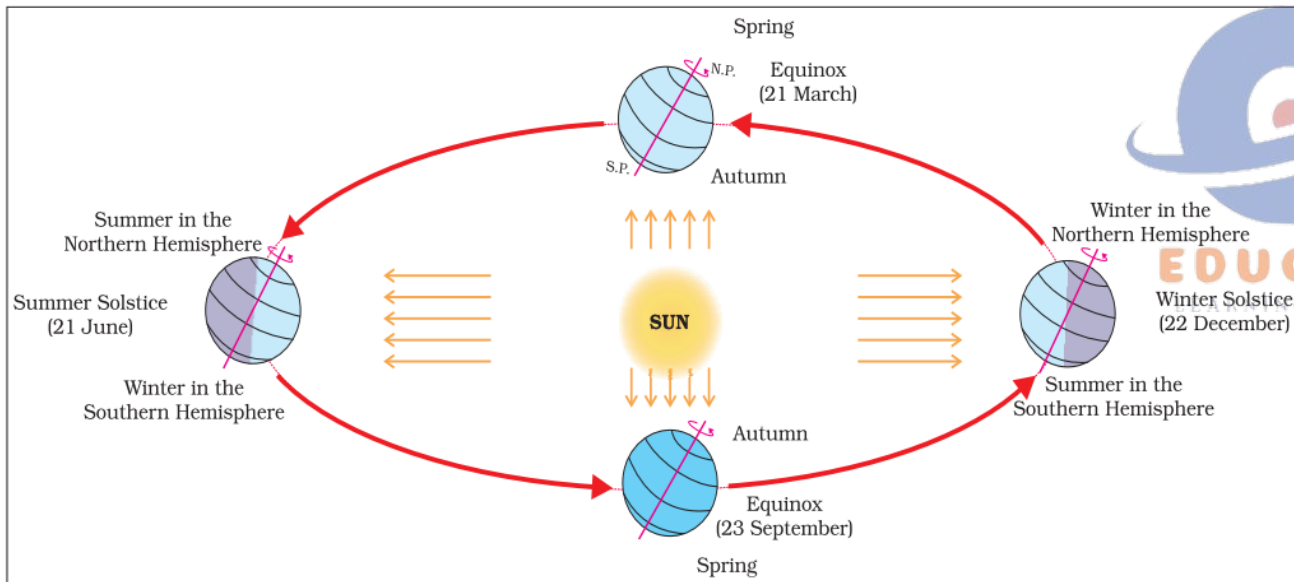
The Earth revolves around the Sun in an elliptical orbit.

Revolution of the Earth causes the changes in the seasons.



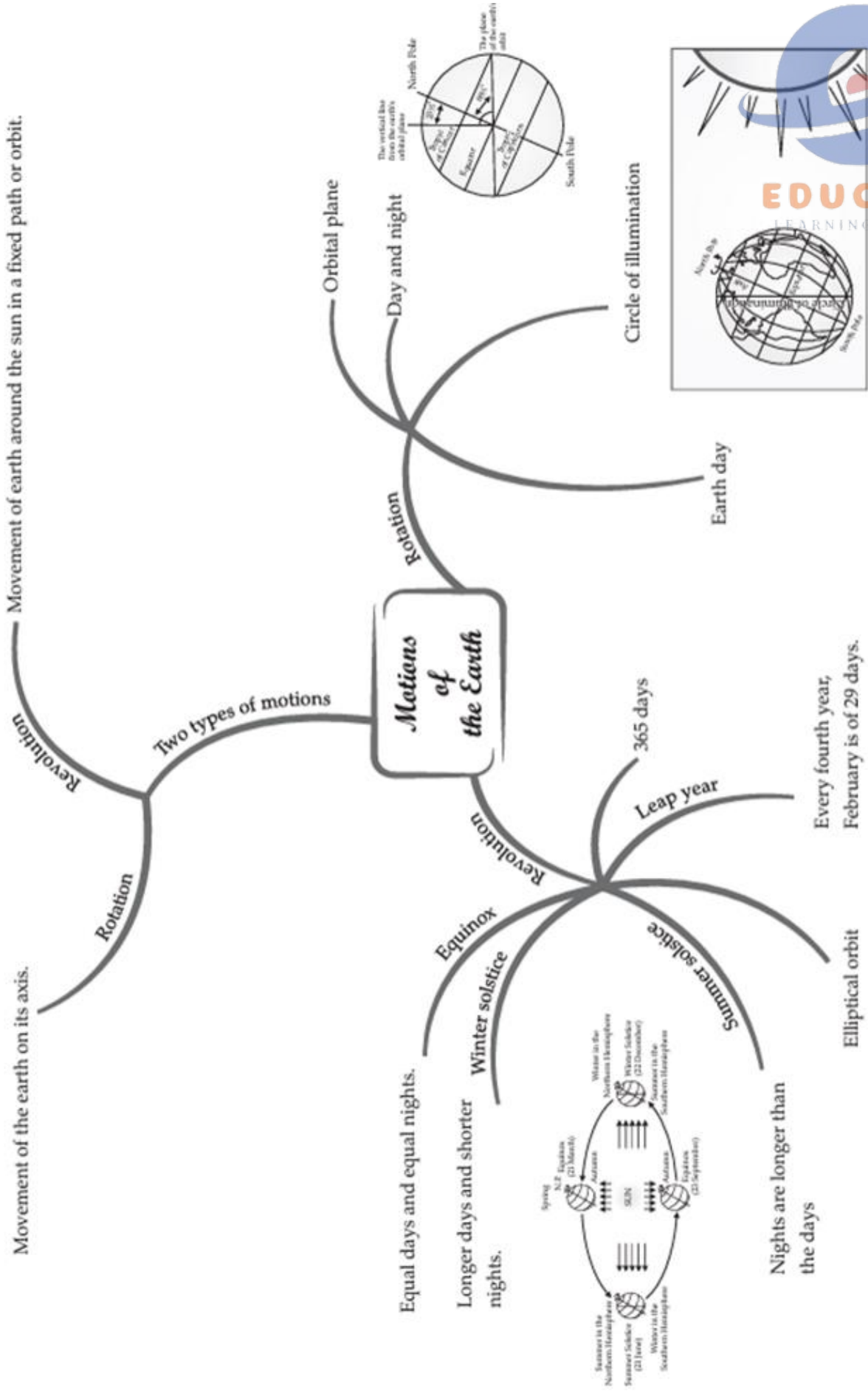
Summer and Winter Solstices

- For six months, (21 March to September 23) the Northern Hemisphere is tilted towards the Sun. The Sun's rays fall directly over the Tropic of Cancer resulting in summer season in the Northern Hemisphere.
- The summer season is characterised by longer days and shorter nights.
- At this time, the Southern Hemisphere is away from the Sun and receives the slanting rays of the Sun, thus experiencing the winter season.
- The winter season is characterised by shorter days and longer nights.
- A solstice is a day, when the Sun shines vertically over a Tropic (Cancer or Capricorn) in the afternoon, and the day is longest in that hemisphere.
- The Southern Hemisphere faces the Sun from 21 June to 22 December. During this time it experiences summers. This is the reason why Australia which lies in the Southern Hemisphere celebrates Christmas in the summer.
- On 22 December, the rays of the Sun fall directly over the Tropic of Capricorn. This is the longest day in the Southern Hemisphere (as it is the summer season) while in the Northern Hemisphere, it is the shortest day (as it is winter season). This is known as the **winter solstice**.
- On 21 June, sunlight falls vertically over the Tropic of Cancer. This is the longest day in the Northern Hemisphere and hence it is known as the **summer solstice**.
- On 21 March and 21 September, the Sun's rays fall directly over the equator. On both these days, the lengths of day and night are equal on all places on the Earth's surface. This is called **equinox**. This occurs as neither of the two poles is tilted towards the Sun.
- On 21 March, it is autumn in the Southern Hemisphere and spring in the Northern Hemisphere. On 23 September, it is autumn in the Northern Hemisphere and spring in the Southern Hemisphere.



Diagrammatic representation of summer solstice, winter solstice and equinox

MIND MAP : LEARNING MADE SIMPLE CHAPTER-15



Important Questions



➤ Multiple Choice Questions:

Question 1. In Australia Christmas is celebrated in the season:

- (a) Winter
- (b) Summer
- (c) Spring
- (d) Autumn

Question 2. In the revolution, motion of the Earth around the Sun in its orbit completed in:

- (a) 365 days
- (b) 366 days
- (c) $365 \frac{1}{4}$ days
- (d) 367 days

Question 3. The axis of Earth is inclined:

- (a) $23 \frac{1}{2}^\circ$
- (b) $66 \frac{1}{2}^\circ$
- (c) $22 \frac{1}{2}^\circ$
- (d) 10°

Question 4. In the leap year excess one day is added in the month of:

- (a) January
- (b) February
- (c) March
- (d) April

Question 5. Direct rays of the Sun fall on the equator on:

- (a) 21 March
- (b) 21 June
- (c) 22 December
- (d) 21 September

Question 6. An equinox happens each year

- (a) Thrice
- (b) Four times

(c) Twice

(d) Once

Question 7. The sun's rays fall vertically on the _____ on 21st. June

(a) Arctic Circle

(b) Tropic of Cancer

(c) Tropic of Capricorn

(d) Antarctic Circle

Question 8. In perihelion, Helios means

(a) Hydrogen

(b) Light

(c) Hemisphere

(d) Sun

Question 9. How much time does the earth take time to complete its rotation?

(a) 22

(b) 23

(c) 24

(d) 20

Question 10. Earth receive light from the

(a) Moon

(b) Mars

(c) Sun

(d) Venus

Question 11. In leap year, the month of February has

(a) 31 days

(b) 29 days

(c) 30 days

(d) 28 days

Question 12. Earth's movement around sun is called

(a) Rotation

(b) Revolution

(c) Solstice





(d) Equinox

Question 13. The earth takes _____ to complete one revolution

- (a) 365 days and 9 hours
- (b) 365 days and 8 hours
- (c) 365 days and 7 hours
- (d) 365 days and 6 hours

Question 14. How many Solstices are there in every year

- (a) 2
- (b) 3
- (c) 5
- (d) 4

Question 15. The sun rays are vertical over the _____ during _____

- (a) Tropic of Capricorn, equinox
- (b) Tropic of cancer, winter solstice
- (c) Tropic of Capricorn, summer solstice
- (d) Tropic of cancer, summer solstice

➤ Fill in the blanks:

1. The earth receives light from _____.
2. The earth takes about _____ to complete one rotation around its axis.
3. The period of rotation is known as the _____.
4. On 23rd September, it is _____ season in the Northern Hemisphere and _____ season in the Southern Hemisphere.
5. The portion facing the sun experiences _____ while the other half away from the sun experiences _____.
6. The axis of the earth makes an angle of _____ degree with its orbital plane.
7. Australia lies in _____ Hemisphere.
8. The longest day and the shortest night at these places occur on _____.

➤ Write true (T) or false (F):

1. Axis of the earth is an imaginary line about which the earth rotates.
2. Earth takes exactly 365 days to revolve around the sun.
3. Day and Night on the Earth occurs due to rotation of the Earth.

4. On 21st march, the Tropic of Capricorn receives direct rays of the sun as the South Pole tilts towards it.
5. Every fourth year, February is of 29 days instead of 28 days.
6. When there is spring in the Northern Hemisphere and summer in the Southern Hemisphere.



➤ Very Short Questions:

1. When Christmas is celebrated in Australia?
2. Which motion of the earth causes change in seasons?
3. What is the shape of the Earth?
4. How long does it take the earth to complete one rotation around its axis?
5. When do the sun rays fall directly on the equator?
6. Why areas near the poles receive less heat?
7. What causes change in seasons?
8. Why do seasons occur?
9. Why days and nights are not of equal length?
10. Define rotation and revolution of the Earth.

➤ Short Questions:

1. How is the rotation of the Earth responsible for causing day and night?
2. Why the southern hemisphere celebrates Christmas in summers?
3. What are the effects of the earth's revolution?
4. What do you understand by the term autumn equinox?
5. What is winter Solstice?

➤ Long Questions:

1. Why do the poles experience about six months day and six month night?
2. Why both hemispheres experience different winter and summer solstice?
3. What is a leap year?
4. Distinguish between summer solstice and winter solstice?
5. Explain the following terms.

ANSWER KEY –**➤ Multiple Choice Answer:**

1. (b) Summer
2. (c) 365 $\frac{1}{4}$ days
3. (b) 66 $\frac{1}{2}$ °
4. (b) February
5. (b) 21 June
6. (c) Twice
7. (b) Tropic of Cancer
8. (d) Sun
9. (c) 24
10. (c) Sun
11. (b) 29 days
12. (b) Revolution
13. (d) 365 days and 6 hours
14. (a) 2
15. (d) Tropic of cancer, summer solstice

➤ Fill in the blanks:

1. the sun
2. 24 hours
3. earth day
4. autumn, spring
5. day, night
6. 66 $\frac{1}{2}$
7. Southern
8. 21st June

➤ Write true (T) or false (F):

1. True
2. False
3. True

4. False
5. True
6. False



➤ Very Short Answer:

1. Christmas is celebrated in Australia in the summer season.
2. Revolution of the earth causes change in seasons.
3. Earth is spherical in shape.
4. The earth takes about 24 hours to complete one rotation around its axis.
5. On 21st March and September 23rd, direct rays of the sun fall on the equator.
6. The areas near the poles receive less heat as the rays of the sun are slanting.
7. Seasons change due to the change in the position of the earth around the sun.
8. The seasons are caused by the tilt of the Earth's rotational axis away or toward the sun as it travels around the sun in its orbit.
9. Days and nights are not equal length because of the inclined axis of the earth. As earth is tilted at an angle of 23.4° , days are longer in summers than in winters.
10. **Rotation:** Movement of the Earth on its axis in nearly 24 hours is termed as rotation. It is also called the daily movement of the earth.

➤ Short Answer:

1. The Earth rotates on its axis from West to East and completes it in 24 hours. When the Earth rotates, the half portion facing the sun causes day and the other half remains in darkness causing night. Thus, day and night is a continuous phenomenon because of the rotation.
2. On 22nd December, the Tropic of Capricorn receives direct sun rays due to the tilt of South Pole towards it. As the sun rays are vertical on it, hence it has summers. Therefore, Christmas which falls on 25th December is celebrated in summers in the Southern hemisphere.
3. **Results of the Earth revolution are:**
 - The phenomenon of seasons is caused.
 - It causes variation in the length of day and night.
 - It also causes variation in the distribution of heat over the surface of the earth.
4. On September 22nd or 23rd in the northern hemisphere, when night and day are nearly of the same length and Sun crosses the equator moving southward. And in the southern hemisphere on 20th or 21st March, Sun crosses the equator moving northward it is

known as autumn equinox.

- The position of the earth when it is winter season in Northern Hemisphere and summer season in Southern Hemisphere is called Winter Solstice.



➤ Long Answer:

- The axis of the earth remains inclined permanently in the same position. Because of this reason the sun continuously either shines or cannot be visible for a long time near the poles. The earth rotates causing day and night at other places but remain either dark or lighted for much longer time due to the tilt. Due to this reason, the areas near the poles experience six months day and six months night.
- During May, June and July, the northern hemisphere is exposed to more direct sunlight because the hemisphere faces the sun. The same is true of the southern hemisphere in November, December and January. This is due to the tilt of the Earth. So June, July and August are the hottest months in the northern hemisphere and December, January and February are the hottest months in the southern hemisphere.
- The earth takes $365\frac{1}{4}$ days (one year) to revolve around the sun. We consider a year as consisting of 365 days only and ignore six hours for convenience. These six hours saved every year are added to make one day i.e. 24 hours over a span of four years. This surplus day is added to the month of February. Thus, every fourth year, February is of 29 days instead of 28 days. Such a year with 366 days is called a leap year.
-

Summer solstice	Winter solstice
On 21st June, the Northern Hemisphere is tilted towards the sun.	On 22nd December, the Tropic of Capricorn receives direct rays of the sun as the South Pole tilts towards it.
Sun shines vertically on the Tropic of cancer.	Sun shines vertically on the Tropic of Capricorn
North pole is inclined towards the sun and the south pole is away from it.	South pole is inclined towards the sun and the north pole is away from it.

- Rotation:** Rotation is the movement of the earth on its axis.

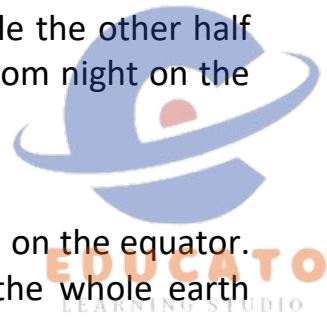
Revolution: The movement of the earth around the sun in a fixed path or orbit is called revolution.

Orbital Plane: The plane formed by the orbit is known as orbital plane.

Circle of illumination: The portion facing the sun experiences day while the other half away from the sun experiences night. The circle that divides the day from night on the globe is called the circle of illumination.

Leap year: A year with 366 days is called a leap year.

