



SOCIAL SCIENCE

TERM 1

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E-Book



Assessment



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Unit 1

OUR EARTH

Imayan is waiting for his father in the evening, after returning from school. His father is an employee in a reputed bank



Imayan : Come Daddy! (Imayan ran and hugged his father)

Father : what Imaya? Had your snacks?

Imayan : Yes, I had!

Father : What are you doing? Have you completed your homework?

Imayan : My social teacher told to draw solar system will you please help me?

Father : Yes Sure.

Imayan : She is going to teach about Earth tomorrow. She told to gather information about earth. Please tell me about that dad.

Father : Oh! Ok. I will tell you.

Imayan : How did the earth originate?

Father : Millions of years ago an explosion called the big bang occurred. Numerous stars and celestial bodies came into existence by that massive explosion. These celestial bodies together called the Universe. It is also referred to as cosmos.

Nebula Zone



Imayan : Will you explain about Universe, Daddy?

Father : The Universe is a vast expanse of space. The Universe consists of billions of galaxies, stars, planets, comets, asteroids, meteoroids and natural satellites. The exact size of the universe is still unknown. Scientists believe that the universe is still expanding outward.

Imayan : What is the galaxy, daddy?

Galaxy



Father : Galaxy has a huge cluster of stars. Our galaxy 'Milky way' is one of the countless billions of galaxies in the Universe.

Milky Way



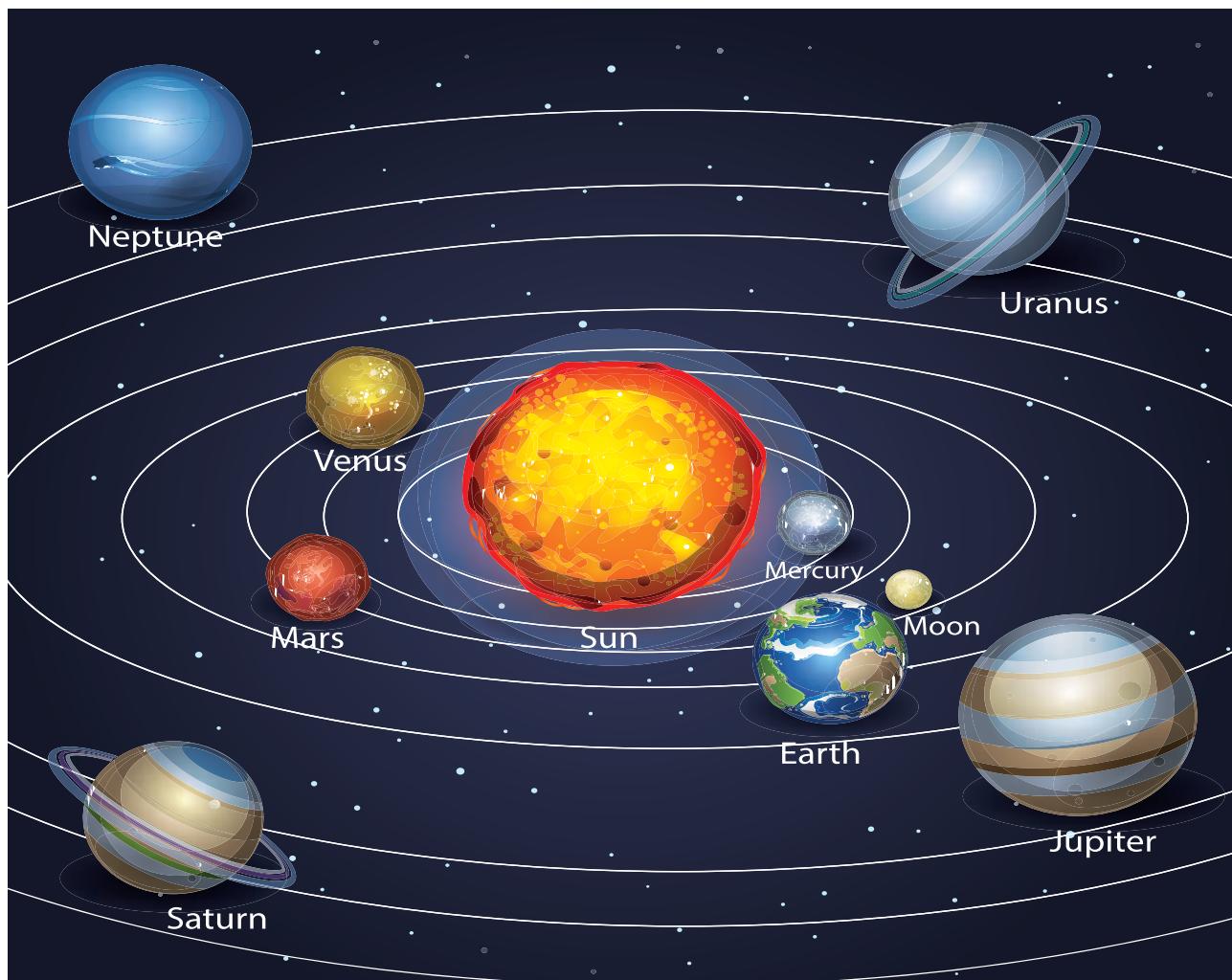
Imayan : Ok Daddy. What is Solar system?

Father : Solar system consists of the sun, the planets, their moons, dwarf planets, asteroids and comets. These objects are gravitationally bound.

Imayan : Very interesting dad. Tell me about our solar system.

Father : There are 8 planets in our solar system. The outer planets are Gaseous planets. They are Jupiter, Saturn, Uranus and Neptune. The inner -rocky planets are Mercury, Venus, Earth, and Mars. They are called Terrestrial planets. The frozen planets are Uranus and Neptune.

Solar Family



Activity



Make the Globe.

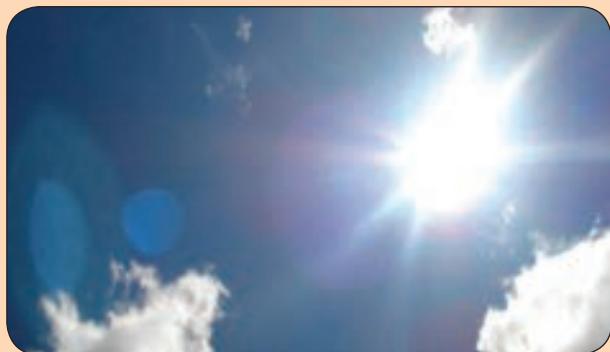


Imayan : Then, where is our Earth daddy?

Father : The Earth is the third planet from the sun and the fifth largest in the solar system

Imayan : It is said that the earth is rotating itself and at the same time revolving around the sun. Is it true?

Father : Yes, it has two movements. They are rotations and revolution. The earth rotates on its axis. It is called rotation of the earth. It also revolves around the Sun. It is called revolution of the earth. Day and night are caused due to the earth's rotation. Seasons are caused by Earth's revolution. Life is possible only on earth because of the presence of land, air and water.



Summer

March to May



Winter

December to February



South West Monsoon

June to September



North East Monsoon

October and November

Imayan : Oh! I see. What is the distance between the sun and the earth?

Father : The distance is nearly 150 million kilometre between the sun and the earth.

Imayan : Say some interesting facts about Planets dad?

Father : Mercury and Venus lie near the sun. Next to Earth is Mars, Jupiter, Saturn, Uranus and Neptune. The planets nearer to the sun are very hot. The planets away from the sun are very cold. Mercury is the smallest planet. Venus is called Earth's twin. Mars is described as the Red planet. Earth is called the Blue planet. Saturn is the Ringed planet.

Imayan : Wow! Amazing! Where do we live on the Earth?



Father : We live on the surface of the Earth. It is made up of 7 continents and 5 oceans.

Imayan : 7 continents!! What are they?

Father : Listen. They are: Asia, Africa, North America, South America, Antarctica, Europe, and Australia.

Imayan : Which is the biggest continent?

Continents and Oceans



Father : The Asian continent where we live is the biggest of all. And Australia is the smallest one. The Antarctica is the continent full of snow.

Imayan : What are the five oceans Daddy?