Equinox: On 21st March and September 23rd, direct rays of the sun fall on the equator. At this position, neither of the poles is tilted towards the sun; so, the whole earth experiences equal days and equal nights. This is called an equinox.



GEOGRAPHY

Chapter 4: Maps



Maps



Globes and Maps

We widely use maps to study the different places on the Earth. Though, a globe gives us a three dimensional representation of the Earth, it has a few disadvantages.

Following are the differences between a globe and a map:

Map	Globe
It is a two dimensional representation of the Earth.	A globe gives us a three dimensional representation of the Earth.
A map is easy to carry and use.	Often globes are difficult to carry as they are bulky.
In a map, we can study about villages, districts and cities.	A globe is useful only if we have to study continents and oceans.
A map presents a distorted view of the location, shapes and sizes as it is flat.	As a globe is round, it presents a less distorted images of continents, distance between them etc.

A map is a drawing of the Earth's surface or its part on a flat surface according to a scale. The collection of various maps in a book is called an **Atlas**. The maps in an atlas are of different sizes and scales.

Different Types of Maps

There are broadly three different types of maps:

Physical Maps: These maps display the physical features of the Earth like plains, plateaus, mountains, rivers etc. These maps are also called relief maps.

Political Maps: These maps show the villages, towns, cities and countries of the world with their boundaries.

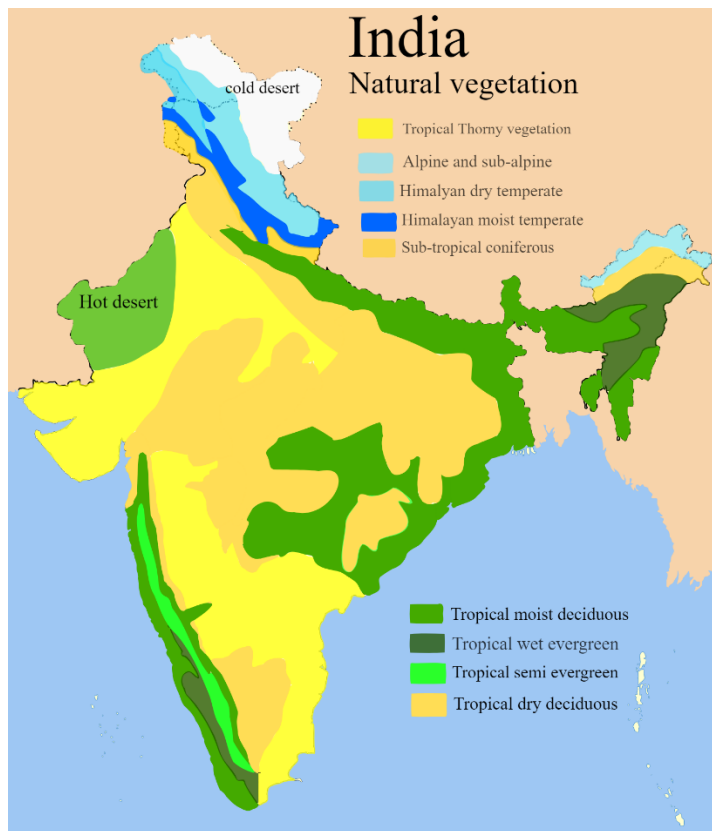
Thematic Maps: These maps only provide us with specific information such as the demographic map of Asia, distribution of minerals in a region, distribution of rainfall etc.



Physical Map of India



A political map showing the boundaries of cities, states, countries and continents



A map showing the natural vegetation of India is an example of a thematic map.

Components of Maps

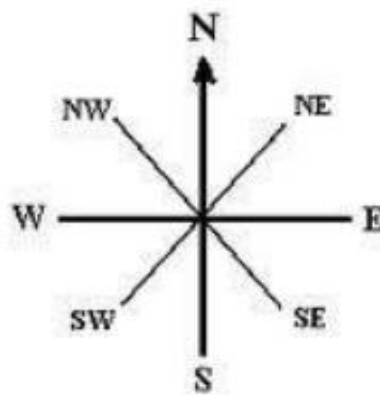
Distance, direction and symbols are the three components of a map.

Distance

- Since the various parts of the Earth are represented on a sheet of paper in a map, we draw these (maps) on a reduced scale.
- The actual large distance is represented by small distance in a map.
- A **scale** is the ratio between the actual distance on the ground and the distance shown on a map. For example, the distance between your home and your friend's home is 20 km. If we have to show this distance on a map, then we will take 1 cm = 10 km. It means that 1 cm on a map will represent a distance of 10 km.
- If you know the scale, you will be able to calculate the distance between any two places on a map.
- A smaller scale is used for displaying larger areas like continents or countries on a map. For example 2 cm may be used to show 200 km of the ground. Such maps are called **small scale maps**.
- When a small area like a village or a district is shown on a map, then a larger scale is used. For example, 2 cm on the map will now show 200 metres only. Such maps are called **large scale maps**. Such maps give us more information than the small scale maps.

Direction

- Maps usually have an arrow marked with the letter 'N' at the upper right hand corner. This arrow depicts the North direction. The other directions which are shown are East, South and West. These four directions are called the cardinal points.
- North-East (NE), South-East (SE), North-West (NW) and South-West (SW) are known as the four intermediate directions.
- With the help of these intermediate directions, we can easily locate places.
- We can also find the direction of a place with the help of a compass. The magnetic needle of a compass always point towards the North-South direction.









The intermediate directions we can easily locate the places.

Symbols







- Symbols are an important component of a map.
- In any map we cannot draw the actual shape of different features such as roads, railways, bridges etc. This is the reason why these features are shown using various symbols.
- Symbols helps us to find a place or collect information about a place even if do not know the language of a region.
- Symbols are the universal language of a map which can be understood by all.
- There is an international agreement regarding the symbols which are to be used for depicting various features in a map. These are called conventional symbols.
- Certain relief features such as mountains, water bodies, plains and plateaus are represented by brown, blue, green and yellow colours respectively.

Example of symbols







Point features

Tower	
Lighthouse	
Bridge	
Building	
Campsite	
Survey marker	

Linear features

Highway	
Railway	
Powerline	
Trail	
Boundary	
River	

Area features

Moraine	
Coral reef	
Lake	
Swamp	
Tidal flat	
Mangroves	



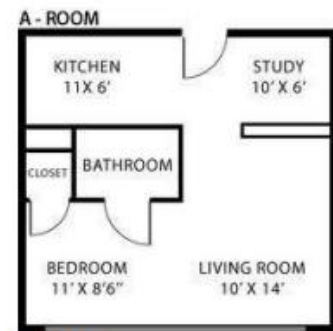
A Sketch and Plan

A rough drawing, drawn without a scale, is known as a **sketch** map. A sketch is drawn mainly on the basis of observation and memory.

A **plan** is a drawing of a small area on a larger scale. It helps us to find various things like the length and breadth of a room, which is not shown in a map.

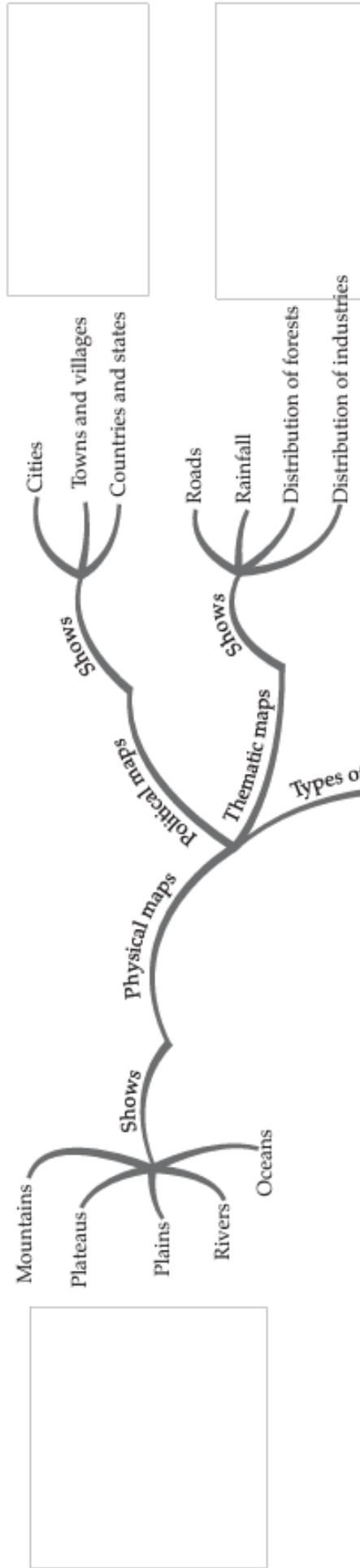


A sketch



A plan

MIND MAP : LEARNING MADE SIMPLE CHAPTER-16



Railway Line	Board gauge, Metro gauge, Railway station	Metalled, Unmetalled	International, State, District	River, Well, Tank, Canal, Bridge	Temple, Church, Mosque, Chhatra	Post Office, Post & Telegraph Office, Police Station	Settlement, Concentrated	Thick, Grass
Roads	Metalled, Unmetalled	International, State, District	River, Well, Tank, Canal, Bridge	Temple, Church, Mosque, Chhatra	Post Office, Post & Telegraph Office, Police Station	Settlement, Concentrated	Thick, Grass	



Important Questions



➤ Multiple Choice Questions:

Question 1. Which one is not a component of Map?

- (a) Distance
- (b) Direction
- (c) Scale
- (d) Symbol

Question 2. When drawing a small area on a large scale is called:

- (a) Plan
- (b) Map
- (c) Symbol
- (d) Sketch

Question 3. A large scale map is used to show:

- (a) Small area
- (b) Large area
- (c) (i) & (ii) both
- (d) None

Question 4. A plan is a drawing of a small area on a:

- (a) Small scale
- (b) Large scale
- (c) (i) & (ii) both
- (d) None

Question 5. Green colour is used for showing:

- (a) Mountains
- (b) Plateaus
- (c) Plains
- (d) Waterbodies.

Question 6. Topographical map are those:

- (a) Smaller than the atlas map
- (b) Are used by engineers
- (c) Larger than cadastral map



(d) Are based on actual survey of small area

Question 7. Symbol on map that represent human and physical features on surface of Earth is classified as

- (a) Legend
- (b) Grid
- (c) Key
- (d) Both a and c

Question 8. Which of the following is not the limitation of the globe

- (a) Maximum distortion is seen in the region around the poles
- (b) Represents earth on the flat surface
- (c) Details are not given in the form of symbols
- (d) Can study the detail part of the earth

Question 9. Atlas map are drawn on a _____ scale.

- (a) Infinite
- (b) Small
- (c) Very large
- (d) Large

Question 10. Plan is useful to show

- (a) Details such as length and breadth of a room or place
- (b) To find the location of place of the map
- (c) Details of counties river, ocean
- (d) Can be put together to make an Atlas

Question 11. Which of the following is not among the cardinal direction

- (a) South
- (b) North-east
- (c) East
- (d) West

Question 12. Boundaries between different states are shown in _____ .

- (a) Political Map
- (b) Relief Map
- (c) Vegetation
- (d) Commercial Map



Question 13. Usually top of the map indicates _____ direction.

- (a) West
- (b) North
- (c) South
- (d) East

Question 14. Map showing the distribution of important crops, minerals, industries etc are called

- (a) Distribution map
- (b) Political map
- (c) Divided map
- (d) Physical map

Question 15. In map Light brown colour is used to show

- (a) Rainfall
- (b) Mountains
- (c) Rivers
- (d) Forest

➤ **Fill in the blanks:**

1. The blue colour is used for showing _____.
2. A _____ is used to find the main directions.
3. _____ colour is used for showing mountains.
4. A globe can be useful when we want to study the earth as a _____.

➤ **Write true (T) or false (F):**

1. A scale is necessary for a map.
2. Direction is not a component of maps.
3. A physical map shows natural features of the earth.

➤ **Very Short Questions:**

1. Which map provides detailed information?
2. Which map shows distribution of forests?
3. What is an Atlas?
4. What are the three components of a map?
5. When should we use a globe?
6. What are intermediate directions?



7. What are the four cardinal directions?
8. What do you mean by the term 'the scale of the map'?
9. What is Compass?
10. What are physical maps?

➤ Short Questions:

1. Define Political Maps.
2. Write the color used for the following: water bodies, mountain, plateau and for plains.
3. What is called the north line?
4. What do you mean by Thematic Maps?
5. What are called conventional symbols?
6. How are maps more helpful than a globe?

➤ Long Questions:

1. Mention some of the disadvantages of magnetic compass?
2. Mention different types of maps with examples.
3. What are the basic characteristics of a good map?
4. What do the following colours represents on the map?
Blue, Red, Yellow, Green, Brown and Black.
5. Explain the major components of maps.

ANSWER KEY –

➤ Multiple Choice Answer:

1. (d) Symbol
2. (a) Plan
3. (a) Small area
4. (b) Large scale
5. (c) Plains
6. (d) Are based on actual survey of small area
7. (a) Legend
8. (d) Can study the detail part of the earth
9. (b) Small
10. (a) Details such as length and breadth of a room or place
11. (b) North-east



12. (a) Political Map
13. (b) North
14. (a) Distribution map
15. (b) Mountains

➤ **Fill in the blanks:**

1. water bodies
2. compass
3. Brown
4. whole

➤ **Write true (T) or false (F):**

1. True
2. False
3. True

➤ **Very Short Answer:**

1. Thematic maps provide detailed information.
2. Thematic map shows distribution of forests.
3. When many maps are put together we get an Atlas.
4. There are three Components of Maps – distance, direction and symbol.
5. A globe can be useful when we want to study the earth as a whole.
6. The four intermediate directions are north-east (NE), southeast (SE), south-west (SW) and north-west (NW).
7. There are four major directions, North, South, East and West. They are called cardinal points.
8. Scale is the ratio between the actual distance on the ground and the distance shown on the map.
9. It is an instrument used to find out main directions. Its magnetic needle always points towards north-south direction.
10. Maps showing natural features of the earth such as mountains, plateaus, plains, rivers, oceans etc. are called physical or relief maps.

➤ **Short Answer:**

1. Maps showing cities, towns and villages, and different countries and states of the world with their boundaries are called political maps.

- Blue is used for showing water bodies, brown for mountain, yellow for plateau and green is used for plains.
- Most maps contain an arrow marked with the letter 'N' at the upper right hand corner. This arrow shows the north direction. It is called the north line.
- Some maps focus on specific information; such as road maps, rainfall maps, maps showing distribution of forests, industries etc. are known as thematic maps.
- Symbols give a lot of information in a limited space. There is an international agreement regarding the use of these symbols. These are called conventional symbols.
- A globe can be useful when we want to study the earth as a whole but when we want to study only a part of the earth, as about our country, states, districts, towns and villages, it is of little help. In such a situation we use maps.

➤ Long Answer:

- The compass is very stable in areas close to the equator, which is far from "Magnetic North". At some point close to the Magnetic Pole, the compass will not indicate any particular direction but will begin to drift in a non direction indicating manner. Also, the needle starts to point up or down when getting closer to the poles, due to the so-called magnetic inclination. Cheap compasses with bad bearings may get stuck due to this; therefore, indicate a wrong direction.
- There are three types of maps. These are:**
 - Physical maps show natural features of the earth such as mountains, plains, plateaus, rivers, etc.
 - Political maps show cities, towns villages, different countries and states of the world with their boundaries.
 - Thematic maps lay emphasis on specific information; such as road maps, rainfall maps, maps showing distribution of forests, population, etc.
- Maps are the basic tools of geography that enable us to depict spatial phenomenon on paper.

A good map will have:

- Legend:** A good map will have a legend or key which shows the user what different symbols mean. For instance, a square with a flag on top usually represents a school and roads are represented by a variety of widths and combinations of lines.
 - Direction:** Without a north arrow, it is difficult to determine the orientation of a map. With a north arrow, a user can determine direction.
 - Title:** A map's title provides important clues about the cartographer's intentions and goals.
- Several of the principle colors include:**



- **Blue:** lakes, rivers, streams, oceans, reservoirs, etc.
- **Red:** major highways, roads, urban areas, airports, special interest sites, military sites, place names, buildings, borders.
- **Yellow:** built-up or urban areas.
- **Green:** parks, golf courses, forest, orchards, highways.
- **Brown:** deserts, historical sites, national parks, military reservations or bases, contour (elevation) lines.
- **Black:** railroads, highways, bridges, place names, buildings, borders.

5. **There are three Components of Maps – distance, direction and symbol:**

- **Distance:** Maps are drawn to reduced scales. But this reduction is done very carefully so that the distance between the places is real. Therefore, a scale is chosen for this purpose. When large areas like continents or countries are to be shown on a paper, then we use a small scale. When a small area like village or town is to be shown on paper, then we use a large scale.
- **Direction:** Most maps contain an arrow marked with the letter 'N' at the upper right hand corner. This arrow shows the north direction. It is called the north line. When we know the north, we can find out other directions, for example east, west and south.
- **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 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. With the use of these symbols, maps can be drawn easily and are simple to read.

GEOGRAPHY

Chapter 5: Major Domains of the Earth

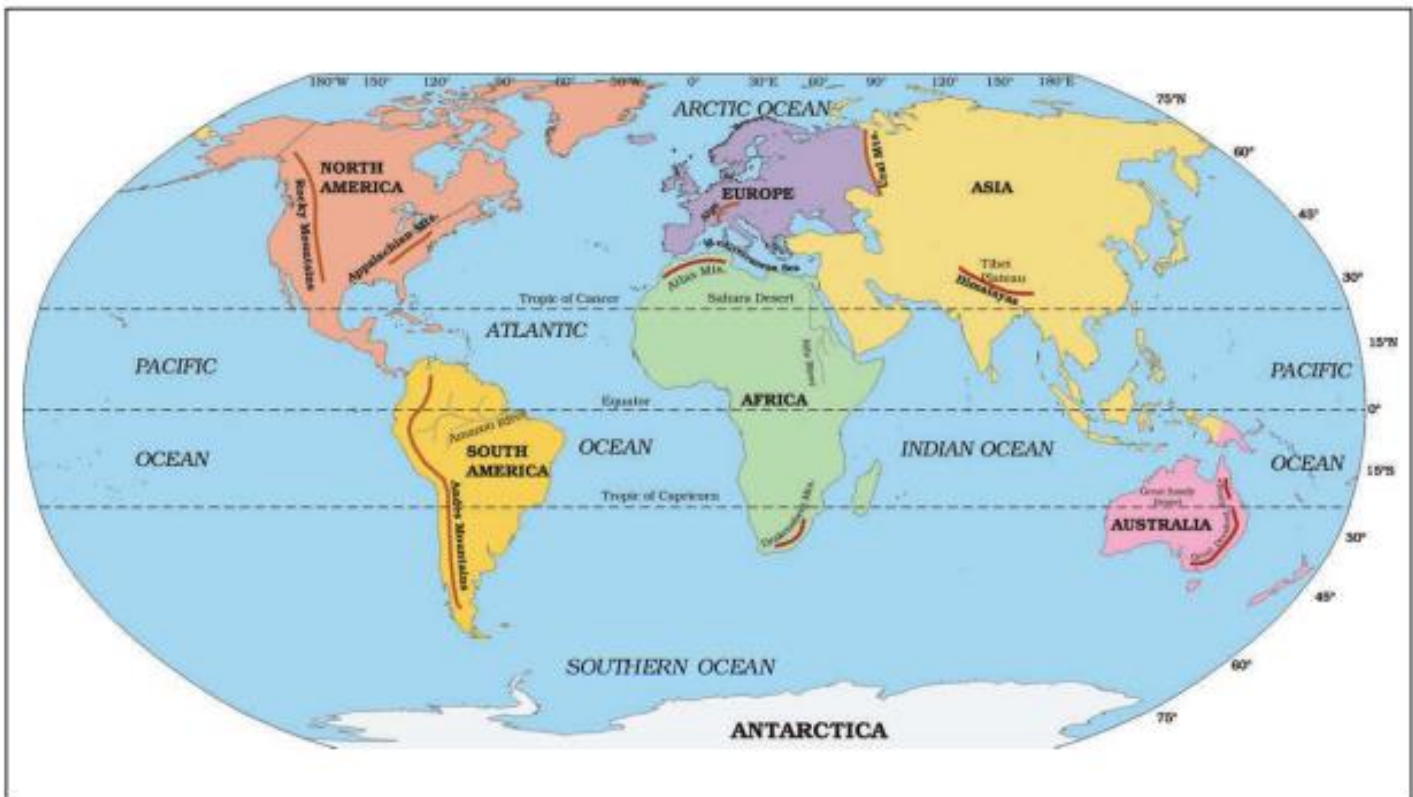


Major Domains of the Earth

There are three main components of the environment, the **lithosphere**, the **hydrosphere** and the **atmosphere**. All the three components meet on the surface of the Earth. The other important zone is the **biosphere** where we find air, land and water together. The biosphere contains all the three forms of life.

Lithosphere

The lithosphere is the solid portion of the Earth. It consists of the Earth's crust and thin layers of soil. The Earth's surface consists of large landmasses known as continents and ocean basins. In the lithosphere, the highest peak is Mt. Everest with a height of 8,848 m. The Mariana Trench in the Pacific Ocean is located at a greatest depth of 11,022 m.



The World : Continents and Oceans

There are seven major continents. These are separated by large water bodies. These continents are – Asia, Europe, Africa, North America, South America, Australia and Antarctica. Look at the map of the world above and notice that the greater part of the land mass lies in the Northern Hemisphere.

Asia is the largest continent. It covers about one-third of the total land area of the earth. The continent lies in the Eastern Hemisphere. The Tropic of Cancer passes through this continent. Asia is separated from Europe by the Ural mountains on the west. The combined landmass of Europe and Asia is called the Eurasia (Europe + Asia).

Europe is much smaller than Asia. The continent lies to the west of Asia. The Arctic Circle passes through it. It is bound by water bodies on three sides. Look at the map of the world and locate it.

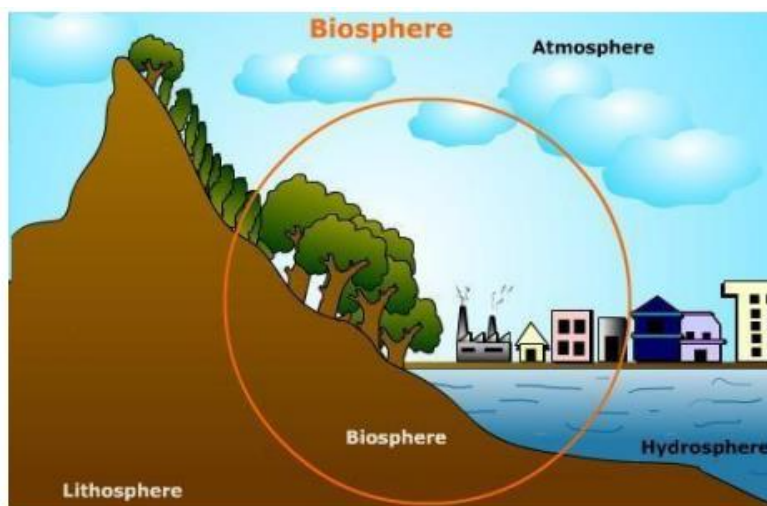
Africa is the second largest continent after Asia. The Equator or 0° latitude runs almost through the middle of the continent. A large part of Africa lies in the Northern Hemisphere. You will find that it is the only continent through which the Tropic of Cancer, the Equator and the Tropic of Capricorn pass.

The Sahara Desert, the world's largest hot desert, is located in Africa. The continent is bound on all sides by oceans and seas. Look at the world map above. You will notice that the world's longest river the Nile, flows through Africa. Notice where the Equator, the Tropic of Cancer and the Tropic of Capricorn pass in the map of Africa.

North America is the third largest continent of the world. It is linked to South America by a very narrow strip of land called the Isthmus of Panama. The continent lies completely in the Northern and Western Hemisphere. Three oceans surround this continent.

South America lies mostly in the Southern Hemisphere. Which two oceans surround it on the east and the west? The Andes, world's longest mountain range, runs through its length from north to south (see map above). South America has the world's largest river, the Amazon.

Australia is the smallest continent that lies entirely in the Southern Hemisphere. It is surrounded on all sides by the oceans and seas. It is called an island continent. Antarctica, completely in the Southern Hemisphere, is a huge continent. The South Pole lies almost at the centre of this continent. As it is located in the South Polar Region, it is permanently covered with thick ice sheets. There are no permanent human settlements. Many countries have research stations in Antarctica. India also has research stations there. These are named as **Maitri** and **Dakshin Gangotri**.



The figure showing all the realms of the Earth

Hydrosphere

The hydrosphere is a realm of the Earth which contains water in all its forms i.e., liquid (sea

water), solid (ice sheets) and gas (water vapour). The Earth is known as the **blue planet** as more than 71% of the Earth is covered with water. More than 97% of the Earth's water is found in the oceans. This water is salty and not fit for human consumption. Of the remaining three percent, two percent is frozen in the form of ice sheets and only one percent is available to us in the form of fresh water.

Oceans

Oceans form a major part of the hydrosphere and all oceans are interconnected to each other. The three main movements of ocean waters are in the form of waves, tides and ocean currents. The four major oceans are:



The three main movements of ocean waters are in the form of waves, tides and ocean currents

The Pacific Ocean: It is the largest ocean and covers one third of the Earth. It is circular in shape and surrounds Asia, Australia, North America and South America. The deepest part of the Earth, the Mariana Trench is located in this ocean.

The Atlantic Ocean: It is the second largest ocean. As the coastline of the ocean is highly irregular, many locations on this ocean are used as ports and natural harbours. It is the busiest

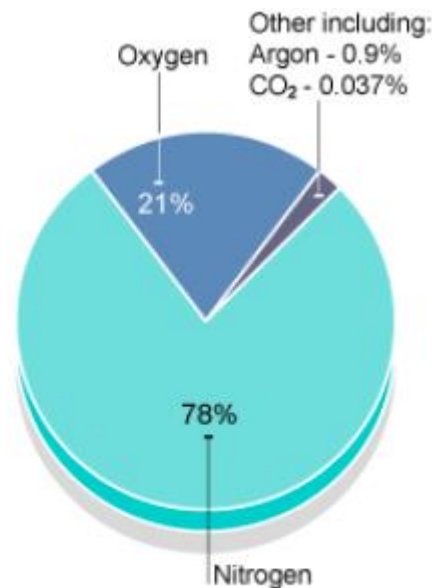
ocean in the world as much of the trade is carried through its routes. It is 'S' in shape.

The Indian Ocean: This is the only ocean which is named after a country. It is triangular in shape. It surrounds Asia, Africa and Australia.

The Arctic Ocean: It is located within the Arctic Circle and surrounds the North Pole. The Bering strait is a narrow stretch of shallow water which connects the Arctic Ocean with the Pacific Ocean.

Atmosphere

- The atmosphere is a thin layer of gas which surrounds the Earth. The atmosphere comprises of various gases. The atmosphere consists mainly of nitrogen (78%), oxygen (21%) and other gases like carbon dioxide, argon, helium etc.
- Oxygen helps in the survival of all the living beings while nitrogen helps in the growth of living organisms.
- Carbon dioxide keeps the planet warm by absorbing the heat reflected by the Earth. The gas also helps in the growth of plants.
- The atmosphere extends up to a height of about 1,600 km above the surface of the Earth. It is divided into five layers based on temperature and composition.
- The layers beginning from the surface of the Earth are the troposphere, the stratosphere, the mesosphere, the thermosphere and the exosphere.
- The density of the atmosphere changes with height. The temperature also decreases at higher altitudes.
- Air in the atmosphere moves from high pressure areas to low pressure areas. Moving air is known as **wind**.



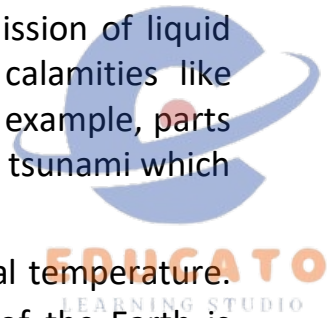
Composition of air in the atmosphere

Biosphere

The biosphere is a layer of the Earth where life exists. It is a narrow zone of contact between land, water and air. All the three realms of the Earth interact with each other in this zone. The organisms in this layer can be broadly divided into plants, animal and the human kingdom. All living organisms are dependent on each other for their survival. However,

human activities are degrading the environment. Deforestation, mining, emission of liquid wastes from the industries are deteriorating the environment. Natural calamities like Earthquakes and volcanic eruptions also change the surface of the Earth. For example, parts of the Andaman and Nicobar Islands were submerged under water due to the tsunami which hit the Indian coasts in 2004.

The release of carbon dioxide into the air has led to an increase in the global temperature. We need to use the resources in such a way that the ecological balance of the Earth is maintained.



MIND MAP : LEARNING MADE SIMPLE CHAPTER-17



Figure 1.6 : The Biosphere



Source: Author - Unknown/Google

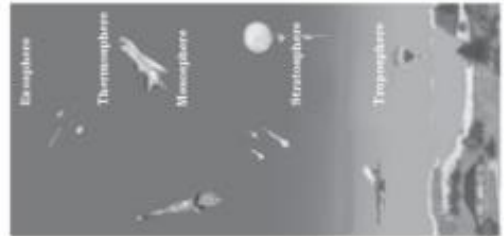
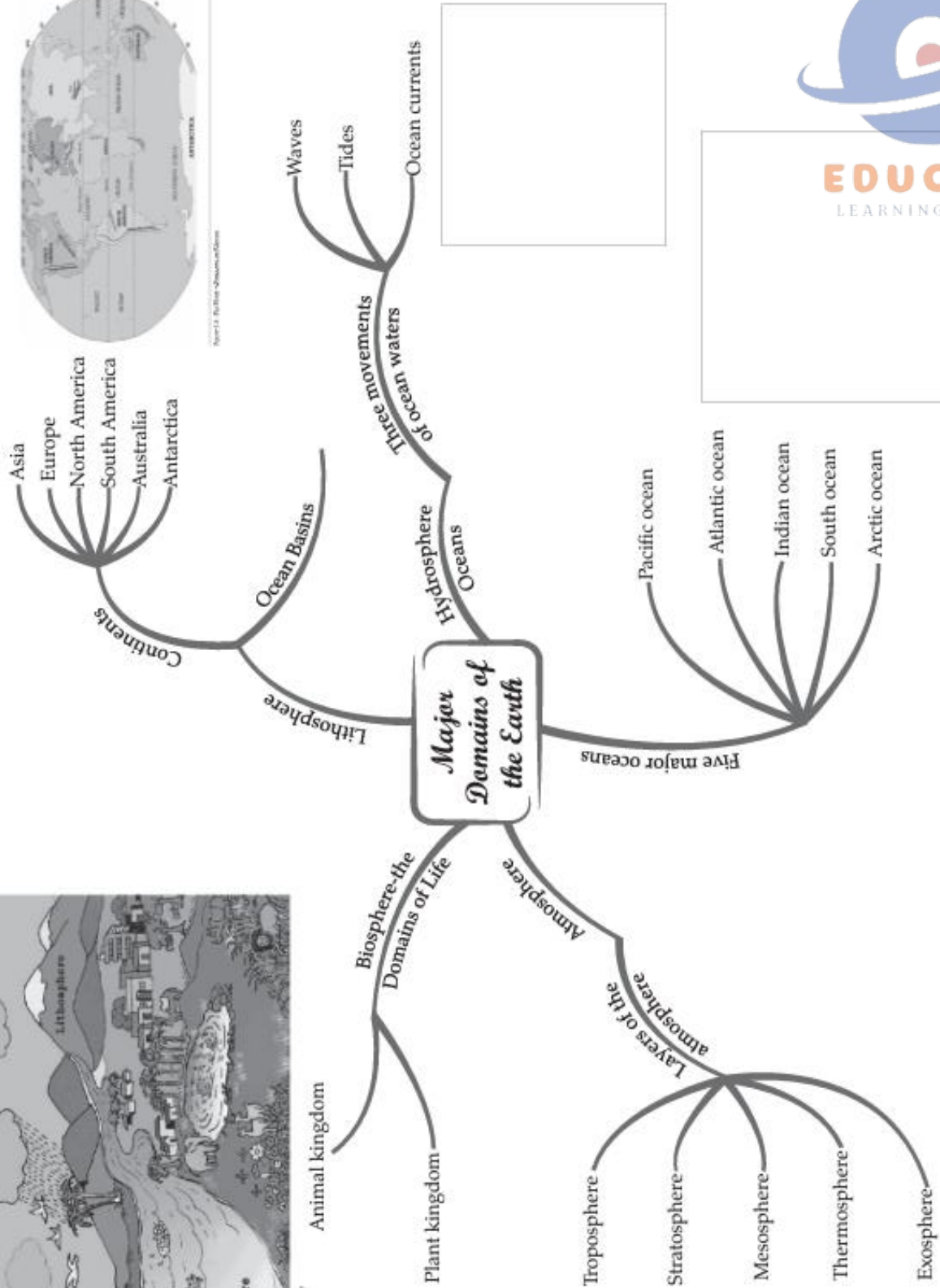


Figure 1.4 : Layers of the Atmosphere



EDUCATO
LEARNING STUDIO

Important Questions



➤ Multiple Choice Questions:

Question 1. The Tropic of Cancer, the Equator and the Tropic of Capricorn pass through:

- (a) Asia
- (b) Africa
- (c) South America
- (d) Antarctica

Question 2. The combined landmass of Europe and Asia is called:

- (a) Asia
- (b) Africa
- (c) South America
- (d) Eurasia

Question 3. Name the Blue Planet:

- (a) Earth
- (b) Oceans
- (c) Mountains
- (d) Rivers

Question 4. The first woman climber on the peak of Mt. Everest is:

- (a) Bachendri Pal
- (b) Junko Tabei
- (c) Edmund Hillary
- (d) None

Question 5. A narrow strip of land joining two landmasses is called:

- (a) Strait
- (b) Isthmus
- (c) Strip
- (d) Beach

Question 6. About 29% of Earth is covered with:

- (a) Land
- (b) Water

(c) Mountains

(d) Rivers

Question 7. More than 97% of the Earth's water is found in the:

(a) Land

(b) Ocean

(c) Mountains

(d) Rivers

Question 8. Which water is too salty?