Father : Pacific Ocean, Atlantic Ocean, Indian Ocean, Arctic Ocean and Southern Ocean. Do you know that around 97 percent of the planet's water is in the Ocean?

Imayan : Is it so, Daddy?

Father : Yes, Around 71 percent of our Earth is covered by salt water and that is called as Ocean. Only 2.5 percent of water is fresh and 1 percent of it is easily accessible.

ASIA

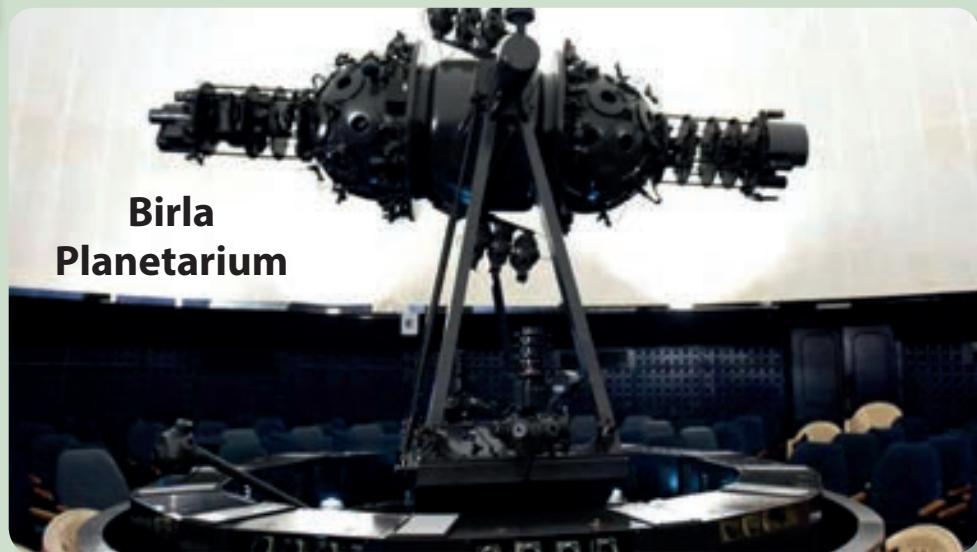


Imayan : Thank you, Daddy. Today I have learnt a lot about the earth from you. Now I am going to study and do my home work.

Father : Ok, Imaya. Go and study.



Birla Planetarium is located in Chennai which provides virtual tour of the night sky and planets of the solar system.



Birla Planetarium

Evaluation

I. Fill in the blanks.

1. The distance between the earth and the sun is _____.
2. _____ is caused due to revolution of the Earth.
3. The continent which is covered by ice is _____.
4. The biggest continent is _____.
5. _____ is described as Red Planet.
6. _____ Percentage of our earth is covered by salt water.



II. Match the Following:

- | | | |
|-----------------------|---|-----------------|
| 1. Smallest continent | - | farthest planet |
| 2. Blue planet | - | Australia |
| 3. Neptune | - | Earth |

V. Answer in detail

Draw and Write about the solar system.

VI. Activity:

1. Collect images on various types of planets.
2. On a world map mark the five oceans of the Earth.
3. On a world map mark the deserts and forests.

VII. Mapwork

Find the Continents and write their name in the world map.

III. Short answer:

1. Define the origin of the Earth.
2. Define solar system?
3. How many oceans are there in the earth?
4. Distinguish between Rotation and Revolution?

IV. Paragraph:

1. What do you know about Universe?.
2. Write about the nature of the Planet Earth.

Unit 2

TOWARDS HISTORY



Stone Age

Stone tools and weapons were used by humans in the past. To start with, humans were not aware of any weapons or metals. They took several years to invent them. Our lives today are their gifts. In this period humans were not aware of scripts. The stone age is the period in which Stones were used as weapons.



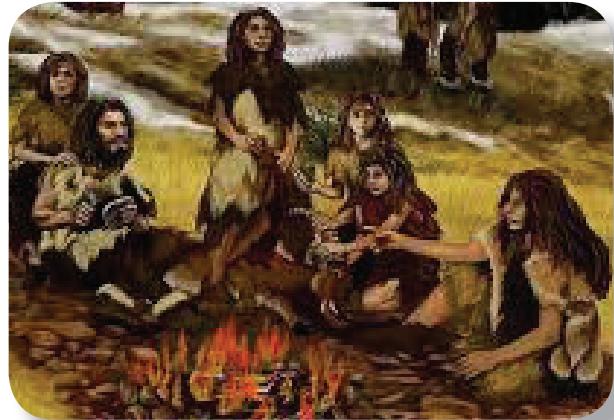
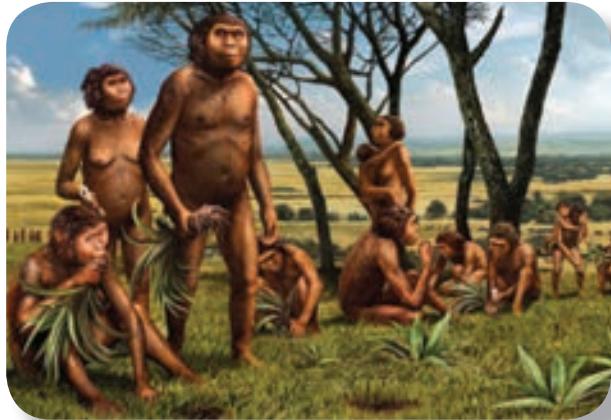
Nature of Human Evolution

Early humans lived in jungles along with animals. They used the stone tools to protect themselves, drive away animals, dig out roots, shoots etc. The most important thing is that they ate everything raw including flesh. They did not know the use of fire in the beginning. At first, dog was their good companion. Wild animals ran away when dogs barked. Humans tamed dog as their pet at first. They took it wherever they went. Later they started rearing cattle as they did not harm them and were very useful to them. They observed some grains growing along the river side. They ate them and found it very tasty. They observed that the scattered grains were only eaten up by birds. They were keen observers. Early man found that the grains grow with the help of sunshine and rainfall. Thus, they learnt the art of cultivation.



Humans noticed forest fire. At first they were afraid of fire. They found some animals dead due to fire. They ate the flesh of the burnt animals. It tasted good. They also observed that the spark came out by scratching two stones together. Since then, they ate cooked food.





Museum

Museum is a place where objects which are rare and used by our ancestors are preserved. These give information about the lives of people. Therefore it is important to preserve the remains of the past. Remains are the objects or things used by the people of the past which got buried under the Earth.

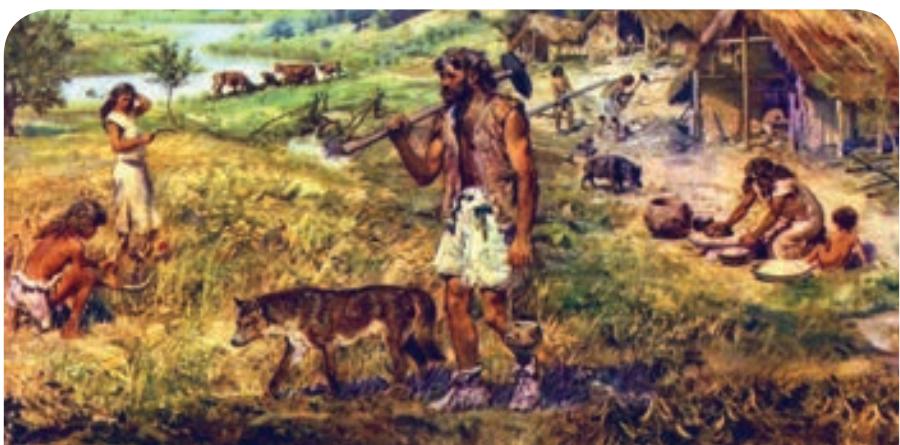


- ✓ Early man used Quartzite, a type of stone for making tools and weapons.
- ✓ A type of stone called flint stone was used to produce fire.