(a) Land

(b) Ocean

(c) Mountains

(d) River

Question 9. Maitri and Dakshin Gangotri are the India's research stations situated in:

(a) Asia

(b) Africa

(c) South America

(d) Antarctica

Question 10. Which ocean is triangular in shape?

(a) Pacific

(b) Indian

(c) Atlantic

(d) Arctic

Question 11. Which one of the following continents lies on both sides of the equator

(a) South America

(b) Australia

(c) Africa

(d) Europe

Question 12. Which of the following is NOT a continent?

(a) India

(b) Africa

(c) Europe





(d) Australia

Question 13. The _____ ocean is named after a country

- (a) Arctic
- (b) Indian
- (c) Antarctic
- (d) Pacific

Question 14. Which of the following is NOT among the major domains of the earth?

- (a) Lithosphere
- (b) Hydrosphere
- (c) Stratosphere
- (d) Atmosphere

Question 15. The domain of the earth consisting of solid rocks is

- (a) Hydrosphere
- (b) Atmosphere
- (c) Lithosphere
- (d) Mesosphere

➤ **Fill in the blanks:**

1. Life exists in the _____.
2. _____ is the only continent through which the tropic of Cancer, the Equator and the Capricorn pass.
3. _____ is the world's longest mountain range.
4. _____ is called an island country.
5. The world's longest river the _____ flows through Africa.
6. The Arctic Ocean is connected with the Pacific Ocean by a narrow stretch of shallow water known as _____.
7. Europe lies to the _____ of Asia.

➤ **Write true (T) or false (F):**

1. The Atlantic Ocean is 'S' shaped.
2. Biosphere is one of the layers of the Atmosphere.
3. The South Pole lies almost at the centre of Antarctica.
4. Africa is the second largest country after Asia.



5. Pacific Ocean is 'L' in shape.
6. The coastline of Atlantic Ocean is highly indented.
7. The atmosphere is composed mainly of nitrogen and argon.

➤ Very Short Questions:

1. Why nitrogen considered as a significant gas?
2. Name the three main components of the environment.
3. Name the oceans that surround the continent North America.
4. Which two oceans surround South America on the east and the west?
5. Why Carbon dioxide (CO₂) is considered as an important constituent of air?
6. Why oxygen is so important?
7. Write the name of Indian research stations in Antarctica.
8. State the percentage of the earth which is covered with water.
9. What percentage of earth's water found in oceans?
10. Which is the world's longest river?

➤ Short Questions:

1. Which two continents lie entirely in the Southern and Northern Hemisphere?
2. Write the color used for the following: water bodies, mountain, plateau and for plains.
3. Write is the main reason of air pollution.
4. What is 'Atmosphere'? Why atmosphere is so important?
5. Why do mountaineers carry oxygen cylinders with them?
6. Write a short note on the continent – Antarctica.

➤ Long Questions:

1. Distinguish between stratosphere and troposphere.
2. Define global warming. State the factors responsible for it.
3. Which is the second largest continent after Asia? Mention four features of this continent.
4. What are the major effects of water pollution?
5. Write short note on Atlantic Ocean, Arctic Ocean and Indian Ocean.

ANSWER KEY –



➤ **Multiple Choice Answer:**

1. (b) Africa
2. (d) Eurasia
3. (a) Earth
4. (b) Junko Tabei
5. (b) Isthmus
6. (a) Land
7. (b) Ocean
8. (b) Ocean
9. (d) Antarctica
10. (b) Indian
11. (c) Africa
12. (a) India
13. (b) Indian
14. (c) Stratosphere
15. (c) Lithosphere

➤ **Fill in the blanks:**

1. biosphere zone
2. Africa
3. The Andes
4. Australia
5. Nile
6. Berring Strait
7. west

➤ **Write true (T) or false (F):**

1. True
2. False
3. True
4. True
5. False

6. True
7. False

➤ **Very Short Answer:**

1. Nitrogen is considered as a significant gas because it helps in the growth of living organisms.
2. The three main components of the environment are lithosphere, atmosphere and hydrosphere.
3. Oceans that surround the continent North America are Pacific Ocean, Atlantic Ocean and Arctic Ocean.
4. On the east –Atlantic Ocean and on the west – Pacific Ocean.
5. Carbon dioxide (CO₂) is important as it absorbs heat radiated by the earth, thereby keeping the planet warm. It is also essential for the growth of plants.
6. Oxygen is essential for our survival because oxygen is the breath of life.
7. Maitri and Dakshin Gangotri are the Indian research stations in Antarctica.
8. More than 71 percent of the earth is covered with water.
9. More than 97% of the Earth's water is found in the ocean.
10. The world's longest river is Nile which flows through Africa.

➤ **Short Answer:**

1. Two continents lying entirely in northern hemisphere are North America and Europe. Two continents lying entirely in southern hemisphere are South America and Australia.
2. There are seven major continents separated by large water bodies. These continents are – Asia, Europe, Africa, North America, South America, Australia and Antarctica.
3. Emission from industries, thermal power plants and vehicles, pollutes the air. Carbon dioxide (CO₂) is an important constituent of air but increase in the amount of CO₂ leads to global warming.
4. The earth is surrounded by a layer of gas called the atmosphere. This thin blanket of air is an integral and important aspect of the planet. It provides us with the air we breathe and protects us from the harmful effects of sun's rays.
5. The climbers experience problems in breathing as density of air decreases rapidly as we go up. That's why they carry oxygen cylinders with them to be able to breathe at high altitudes.
6. Antarctica, completely in the Southern Hemisphere, is a huge continent. The South Pole lies almost at the centre of this continent. As it is located in the South Polar Region, it is permanently covered with thick ice sheets. There are no permanent human



settlements. Many countries have research stations in Antarctica.

➤ Long Answer:

1. .

Troposphere	Stratosphere
The troposphere is the lowest portion of Earth's atmosphere.	The stratosphere is the second major layer of Earth's atmosphere, just above the troposphere and below the mesosphere
Troposphere near the Earth's surface is cooler layers higher up and warmer layers farther down.	Stratosphere is stratified in temperature, with warmer layers higher up and cooler layers farther down.
About 80 % of the total mass of the atmosphere is contained in troposphere.	This contains about 19.9 % of the total mass found in the atmosphere.
It is also the layer where the majority of our weather phenomenon occurs.	Very little weather phenomenon occurs in the stratosphere

2. **Global warming is the increase average temperature of the Earth's near-surface air and oceans:**

- Most prominent factor is from the combustion of fossil fuels in cars, factories and electricity production. They produce carbon dioxide, which is the most common gas responsible for the global warming.
- Other contributors include methane released from landfills and fertilizers.
- Gases used for refrigeration and industrial processes.
- The loss of forests that would otherwise store CO₂.

3. **Africa is the second largest continent after Asia. Four features of this continent are:**

- The equator passes through the middle of Africa, splitting it into Northern Hemisphere and Southern Hemisphere.
- The Sahara Desert, the world's largest hot desert, is located in Africa.
- The continent is bound on all sides by oceans and seas.
- The Nile, the world's longest river flows through this continent.

4. **The major effects of water pollution are:**



- The food chain is damaged. When toxins are in water, the toxins travel from the water to the animals and to humans when the animal's meat is eaten.
- Diseases can spread via polluted water. Infectious diseases such as typhoid and cholera can be extended from drinking contaminated water.
- Acid rain contains sulfate particles, which can harm fish or plant life in lakes and rivers.
- Pollutants in the water will alter the overall chemistry of the water, causing changes in acidity, temperature and conductivity. These factors all have an affect on the marine life.
- Marine food sources are contaminated or eliminated by water pollution.
- Altered water temperatures due to human actions can kill the marine life and affect the delicate ecological balance in bodies of water, especially lakes and rivers.

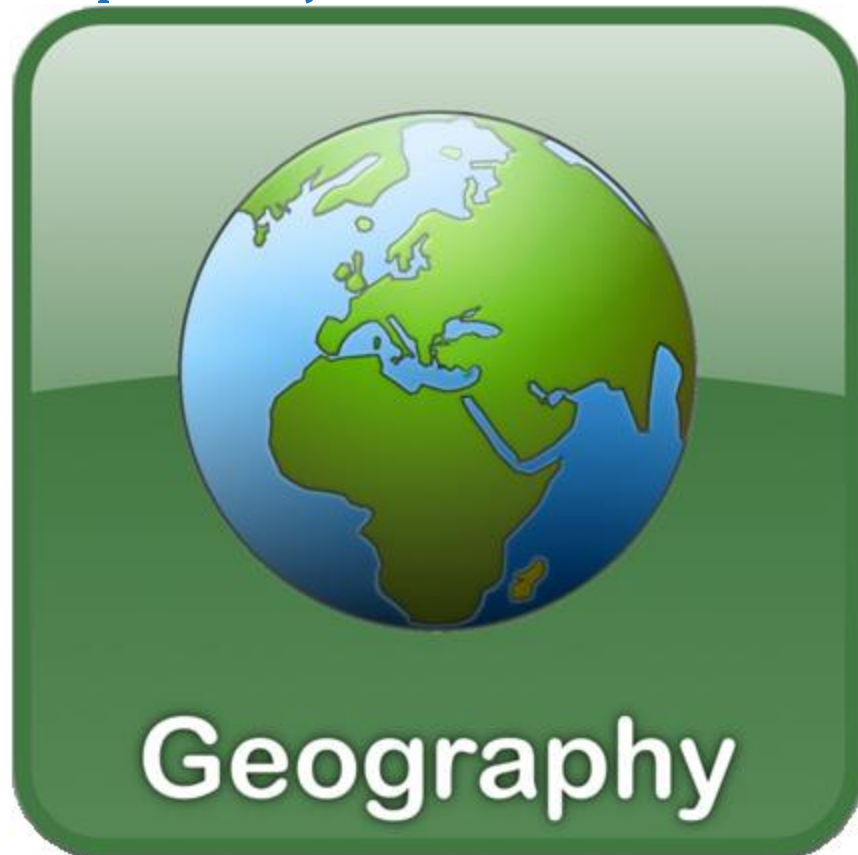


5.

- **Atlantic Ocean:** The Atlantic Ocean is the second largest Ocean in the world. It is 'S' shaped. It is flanked by the North and South Americas on the western side, and Europe and Africa on the eastern side. The coastline of Atlantic Ocean is highly indented which provides ideal location for natural harbours and ports.
- **Arctic Ocean:** The Arctic Ocean is located within the Arctic Circle and surrounds the North Pole. It is connected with the Pacific Ocean by a narrow stretch of shallow water known as Bering strait. It is bound by northern coasts of North America and Eurasia.
- **Indian Ocean:** The Indian Ocean is the only ocean named after a country, that is, India. The shape of ocean is almost triangular. In the north, it is bound by Asia, in the west by Africa and in the east by Australia.

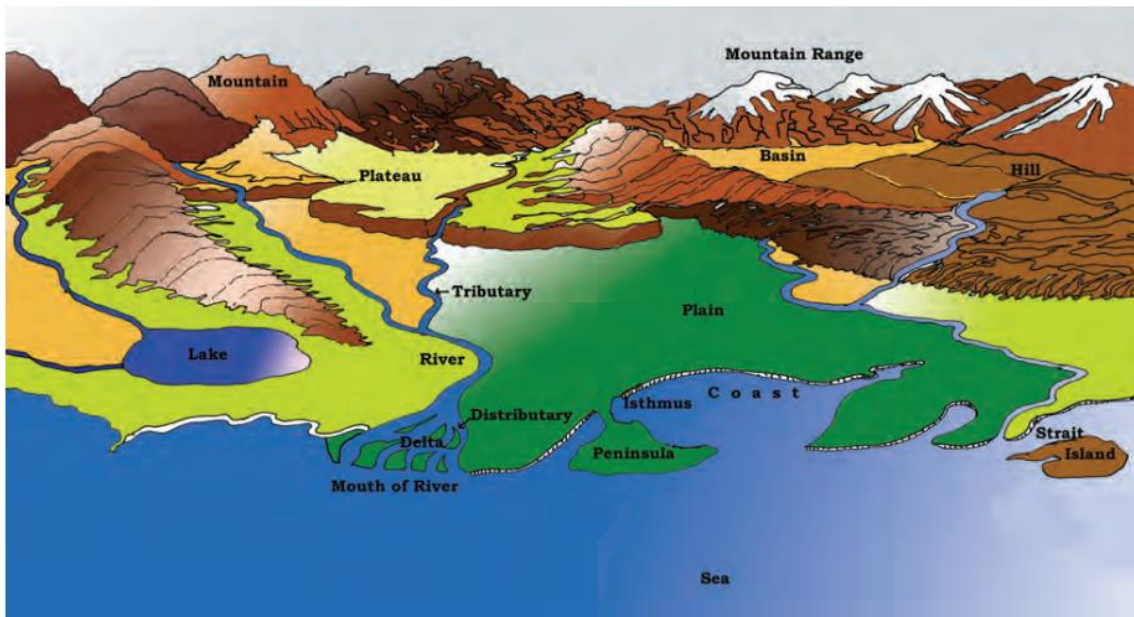
GEOGRAPHY

Chapter 6: Major Landforms of the Earth



Major Landforms of the Earth

The surface of the Earth is rugged and uneven. It has various landforms such as mountains, valleys, plateaus and plains. The uneven surface of the Earth is the result of the **internal process** and the **external process**. The internal process results in the elevation and depression of the surface of the Earth at various places, while the external process results in its wearing and upgrading. While the wearing of the surface of the Earth is called **erosion**, its elevation is due to the process of **deposition** which takes place due to the action of winds, running water and ice.



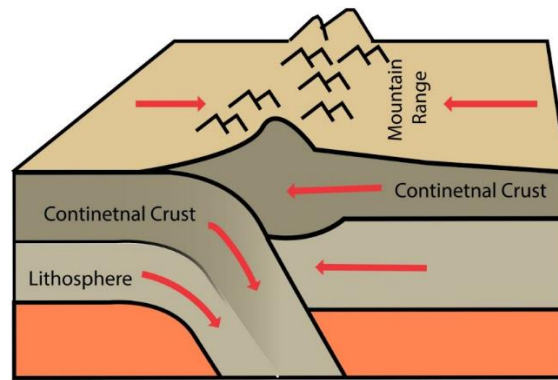
Major Landforms of the Earth

Mountains

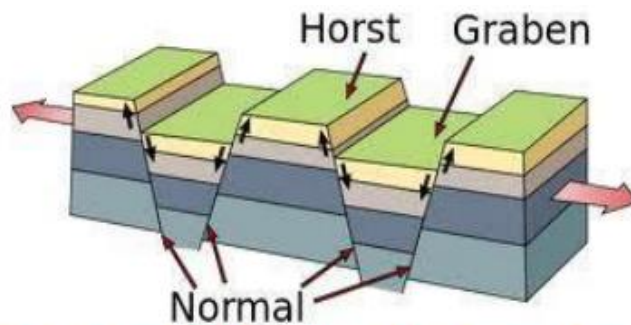
A mountain is a natural elevation of the surface of the Earth. Mountains have a small summit and a broad base. As we go higher up on the mountains, the climate becomes cooler. Frozen ice on the mountains is known as a **glacier**. Because of the harsh climate and steep slopes, people do not prefer to live on the mountains. Many mountains arranged in a line are known as ranges. Some famous mountain ranges are the Himalayas (Asia), the Alps (Europe) and the Andes (South America). There are three types of mountains:

Fold Mountains: These mountains are formed due to the folding of the Earth's crust. The Himalayas and the Alps are young fold mountains with high conical peaks. The Aravalli range in India, the Appalachians in North America and the Ural mountains in Russia are some of the very old fold mountains.

How Fold Mountains Are Made

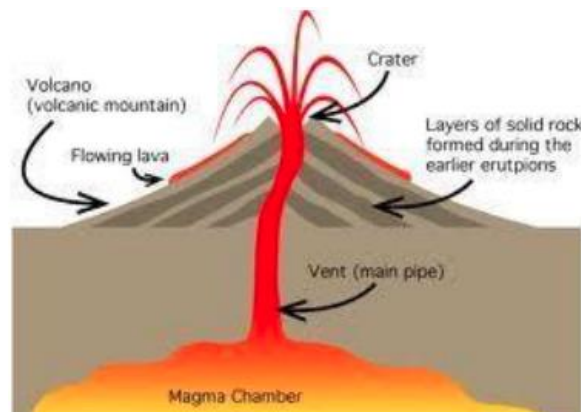


Block Mountains: When large areas are broken and displaced vertically, Block Mountains are created. The elevated blocks are known as **horsts** and the lowered blocks are called **graben**. The Rhine Valley and the Vosges mountains in Europe are examples of Block Mountains.



The diagram showing the formation of the Block Mountains

Volcanic Mountains: These mountains are formed due to volcanic eruptions when molten rock or magma under the surface of the Earth erupts. Magma which flows out onto the surface of the Earth is called lava. The accumulation of lava on the Earth's surface and its subsequent cooling, results in the formation of a volcanic mountain. Mt. Kilimanjaro in Africa and Mt. Fujiyama in Japan are two examples of such mountains.



The diagram representation of the formation of a volcanic mountain

Importance of Mountains

- Many rivers like the River Ganga originate from mountain glaciers. Many reservoirs of

water are found in the mountains. This water is used for the purpose of irrigation and the generation of hydroelectricity.

- The fertile land of river valleys and slopes of mountains are used for farming.
- Mountains are home to many varieties of flora and fauna.
- The forests in the mountains provide us with fuel, fodder, food, medicines and with many other products such as gum, honey and raisins.
- Mountains are frequented by many tourists as they are known for their scenic beauty. Many adventurous sports such as skiing, paragliding and river rafting are popular in the mountains. These features help the tourist industry in mountainous regions to prosper.



Plateau

An elevated flat piece of land is known as a plateau. It can be also termed as a flat topped **table land** which stands above the surrounding area. They may have more than one side with steep slopes. The height of a plateau varies. Some may be only a few metres high while others may be several thousand metres in height. Plateaus may be young or old.

The Deccan Plateau in India is one of the oldest plateaus. Some other plateaus are the East African Plateau in Africa, the Western Plateau in Australia and the Tibet Plateau in Asia. The Tibet Plateau is the highest plateau in the world. It has the height of 4000-6000 metres above the mean sea level.



The Deccan Plateau in India

Importance of Plateaus

- Plateaus are a storehouse of minerals. While the African Plateau has huge reserves of gold and silver, the Chhotanagpur Plateau in India is famous for coal, iron and manganese deposits.
- Plateaus also house several waterfalls. In India, two important waterfalls in the plateau regions are the Hundru Falls in the Chhotanagpur Plateau on the River Subarnarekha and the Jog Falls in Karnataka.
- The lava plateaus which are formed due to volcanic eruptions have black soil, and are

suitable for cultivation.

- Plateaus have many scenic spots and are great tourist attractions.

Plains

Plains are a large piece of flat land. Plains are usually not more than 200 metres above the mean sea level. Most plains have been formed as a result of the depositional action of rivers and their tributaries. As rivers flow down the mountains, they erode the mountains and carry forward the eroded materials such as stones, sand and silt. The deposition of these materials results in the formation of plains. Some famous plains are the Great North Indian Plains formed by the River Ganga and its tributaries and the plains in China formed by the river Yangtze. Plains are important because:

- They are formed of fertile soil and thus the land is agriculturally very productive.
- Most people settle in the plains as flat land is available for the building of transport facilities, houses, buildings, railways etc.
- Since, they are formed due to the action of rivers; water is available for agricultural purposes.

In India, the Indo-Gangetic plains are thickly populated.



The plain regions are fertile and thus are densely populated

People in Landforms

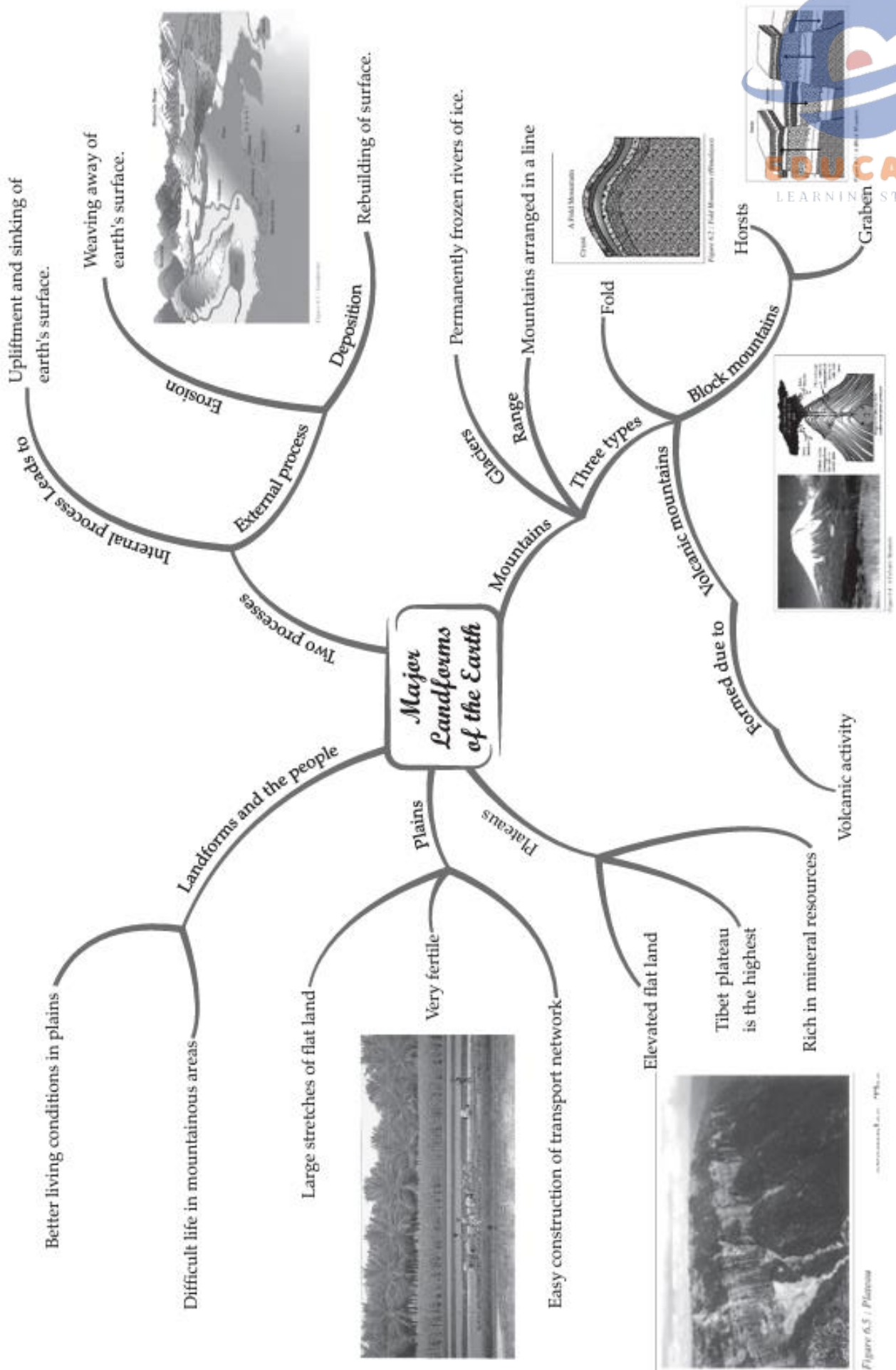
All kinds of landforms are not equally inhabited by people. While plain regions are densely populated, mountainous regions are sparsely populated. People prefer to live in the plain regions as the land is flat and hence it is easy to build houses and means of transportation. The soil is also fertile which results in surplus agricultural production. It was due to these reasons that many civilisations emerged in the fertile river valley plains, in the early days. On the contrary, in the mountains, it is difficult to grow crops on large scale. The hilly and rugged terrain does not allow easy construction of houses.

Today, the destruction of various landforms is taking place. Sometimes this may also be is

due to natural calamities such as earthquakes, volcanic eruptions etc. Natural calamities such as floods and landslides are caused due to deforestation and increased mining activities. Hence it is important that we make use of the available lands carefully.



MIND MAP : LEARNING MADE SIMPLE CHAPTER-18



Important Questions



➤ Multiple Choice Questions:

Question 1. Which is ideal for cultivation of crops?

- (a) River valleys
- (b) Flora and fauna
- (c) Glaciers

Question 2. The Tibet plateau is the highest plateau in the world with a height of:

- (a) 2000-4000 mtr.
- (b) 4000-6000 mtr.
- (c) 8000-9000 mtr.

Question 3. African plateau is famous for:

- (a) Gold and diamond
- (b) Iron mining
- (c) Coalmining

Question 4. Which are the most useful areas for human habitation?

- (a) Plateaus
- (b) Mountains
- (c) Plains

Question 5. The plains of Asia are formed by rivers:

- (a) Ganga and Brahmaputra
- (b) Yamuna
- (c) Kaveri

Question 6. Undersea mountain is:

- (a) Mauna Kea
- (b) Kilimanjaro
- (c) Fujiyama

Question 7. The continuous wearing down and rebuilding of the land surface is a/an:

- (a) Internal process
- (b) External process
- (c) Glaciers.

Question 8. The Himalayan Mountains and the Alps are example of:



- (a) Fold Mt.
- (b) Block Mt
- (c) Volcanic Mt.

Question 9. Mt. Kilimanjaro is situated in:

- (a) India
- (b) Japan
- (c) Africa

Question 10. Mt. Fujiyama is situated in:

- (a) India
- (b) Japan
- (c) Africa

Question 11. _____ forces originate from within the earth and _____ forces originate from outside the earth

- (a) Volcanic and Tectonic
- (b) Tectonic and Gradational
- (c) Gradational and Volcanic
- (d) Gradational and Tectonic

Question 12. Which of the following is not the type of mountains

- (a) Rockies Mountain
- (b) Block mountains
- (c) Fold mountains
- (d) Volcanic mountains

Question 13. What are two land forming processes

- (a) Upper processes and Lower processes
- (b) Block processes and Fold processes
- (c) Internal processes and External processes
- (d) Minor processes and Major processes

Question 14. Which of the following is the Peninsular plateau?

- (a) Deccan
- (b) Sahara
- (c) Chotanagpur
- (d) North



Question 15. How plateau is differ from the mountains

- (a) It is considerably higher than the surroundings
- (b) Plateau is elevated flat land
- (c) There are three types of mountains
- (d) Its elevation is more than 600 metres

➤ **Fill in the blanks:**

1. _____, _____ and _____ are mountain ranges of Asia, Europe and South America, respectively.
2. The Jog falls in _____.
3. The _____ in India is one of the oldest plateaus.
4. As we go higher, the climate becomes _____.
5. The _____ in North America have rounded features and low elevation.
6. _____ in the Pacific Ocean is an undersea mountain.

➤ **Write true (T) or false (F):**

1. Mt. Kilimanjaro is in Africa.
2. The Hundru Falls is in the Chhotanagpur plateau on the river Subarnarekha.
3. Many of the mining areas in the world are located in the plains areas.
4. Mountains vary in their heights and shape.
5. Volcanic mountains are formed due to erosion.
6. The river valleys and terraces are ideal for cultivation of crops.

➤ **Very Short Questions:**

1. Which is the oldest plateau in India?
2. What do you mean by horsts?
3. Define mountain range.
4. What do you mean by graben?
5. Name the old fold mountain of Russia.
6. Name the river on which Hundru falls is located.
7. Which is the highest peak in the world?
8. Where is Jog Falls located?
9. Name the place where Rope Bridge is situated.
10. Write one mountain range of Europe.



➤ Short Questions:

1. Which are the two processes that lead to formation and development of landforms?
2. How are Plains formed?
3. Why mountains are less populated?
4. How do mountains change climate of a place?
5. What are the various uses of plateaus?
6. Write a short note on lava plateau.

➤ Long Questions:

1. How plateaus are useful to us?
2. List some important features of plateaus?
3. How mountains are useful?
4. Write a short note on types of mountains.
5. Explain the major landforms of India?

ANSWER KEY –

➤ Multiple Choice Answer:

1. (a) River valleys
2. (b) 4000-6000 mtr.
3. (a) Gold and diamond
4. (c) Plains
5. (a) Ganga and Brahmaputra
6. (a) Mauna Kea
7. (b) External process
8. (a) Fold Mt.
9. (c) Africa
10. (b) Japan
11. (b) Tectonic and Gradational
12. (a) Rockies Mountain
13. (c) Internal processes and External processes
14. (a) Deccan
15. (b) Plateau is elevated flat land

➤ Fill in the blanks:



1. The Himalayas, the Alps and the Andes
2. Karnataka
3. Deccan plateau
4. Colder
5. Appalachians
6. Mauna Kea (Hawaii)

➤ **Write true (T) or false (F):**

1. True
2. True
3. False
4. True
5. False
6. True

➤ **Very Short Answer:**

1. Deccan Plateau.
2. The uplifted blocks are termed as horsts.
3. Mountains may be arranged in a line known as range.
4. The lowered blocks are called graben.
5. The Ural Mountain
6. River Subarnarekha
7. Mount Everest is the highest peak in the world.
8. Karnataka
9. Arunachal Pradesh
10. The Alps

➤ **Short Answer:**

1. **The two processes that lead to the formation of landforms are:**

- **Internal Process:** This process leads to the upliftment and sinking of the earth's surface at several places.

Example: block mountains.

- **External Process:** The external process is the continuous wearing down and rebuilding of the land surface.

Examples: Barchans.

2. Plains are formed by the rivers. The rivers erode the slopes of mountains and carry forward the eroded material. They then deposit their load consisting of stones and sand along their courses and in valleys. In this way the plains are formed.
3. **The mountains are thinly populated because:**
 - Harsh climate is found in mountainous area that is not suitable for people.
 - The mountain slopes are steep making it difficult to construct buildings.
 - Less land is available for farming.
4. Mountainous areas have lower temperatures. They serve as climatic divide between two adjoining regions. The Himalaya for example forms a barrier to the movement of cold winds from Central Asia towards the Indian subcontinent. They also force the South West Monsoons to ascend and cause rainfall on their southern slopes.
5.
 - Plateaus are rich in mineral deposits.
 - Most of the India's mining area are located in plateau.
 - Plateau areas have plenty of waterfalls, scenic spots and are great attraction for tourist
 - The lava plateaus are rich in black soil that is good and fertile for cultivation.
6. Lava plateaus are formed by highly fluid basaltic lava during numerous successive eruptions through numerous vents without violent explosions. These eruptions are quiet because of low viscosity of lava and contains small amount of trapped gases. Multiple successive and extensive lava flows cover the original landscape to eventually form a plateau, which may contain lava fields, cinder cones, shield volcanoes and other volcanic landform.

➤ Long Answer:

1. Plateaus are very useful because they are rich in mineral deposits. African plateau is famous for gold and diamond mining. In India huge reserves of iron, coal and manganese are found in the Chhotanagpur plateau. In the plateau areas, there may be several waterfalls as the river falls from a great height. The lava plateaus are rich in black soils that are fertile and good for cultivation. Many plateaus have scenic spots and are of great attraction to tourists.
2. **Features of plateaus:**
 - A plateau is an elevated flat land.
 - It is a flat-topped table land standing above the surrounding area.
 - A plateau may have one or more sides with steep slopes.
 - The height of plateaus often varies from few hundred metres to several thousand metres.





- Plateaus, like mountains may be young or old.
- The Deccan plateau in India is one of the oldest plateaus.
- The Tibet plateau the highest plateau in the world with a height of 4,000 to 6,000 metres above the mean sea level.
- Plateaus are rich in mineral deposits.

3. Importance of mountains:

- The mountains are a storehouse of water.
- Many rivers have their source in the glaciers in the mountains.
- Reservoirs are made and the water is harnessed for the use of people.
- Water from the mountains is also used for irrigation and generation of hydro-electricity.
- Mountains have a rich variety of flora and fauna.
- The forests provide fuel, fodder, shelter and other products like gum, raisins, etc.
- Mountains provide an idyllic site for tourists.
- Several sports like paragliding, hang gliding, river rafting and skiing are popular in the mountains.

4. There are three types of mountains- Fold Mountains, Block Mountains and the Volcanic Mountains:

- **Fold Mountains:** The Himalayan Mountains and the Alps are young fold mountains with rugged relief and high conical peaks. The Aravali range in India is one of the oldest fold mountain systems in the world. The range has considerably worn down due to the processes of erosion. The Appalachians in North America and the Ural mountains in Russia have rounded features and low elevation. They are very old fold mountains.
- **Block Mountains:** Block Mountains are created when large areas are broken and displaced vertically. The uplifted blocks are termed as horsts and the lowered blocks are called graben. The Rhine valley and the Vosges Mountain in Europe are examples of such mountain systems.
- **Volcanic Mountains:** Volcanic Mountains are formed due to volcanic activity. Mt.Kilimanjaro in Africa and Mt.Fujiyama in Japan are examples of such mountains.

5. We can group different landforms depending on elevation and slope as mountains, plateaus and plains.

- **Mountains:** A mountain is any natural elevation of the earth surface. The mountains may have a small summit and a broad base. It is considerably higher than the surrounding area. Some mountains are even higher than the clouds. In some mountains, there are permanently frozen rivers of ice. They are called glaciers.

There are some mountains you cannot see as they are under the sea. Because of harsh climate, less people live in the mountain areas. Since the slopes are steep, less land is available for farming.

- **Plateau:** A plateau is an elevated flat land. It is a flat-topped table land standing above the surrounding area. A plateau may have one or more sides with steep slopes. The height of plateaus often varies from few hundred metres to several thousand metres. Plateaus, like mountains may be young or old. The Deccan plateau in India is one of the oldest plateaus. The Tibet plateau is the highest plateau in the world with a height of 4,000 to 6,000 metres above the mean sea level. Plateaus are very useful because they are rich in mineral deposits.
- **Plains:** Plains are large stretches of flat land. They are, generally, not more than 200 metres above mean sea level. Some plains are extremely level. Others may be slightly rolling and undulating. Most of the plains are formed by rivers and their tributaries. Generally, plains are very fertile. Construction of transport network is easy. Thus, these plains are very thickly-populated regions of the world.

GEOGRAPHY

Chapter 7: Our Country – India



Our Country – India

India is a country of vast geographical expanse. In the north, it is bound by the lofty Himalayas. The Arabian Sea in the west, the Bay of Bengal in the east and the Indian Ocean in the south, wash the shores of the Indian peninsula.

India has an area of about 3.28 million sq. km. The north-south extent from Kashmir to Kanyakumari is about 3,200 km. And the east-west extent from Arunachal Pradesh to Kuchchh is about 2,900 km. The lofty mountains, the Great Indian Desert, the Northern Plains, the uneven plateau surface and the coasts and islands present a diversity of landforms. There is a great variety in the climate, vegetation, wildlife as well as in the language and culture. In this diversity, we find unity that is reflected in traditions that bind us as one nation. India has a population of more than one hundred twenty crores since the year 2011. It is the second most populous country of the world after China.

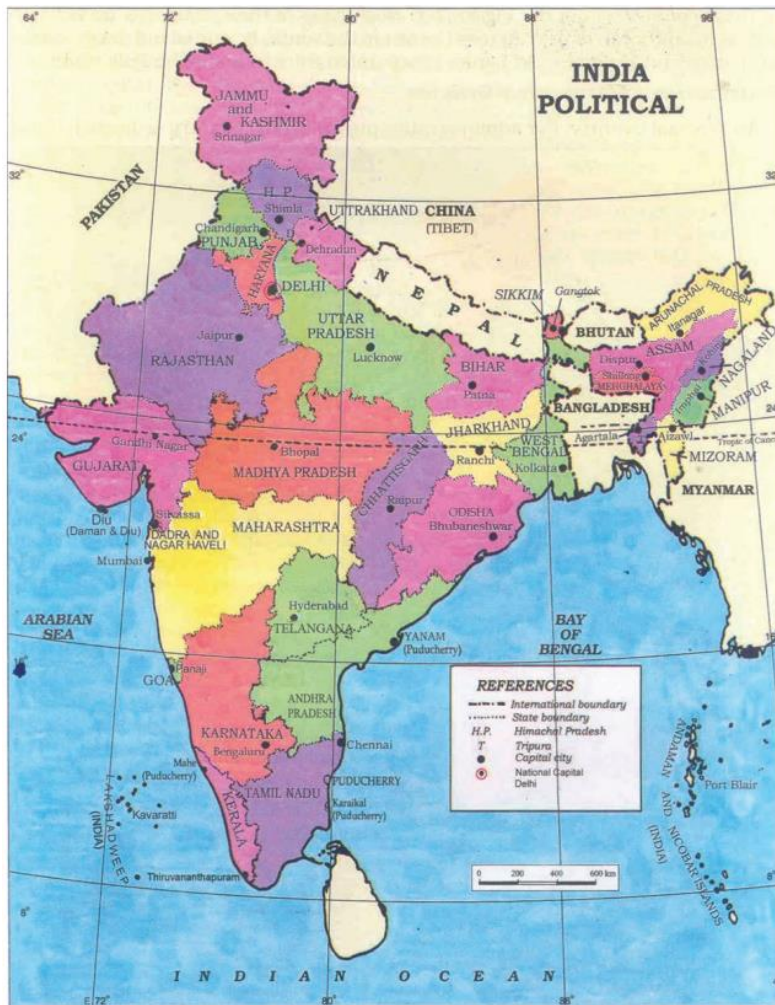
India - Area and Location

Following are some facts about India's size, area and location:

- The total area of India is 3.28 million sq. km. The total stretch of the country from north to south (Kashmir to Kanyakumari) is about 3,200 km. The east-west stretch (Arunachal Pradesh to Kutch) of the country is about 2,900 km.
- India is located in the Northern Hemisphere. The Tropic of Cancer passes through the centre of the country at 23°30' N.
- From south to north, the main land of India extends between the 8°4' N and 37°6' N latitudes. From west to east, India extends between the 68°7' E and 97°25' E longitudes.
- Due to its large longitudinal extent of about 29°, there are wide differences between the local time of two places, located far from each other, within India.
- In India, the longitude of 82°30' E is taken as the standard meridian for the entire country. The local time at this meridian is considered as the Indian Standard Time.
- The Himalayas and the fertile plains in the north, the Thar Desert in the west, and the plateaus, coasts and islands present the diverse landforms in the country.
- All across the country, there is a great variety in the climate, vegetation, languages, customs, and culture.
- After China, India is the second most populous country in the world.

India - Political Division

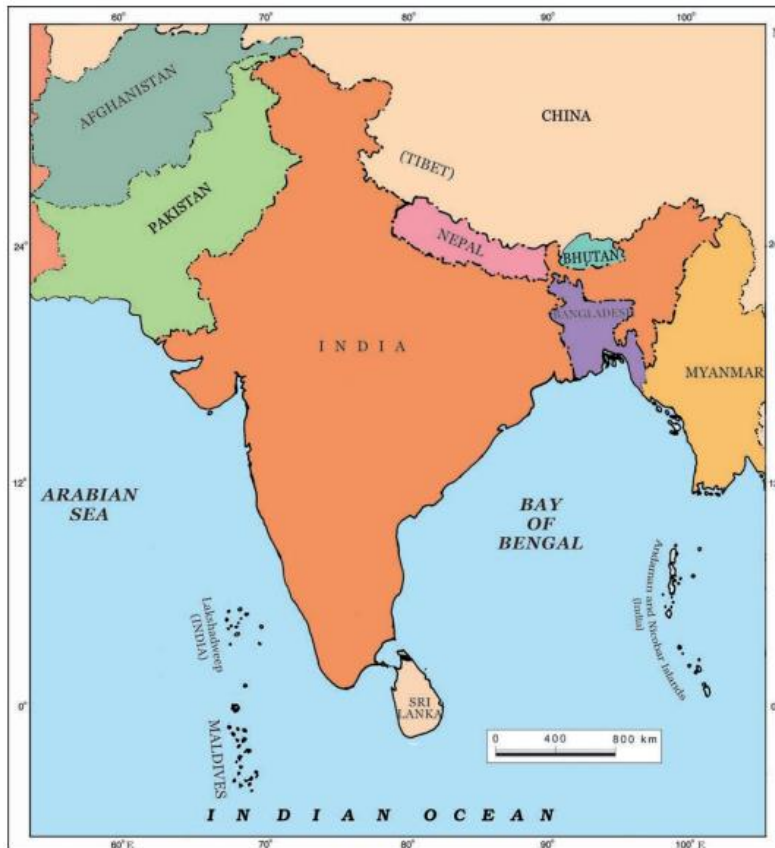
As the total stretch of India is large, our country is divided into 29 states and seven union territories. The states have been formed mainly on the basis of the languages spoken by the people. New Delhi is the capital of India. Rajasthan is the largest state while Goa is the smallest state. The states are further divided into districts and districts into towns and villages.



Political Map of India

India's Neighbours

Since India has a long boundary line, it shares its geographical boundaries with seven countries, China, Pakistan, Bangladesh, Bhutan, Myanmar, Nepal and Sri Lanka. Sri Lanka is separated from India by the Palk Strait.



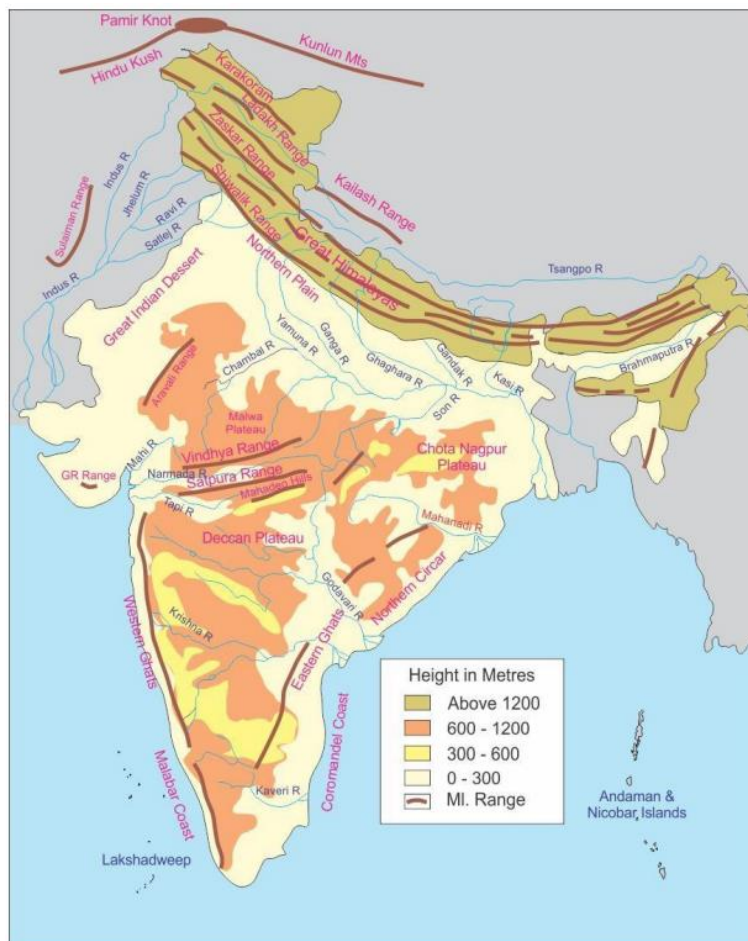
India and its neighbouring countries

India - Physical Divisions

India has diverse physical features which can be broadly categorised as follows:

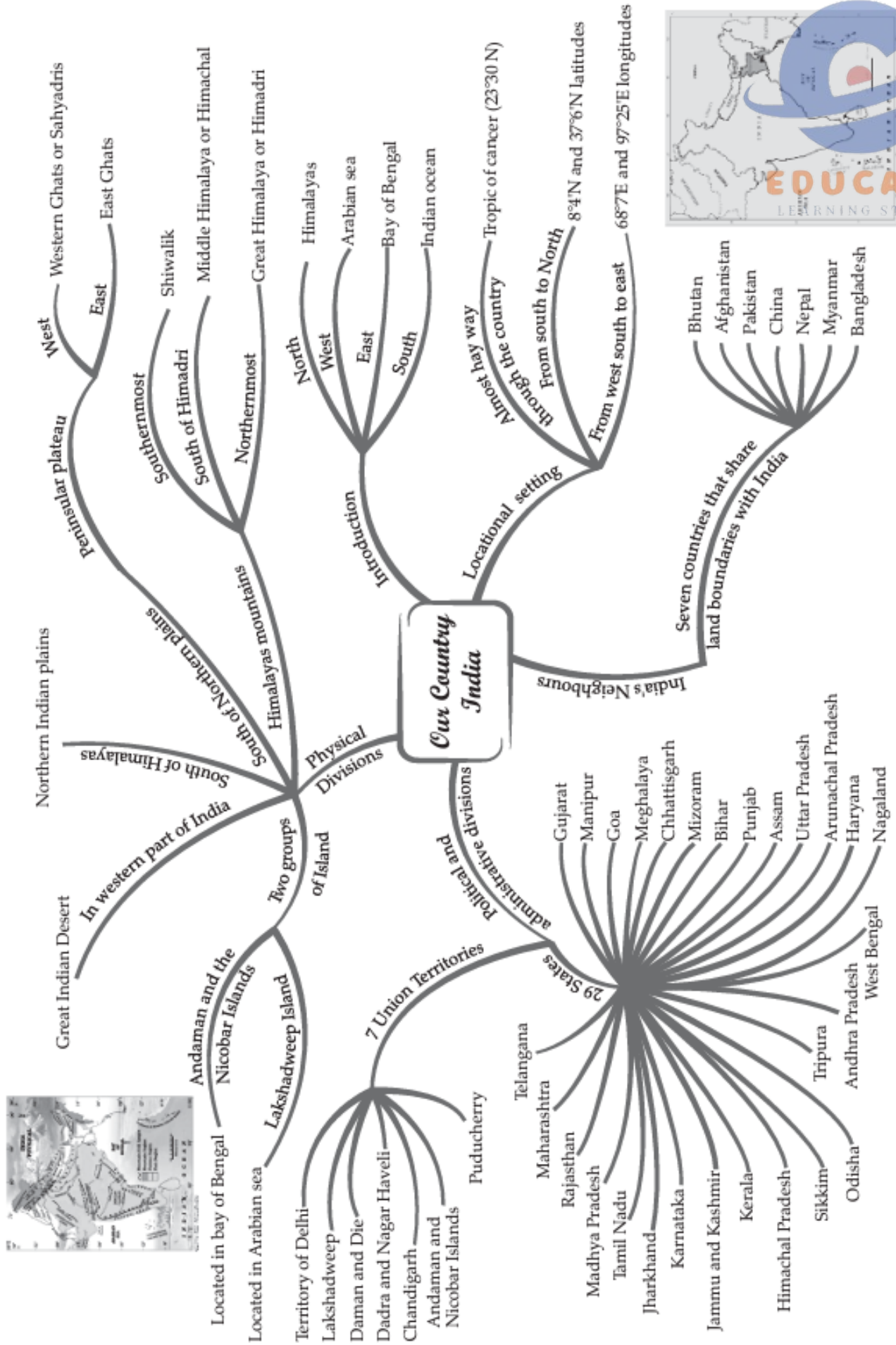
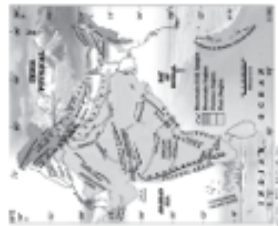
1. **The Himalayas:** They form the northern boundary of the country. The Himalayas are divided into three parallel ranges. They are:
 - **The Great Himalaya or Himadri:** This is the northernmost range of the Himalayas and some of the highest peaks are located here.
 - **Middle Himalayas or Himachal:** This range lies to the south of the Himadri and is a home to many popular hill stations.
 - **The Shiwaliks:** This is the southernmost range of the Himalayas.
2. **The Northern Indian Plains:** They lie to the south of the Himalayas. These plains have been formed by the alluvial deposits brought down by the rivers Indus, Ganga and Brahmaputra and their tributaries. Due to the alluvial deposits, the northern plains are fertile. Therefore, this region is densely populated.
3. **The Great Indian Desert:** It lies in the western part of India and hardly receives any rainfall. Hence it is devoid of any vegetation and is a hot, sandy and dry stretch of land.

4. **The Peninsular Plateau:** This region has many hill ranges and valleys. The peninsular plateau is triangular in shape. The **Aravalli ranges**, one of the oldest ranges in the world, surround it on the north-west. The other important ranges are the Vindhya and the Satpuras. The rivers Narmada and Tapi are important rivers in this region. The **Western Ghats**, also known as the Sahayadris, form its boundaries in the west and the **Eastern Ghats** border it in the east. The plateau is rich in mineral resources like iron ore and coal.
5. **The Indian Coastal Plains:** The Indian coastal plains are divided into the eastern coastal plains and the western coastal plains. The western coastal plains are very narrow while the eastern coastal plains are broader and have many rivers flowing towards the east. These rivers form a fertile delta. The Sunderban delta formed by the rivers Ganga and Brahmaputra is the largest delta in the world.
6. **The Indian Islands:** Lakshadweep and Andaman and Nicobar islands are two islands of India. While the Lakshadweep Islands are located in the Arabian Sea, the Andaman and Nicobar Islands are located in the Bay of Bengal. The latter group of islands was badly damaged by the tsunami (a giant sea wave generated due to earthquake on the ocean floor) which occurred in 2004.



Map of India showing its physical features

MIND MAP : LEARNING MADE SIMPLE CHAPTER-19





Important Questions

➤ Multiple Choice Questions:

Question 1. The world's highest peak is located in:

- (a) Great Himalaya or Himadri
- (b) Peninsular plateau
- (c) Western Ghats

Question 2. Which of the following country does not share the land boundary with India?

- (a) Afghanistan
- (b) Myanmar
- (c) Sri Lanka

Question 3. The capital of Manipur is:

- (a) Aizawl
- (b) Kolkata
- (c) Imphal

Question 4. Lakshadweep islands are located in the:

- (a) Arabian Sea
- (b) Bay of Bengal
- (c) Indian Ocean

Question 5. The Andaman and Nicobar islands lie to the south-east of the Indian mainland in the:

- (a) Arabian Sea
- (b) Bay of Bengal
- (c) Indian Ocean

Question 6. In which part of India lays the Great Indian Desert?

- (a) Southern
- (b) Western
- (c) Eastern

Question 7. Sri Lanka is separated from India by the:

- (a) Isthmus
- (b) Mountains



(c) Palk Strait

Question 8. In the east of India is the

- (a) Arctic Ocean
- (b) Pacific ocean
- (c) Arabian sea
- (d) Bay of Bengal

Question 9. Which of the following States is a member of the ' Seven Sisters '

- (a) West Bengal
- (b) Orissa
- (c) Tripura
- (d) Bihar

Question 10. Which is the standard meridian of India?

- (a) $82 \times 1 / 2^\circ$ W
- (b) $82 \times 1 / 2^\circ$ N
- (c) $82 \times 1 / 2^\circ$ E
- (d) $82 \times 1 / 2^\circ$ S

Question 11. Which of the following states does not common boundaries with Pakistan

- (a) Punjab
- (b) Gujarat
- (c) Haryana
- (d) Rajasthan

Question 12. The river which is called the Ganga of the south

- (a) Krishna
- (b) Tapi
- (c) Narmada
- (d) Godavari

Question 13. Peninsular plateau is

- (a) Triangular in shape
- (b) Circular shape
- (c) Square in shape
- (d) Rectangular in shape



Question 14. Which of the following is not the sea which surrounds the India Peninsula

- (a) Pacific Ocean
- (b) Indian Ocean
- (c) Arabian sea
- (d) Bay of Bengal

Question 15. The northern most limit of India is

- (a) $73^{\circ}2' N$
- (b) $37^{\circ} 6' N$
- (c) $45^{\circ}4' N$
- (d) $67^{\circ}3' N$

➤ **Fill in the blanks:**

1. The southernmost Himalayas are known as _____.
2. Sahyadris is also known as _____.
3. The Palk Strait lies between the countries _____.
4. The Indian islands in the Arabian Sea are known as _____.
5. The largest state in India in terms of area is _____.

➤ **Write true (T) or false (F):**

1. Aravali hill is one of the oldest ranges of the world.
2. India has an area of about 1.28 million sq. km.
3. The Greater Himalayas are also known as Himadri.
4. The Tropic of Cancer ($23^{\circ}30'N$) passes almost halfway through the country.
5. India is located in the southern hemisphere.

➤ **Very Short Questions:**

1. How many time zones are there in USA?
2. How many time zones are there in Canada?
3. In which hemisphere India is located?
4. Which is the smallest state in terms of area?
5. What is the other name of Middle Himalaya?
6. Which two major rivers fall into the Arabian Sea?
7. Which is the second most populous country of the world after China?

8. In how many parallel ranges The Himalayan Mountains are divided?
9. Where is the Great Indian Desert located?
10. Where is Lakshadweep Island located?



➤ Short Questions:

1. What is the north-south and east-west extent of India?
2. What is the latitudinal and longitudinal extent of India?
3. How Coral islands are formed?
4. Write about the geographical boundaries of India.
5. How many States and Union Territories are there in India? Which states have a common capital?
6. Why do a large number of people live in the Northern plains?

➤ Long Questions:

1. Write a note on political and administrative divisions of India.
2. Write about coastal plains of India.
3. Describe the major physical division of India.
4. Describe the Peninsular Plateau with its major features.
5. Mention the important features of the three main Himalayan ranges.

ANSWER KEY –

➤ Multiple Choice Answer:

1. (a) Great Himalaya or Himadri
2. (c) Sri Lanka
3. (c) Imphal
4. (a) Arabian Sea
5. (b) Bay of Bengal
6. (b) Western
7. (c) Palk Strait
8. (d) Bay of Bengal
9. (c) Tripura
10. (c) $82 \times 1 / 2^\circ$ E
11. (c) Haryana



12. (d) Godavari
13. (a) Triangular in shape
14. (a) Pacific Ocean
15. (b) 37° 6' N

➤ **Fill in the blanks:**

1. Shiwalik
2. Western Ghats
3. India and Sri Lanka
4. Lakshadweep Islands
5. Rajasthan

➤ **Write true (T) or false (F):**

1. True
2. False
3. True
4. True
5. False

➤ **Very Short Answer:**

1. There are seven time zones in USA.
2. There are six time zones in Canada.
3. India is located in the northern hemisphere.
4. Goa is the smallest state in terms of area.
5. Himachal is the other name of Middle Himalaya.
6. The rivers Narmada and Tapi fall into the Arabian Sea.
7. India is the second most populous country of the world after China.
8. The Himalayan Mountains are divided into three main parallel ranges.
9. The Great Indian Desert lies in the western part of India.
10. Lakshadweep Islands are located in the Arabian Sea.

➤ **Short Answer:**

1. The north-south extent from Kashmir to Kanyakumari is about 3,200 km. And the east-west extent from Arunachal Pradesh to Kuchchh is about 2,900 km.

2. From south to north, main land of India extends between $8^{\circ}4'N$ and $37^{\circ}6' N$ latitudes. From west to east, India extends between $68^{\circ}7' E$ and $97^{\circ}25' E$ longitudes.
3. Corals are skeletons of tiny marine animals called Polyps. When the living polyps die, their skeletons are left. Other polyps grow on top of the hard skeleton which grows higher and higher, thus forming the coral islands.
4. India is a country of vast geographical expanse. In the north, it is bound by the lofty Himalayas. The Arabian Sea in the west, the Bay of Bengal in the east and the Indian Ocean in the south, wash the shores of the Indian peninsula.
5. India is a vast country. For administrative purposes, the country is divided into 28 States and 7 Union Territories. Delhi is the national capital. Punjab and Haryana have a common capital i.e. Chandigarh.
6. Northern plains are generally level and flat. These are formed by the alluvial deposits laid down by the rivers– the Indus, the Ganga, the Brahmaputra and their tributaries. These river plains provide fertile land for cultivation. That is the reason for high concentration of population in these plains.

➤ Long Answer:

1. India is a vast country. For administrative purposes, the country is divided into 28 States and 7 Union Territories. Delhi is the national capital. The states have been formed mainly on the basis of languages. Rajasthan is the largest state and Goa is the smallest state in terms of area. The states are further divided into districts.
2. To the West of the Western Ghats and the East of Eastern Ghats lie the Coastal plains. The western coastal plains are very narrow. The eastern Coastal plains are much broader. There are a number of east flowing rivers. The rivers Mahanadi, Godavari, Krishna and Kaveri drain into the Bay of Bengal. These rivers have formed fertile deltas at their mouth.
3. **The major physical divisions of India are:**
 - **Himalayan Mountains:** The Himalayan Mountains are divided into three main parallel ranges. The northernmost is the Great Himalaya or Himadri. The world's highest peaks are located in this range. Middle Himalaya or Himachal lies to the south of Himadri. Many popular hill stations are situated here. The Shiwalik is the southernmost range.
 - **Northern Indian plains:** The Northern Indian plains lie to the south of the Himalayas. They are generally level and flat. These river plains provide fertile land for cultivation.
 - **Peninsular plateau:** To the south of northern plains lies the Peninsular plateau. It is triangular in shape. The relief is highly uneven. This is a region with numerous hill ranges and valleys.



- **Coastal Plains:** To the West of the Western Ghats and the East of Eastern Ghats lie the Coastal plains. The western coastal plains are very narrow. The eastern Coastal plains are much broader.
 - **Islands:** Lakshadweep Islands are located in the Arabian Sea. These are coral islands located off the coast of Kerala. The Andaman and the Nicobar Islands lie to the southeast of the Indian mainland in the Bay of Bengal.
4. **The Peninsular plateau lies to the south of northern plains. It is triangular in shape:**
- The relief is highly uneven.
 - This is a region with numerous hill ranges and valleys. Aravali hills, one of the oldest ranges of the world, border it on the north-west side. The Vindhyas and the Satpuras are the important ranges.
 - The rivers like the Narmada and the Tapi flow through these ranges. These are west flowing rivers that drain into the Arabian Sea.
 - The Western Ghats border the plateau in the west and the Eastern Ghats provide the eastern boundary. While the Western Ghats are almost continuous, the Eastern Ghats are broken and uneven.
 - The plateau is rich in minerals. It is black soil area which provides fertile land for cultivation..
5. **The important features of the three main Himalayan regions are:**
- **Greater Himalayas:** These mountains are also called the Himadri. These are highest of all mountains. They run from Indus to Brahmaputra. The highest peak is Mt. Everest (8848m). Others are Kanchenjunga, Dhaulagiri, and Nanda Devi, etc.
 - **The Lesser Himalayas:** These are also called Middle Himalayas or Himachal Himalayas. Most of the hill stations are situated on this range.
 - **Shiwalik Ranges:** These are the outer Himalayas. The average height of these ranges is about 1,200 metres.

GEOGRAPHY

Chapter 8: India - Climate, Vegetation and Wildlife





India - Climate, Vegetation and Wildlife

The Climate of India

India has diverse climatic conditions. The two terms, climate and weather, largely differ from each other.

Weather	Climate
It deals with the changes in the atmosphere over a short period of time.	It deals with the changes in the atmosphere over a longer period of time, i.e., over thirty to forty years.
The weather of a place may change daily.	The climate of a place remains constant for a long period of time.

The climate of India can be divided into the following four major weather seasons:

1. **Cold Weather Season:** Winter in India begins in December and lasts till February. Since the Sun's rays do not fall directly over the region, the temperatures become low, especially in North India.
2. **Hot Weather Season:** This season begins in March and lasts till May. During this season, the Sun shines directly overhead. This leads to a rise in temperature. In northern India, local hot and dry local winds blow which are known as 'loo'. People during this season drink 'sharbat' and consume fruits with a high water content like litchi, watermelon etc.
3. **South-West Monsoon Season:** The Monsoon winds which blow from the Arabian Sea and the Bay of Bengal are laden with moisture. These winds strike the mountains bringing rainfall into the country. The monsoon season in India lasts for four months i.e., from June to September.



4. **Season of Retreating Monsoon:** The season from October to mid-November is known as the season of retreating monsoons. Also known as autumn, the monsoon winds in India begin to retreat. The states of Tamil Nadu and Andhra Pradesh receive rainfall during this time.

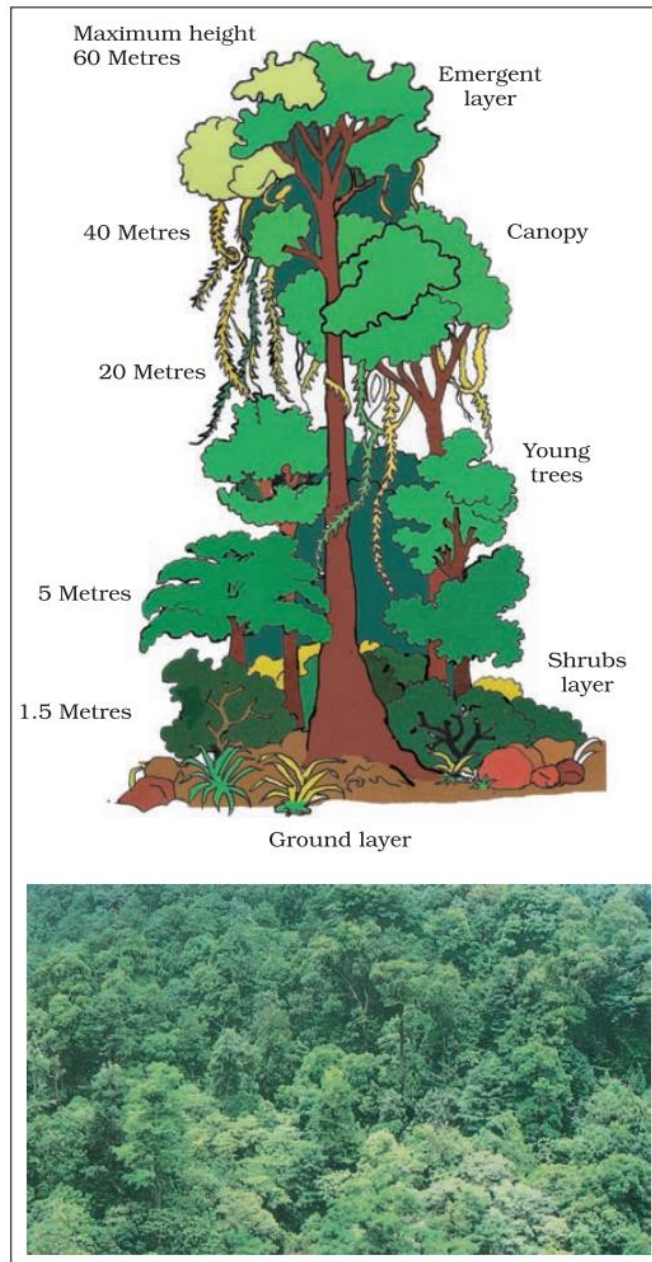
The climate of India is broadly described as the monsoon type. This type of climate ensures ample rainfall to the country which is vital for the flourishing agriculture in the country. The climate of a place is affected by its location, altitude, distance from the sea and various physical or relief features. This is the reason why the desert regions of Jaisalmer and Bikaner are extremely hot, while the Drass and Kargil regions in Jammu and Kashmir experience extremely cold conditions. Coastal regions such as Mumbai and Kolkata experience a moderate climate. Mawsynram in Meghalaya receives the highest rainfall in the world.

Natural Vegetation

The trees, grasses and shrubs which grow on their own without any human interference are called **natural vegetation**. The growth of natural vegetation depends on various climatic conditions. Since India has varied climatic conditions, we find a rich variety of natural vegetation in the country. Following are the five types of natural vegetation in India:

Tropical Rain Forests

- These occur in the areas of heavy rainfall. Tropical rain forests are so dense that even sunlight is not able to reach the ground.
- These forests are also known as evergreen forests as all the trees do not shed their leaves at the same time and hence they always appear green.
- They are found in North Eastern India, Andaman and Nicobar Islands and a part of Western slopes of the Western Ghats.
- Important trees in these forests are ebony, mahogany and rosewood.



Tropical Rain Forests

Tropical Deciduous Forests

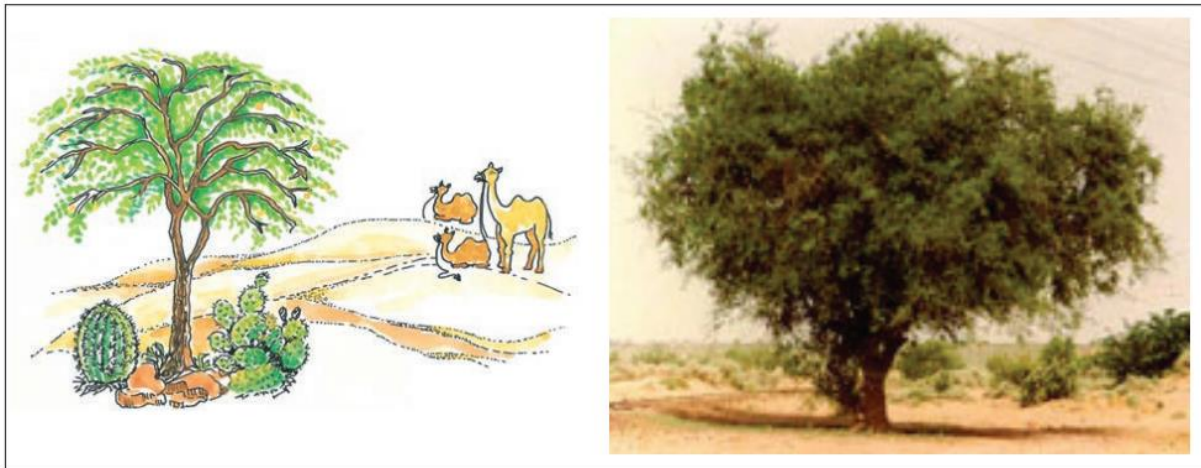
- Also known as the monsoon forests, tropical deciduous forests are less dense and are found over large parts of the country.
- The trees in these forests shed their leaves at a particular time in a year.
- These forests are found in Uttar Pradesh, Bihar, Madhya Pradesh, Jharkhand, Chhattisgarh, Odisha and in some parts of Maharashtra.
- Teak, sal, neem, shisham and sal are some important species of trees found in the tropical deciduous forests.



Tropical Deciduous Forests

Thorny Bushes

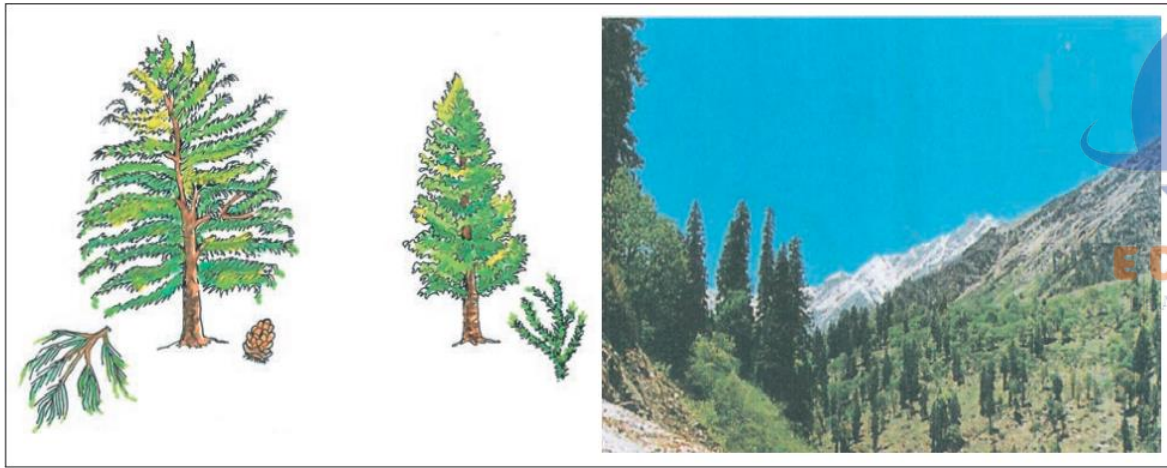
- This kind of vegetation is found in the hot and dry regions of the country.
- The leaves have spines in order to prevent the loss of water. They are found in the states of Rajasthan, Haryana, Gujarat and the eastern slopes of the Western Ghats.
- Some important varieties of trees are khair, keekar and babool.



Thorny Bushes

Mountain Vegetation

- These forests are mainly found in the mountainous regions of the country.
- The species of trees differ with an increase in altitude.
- As we go up to the height of 1500-2,500 metres, the temperature reduces and thus most of the trees are conical in shape. These trees are known as coniferous trees.
- Deodar, pine and cedar are some important species of trees in these forests.



Mountain Vegetation

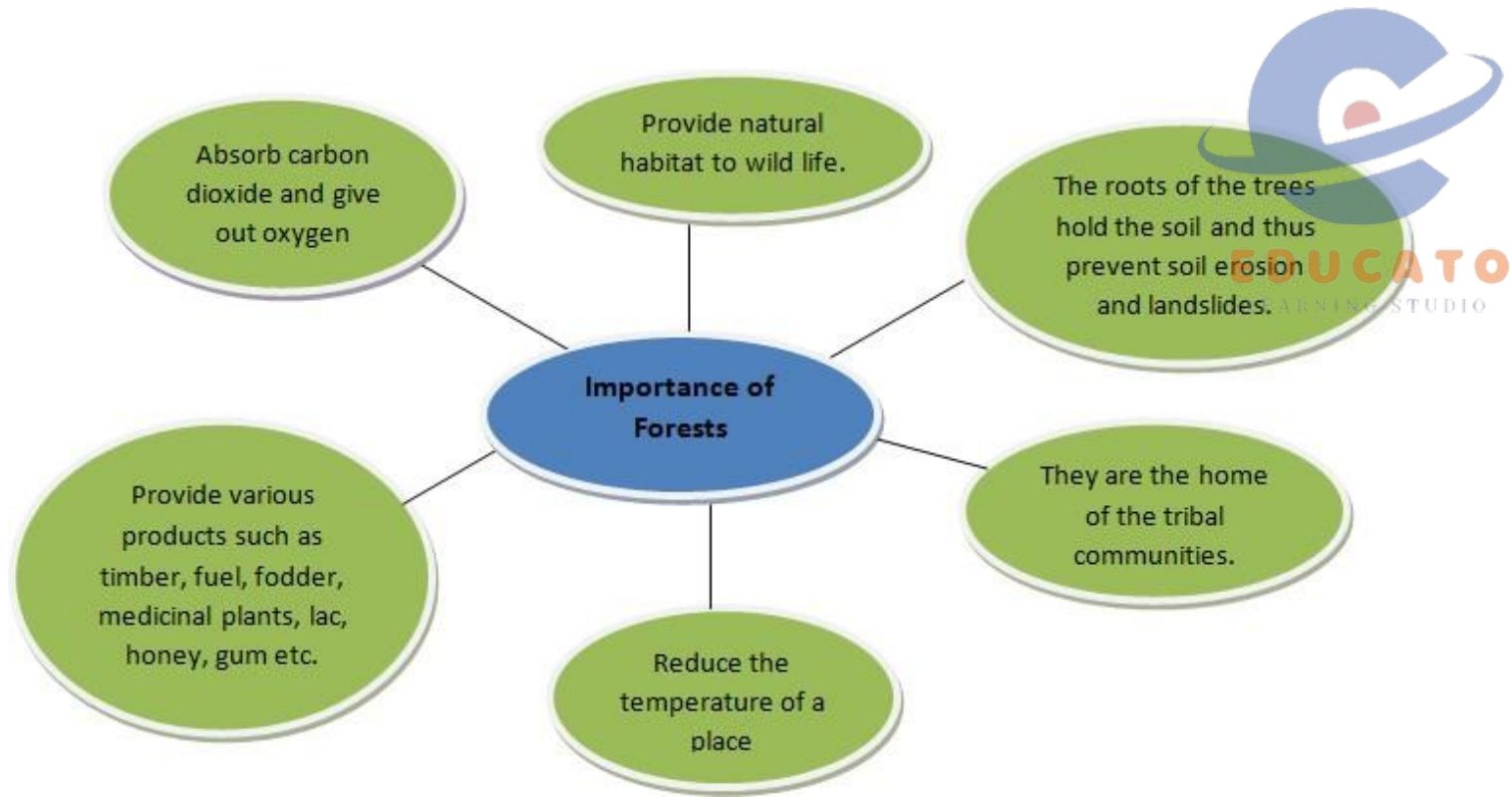
Mangrove Forests

- An important feature of these forests is that they can survive in fresh as well as saline water.
- They are found mainly in the Sunderbans in West Bengal and in the Andaman and Nicobar Islands.
- The Sunderbans have been named after the Sundari trees, which are generally found in the mangrove forests.



Mangrove Forests

Importance of Forests



The Indian Wild Life

Due to diverse climatic conditions and existence of different types of forests, India is home to a great variety of wild life.

- Many reptiles, amphibians, mammals, birds, insects etc are found in the Indian forests.
- The tiger is our national animal and is found in many parts of the country.
- Asiatic lions are found in the Gir forests of Gujarat.
- Assam and Kerala are the homes of elephants and the one horned rhinoceroses are found in the forests of Assam.
- While wild goats, snow leopards and bears are found in the cold regions of the Himalayan forests, camels and wild asses are found in the desert regions of Rajasthan and Gujarat.
- Monkey, wolf, deer and jackal are some common animals which are found all over the country.
- India is also the home of colourful birds such as the parrots, mynahs, bulbuls, geese, ducks etc.
- The peacock is the national bird of India.
- Many sanctuaries and forest reserves have been set up by the government to provide a natural habitat to the wild life of the country.



Asiatic lions are found in the Gir forests of Gujarat.

Important Questions

➤ Multiple Choice Questions:

Question 1. The trees having conical shape are called:

- (a) Cactus
- (b) Thorny
- (c) Coniferous

Question 2. Peepal, Neem and Shisham are trees:

- (a) Tropical Deciduous Forests
- (b) Thorny Bushes
- (c) Mangrove

Question 3. Jaisalmer and Bikaner of Rajasthan are:

- (a) Hot
- (b) Very Hot
- (c) Moderate

Question 4. The word 'Barish' is the word of:

- (a) Hindi
- (b) Urdu
- (c) Sanskrit

Question 5. Season of Retreating Monsoon is also called:

- (a) Winter
- (b) Rainy
- (c) Autumn

Question 6. Our National animal is:

- (a) Lion
- (b) Tiger
- (c) Elephant

Question 7. Our National Bird is:

- (a) Sparrow
- (b) Parrots
- (c) Peacock





Question 8. Siberian Cranes arrive in India in the month of:

- (a) December
- (b) January
- (c) February

Question 9. The roots of plants control:

- (a) Underground water
- (b) Fertility
- (c) Soil erosion

Question 10. Plants release:

- (a) Oxygen
- (b) Carbon dioxide
- (c) Nitrogen

Question 11. Which of the following is not among the seasons of India

- (a) Climate
- (b) Retreating monsoon
- (c) Winter
- (d) Rainy

Question 12. March to May is the season of

- (a) Monsoon
- (b) South-west Monsoon season
- (c) Hot weather Season
- (d) Cold weather season

Question 13. Agriculture in India depends upon

- (a) Drought
- (b) Snowfall
- (c) Rains
- (d) Flood

Question 14. Mangrove forests can thrive in

- (a) Sweet water
- (b) Polluted water
- (c) Fresh water

(d) Saline water

Question 15. Sunderban is located in

(a) Rajasthan

(b) West Bengal

(c) Gujarat

(d) Western Ghats



➤ **Fill in the blanks:**

1. Gir forest in Gujarat is the home of _____.
2. Elephants and one-horned rhinoceroses roam in the forests of _____.
3. The _____ is our national bird.
4. Cold Weather Season remains from _____ to _____.

➤ **Write true (T) or false (F):**

1. During the south west monsoon period, the moisture laden winds blow from sea to land.
2. Coastal places like Mumbai and Kolkata experience extreme climate.
3. The tiger is our national animal.
4. Tropical deciduous forest is found in dry areas of the country.

➤ **Very Short Questions:**

1. Write one adaptation of mountain vegetation.
2. What are called bushes?
3. Where does the world's highest rainfall occur?
4. Where can the mangrove forest survive?
5. Where wild goats and snow leopards are found?
6. Which forests are also known as monsoon forests?
7. What is loo?
8. Where mahogany and rosewood trees are found?
9. When do we like to eat or drink cold things?
10. When do we wear woollen clothes?

➤ **Short Questions:**

1. Name the different types of vegetation found in India.



2. What are coniferous trees? Give some examples.
3. What steps government has taken to conserve wildlife?
4. What do you mean by season of the retreating monsoons?
5. Write a note on thorny bushes.
6. Name the different seasons in India.

➤ Long Questions:

1. Why do we experience regional differences in the climate of India? Explain.
2. Write about wildlife of India.
3. What is the difference between evergreen forest and deciduous forest?
4. Explain the different types of seasons found in India.
5. Write a note on different types of vegetation found in India.

ANSWER KEY

➤ Multiple Choice Answer:

1. (c) Coniferous
2. (a) Tropical Deciduous Forests
3. (b) Very Hot
4. (b) Urdu
5. (c) Autumn
6. (b) Tiger
7. (c) Peacock
8. (a) December
9. (c) Soil erosion
10. (a) Oxygen
11. (a) Climate
12. (c) Hot weather Season
13. (c) Rains
14. (d) Saline water
15. (b) West Bengal

➤ Fill in the blanks:

1. Asiatic lions

2. Assam
3. Peacock
4. December to February



➤ **Write true (T) or false (F):**

1. True
2. False
3. True
4. False

➤ **Very Short Answer:**

1. Trees in mountain region are conical in shape.
2. Small plants are called bushes.
3. The world's highest rainfall occurs in Mawsynram.
4. These forests can survive in saline water.
5. Wild goats and snow leopards are found in Himalayan region.
6. Tropical deciduous forests are also known as monsoon forests.
7. Hot and dry winds blow during the day in summer is called loo.
8. Mahogany and rosewood trees are found in tropical evergreen forests.
9. On hot day sunny day we like to eat or drink cold things.
10. We wear woollen clothes when we feel cold.

➤ **Short Answer:**

1. Vegetation of India can be divided into five types – Tropical evergreen forest, Tropical deciduous forest, Thorny bushes, Mountain vegetation and Mangrove forests.
2. At a height between 1500 metres and 2500 metres most of the trees are conical in shape. These trees are called coniferous trees. Chir, Pine and Deodar are important trees of these forests.
3. In order to protect them many national parks, sanctuaries and biosphere reserves have been set up. The Government has also started Project Tiger and Project Elephant to protect these animals.
4. Winds move back from the mainland to the Bay of Bengal. This is the season of the retreating monsoons. The southern parts of India, particularly Tamil Nadu and Andhra Pradesh receive rainfall in this season.
5. This type of vegetation is found in dry areas of the country. The leaves are in the form of

spines to reduce the loss of water. Cactus, khair, babool, keekar are important and are found in the states of Rajasthan, Punjab, Haryana, Eastern slopes of Western Ghats and Gujarat.

6. The major seasons in India are:

- Cold Weather Season (Winter) December to February.
- Hot Weather Season (Summer) March to May.
- Southwest Monsoon Season (Rainy) June to September.
- Season of Retreating Monsoon (Autumn) October and November.



➤ **Long Answer:**

1. The climate of a place is affected by its location, altitude, distance from the sea, and relief. Therefore, we experience regional differences in the climate of India. Jaisalmer and Bikaner in the desert of Rajasthan are very hot, while Drass and Kargil in Jammu and Kashmir are freezing cold. Coastal places like Mumbai and Kolkata experience moderate climate. Mawsynram in Meghalaya receives the world's highest rainfall, while in a particular year it might not rain at all in Jaisalmer in Rajasthan.
2. Forests are home to a variety of wild life. There are thousands of species of animals and a large variety of reptiles, amphibians, mammals, birds, insects and worms which dwell in the forest. Gir forest in Gujarat is the home of Asiatic lions. Elephants and one-horned rhinoceroses roam in the forests of Assam. Elephants are also found in Kerala and Karnataka. Camels and wild asses are found in the Great Indian desert and the Rann of Kuchchh respectively. Wild goats, snow leopards, bears, etc. are found in the Himalayan region. Besides these, many other animals are found in our country such as monkey, wolf, jackal, nilgai, cheetal, etc. India is equally rich in bird life. This includes birds are parrots, pigeons, mynah, geese, bulbul and ducks.
3. **Difference between evergreen forest and deciduous forest:**

Evergreen forest	Deciduous forest
Tropical Rain Forests occur in the areas which receive heavy rainfall.	In a large part of India we have this type of forest.
They always appear green and are called evergreen forest	These forests are also called monsoon forests.
They are so dense that sunlight doesn't reach the ground.	They are less dense.

They shed their leaves at different times of the year.	They shed their leaves at a particular time of the year.
Important trees found in these forests are mahogany, ebony and rosewood.	Important trees found in these forests are sal, teak, peepal, neem and shisham.
They are found in Andaman and Nicobar Islands, parts of North-Eastern states and a narrow strip of the Western slope of the Western Ghats	They are found in Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh, Odisha, and in parts of Maharashtra.

4. The major seasons recognized in India are:

- **Cold Weather Season (Winter) December to February:** During the winter season, the sun rays do not fall directly in the region. As a result the temperatures are quite low in northern India.
- **Hot Weather Season (Summer) March to May:** In the hot weather season sun rays more or less directly fall in this region. Temperature becomes very high. Hot and dry winds called loo, blow during the day.
- **Southwest Monsoon Season (Rainy) June to September:** This season is marked by the onset and advance of monsoon. The winds blow from Arabian Sea and Bay of Bengal towards the land. They carry moisture with them. When these winds strike the mountain barriers, rainfall occurs.
- **Season of Retreating Monsoon (Autumn) October and November:** Winds move back from the mainland to the Bay of Bengal. This is the season of the retreating monsoons. The southern parts of India, particularly Tamil Nadu and Andhra Pradesh receive rainfall in this season.

5. Different types of vegetation found in India:

- **Tropical Rain Forests:** Tropical Rain Forests occur in the areas which receive heavy rainfall. They are so dense that sunlight doesn't reach the ground. Many species of trees are found in these forests, which shed their leaves at different times of the year. Andaman and Nicobar Islands, parts of North-Eastern states and a narrow strip of the Western slope of the Western Ghats are home of these forests.
- **Tropical Deciduous Forests:** In a large part of our country we have this type of forest. These forests are also called monsoon forests. They are less dense. They shed their leaves at a particular time of the year. Important trees of these forests are sal, teak, peepal, neem and shisham. They are found in Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh, Odisha, and in parts of Maharashtra.
- **Thorny Bushes:** This type of vegetation is found in dry areas of the country. The

leaves are in the form of spines to reduce the loss of water. Cactus, khair, babool, keekar are important and are found in the states of Rajasthan, Punjab, Haryana, Eastern slopes of Western Ghats and Gujarat.

- **Mountain Vegetation:** A wide range of species is found in the mountains according to the variation in height. With increase in height, the temperature falls. At a height between 1500 metres and 2500 metres most of the trees are conical in shape. These trees are called coniferous trees. Chir, Pine and Deodar are important trees of these forests.
- **Mangrove Forests:** These forests can survive in saline water. They are found mainly in Sunderbans in West Bengal and in the Andaman and Nicobar Islands. Sundari is a well-known species of trees in mangrove forests after which Sunderbans have been named.