Cultivation

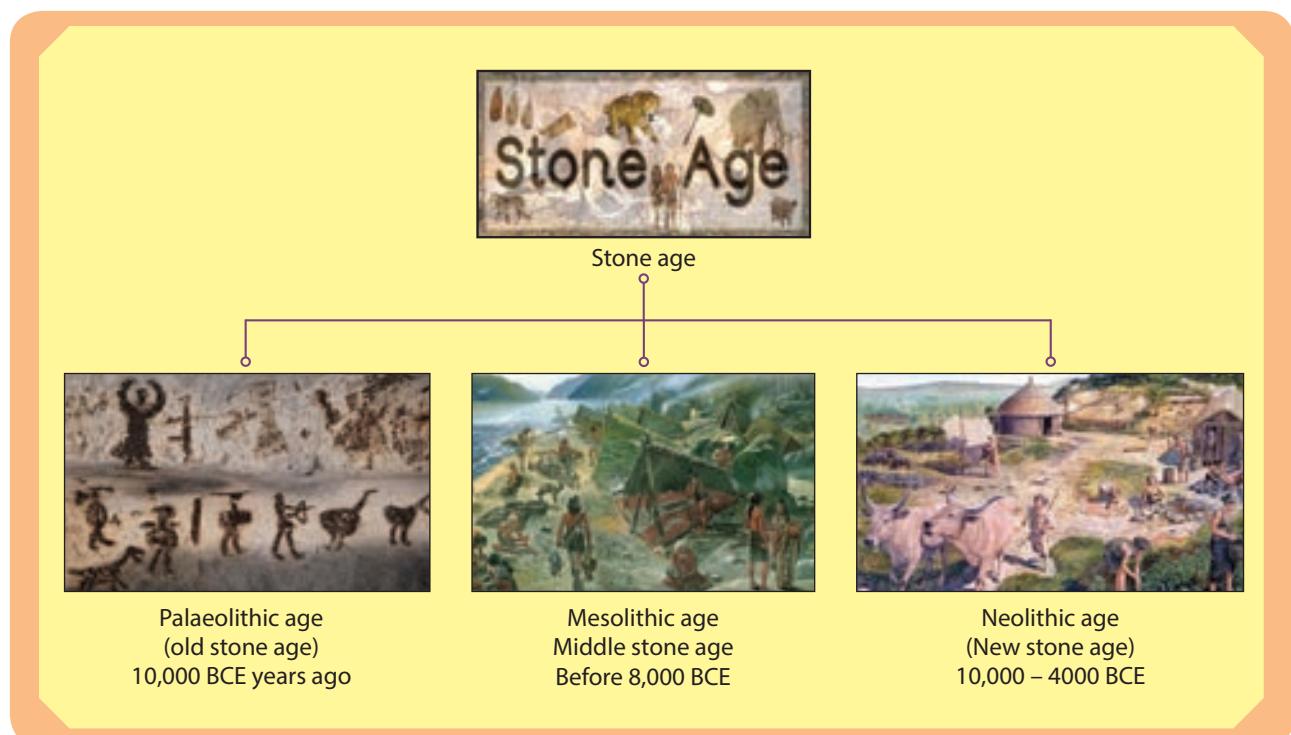
Early humans did not know to grow crops. They wandered in all the landscapes in search of food. They ate whatever they got and drank water from natural sources. This kind of life was called **nomadic life**. They wore leaves, skins of animals, barks of trees to cover their body. They lived in caves and holes of big trees.





Stones were sharpened as tools by them. They made it with the help of other stones. These sharp tools helped to hunt animals and tear the flesh of animals.

They used bones, horns, stones, skin, branches of trees and sticks as their tools and weapons. This stage of development in history was called **New stone age** or **Neolithic age**.



Activity



What was the food eaten by early humans?

- _____
- _____
- Why did early humans live in the caves?
- Why did they eat raw flesh?



They used clothes, torches, tools and weapons.

The purpose of using them are given below:



To protect themselves from animals



To find the path at night



To protect themselves from winter

They drew paintings of what they saw around them on the walls of the caves where they lived.
Distinguish between

Palaeolithic age	Mesolithic age	Neolithic age

Stone wheels

When the stones rolled down the mountains they acquired round shape. Humans observed them and thus wheel was invented. In the beginning it was made of stone and later by wood. This was the first scientific invention.



Pottery



Pottery was also one of the greatest inventions by humans. The baked pot was strong and looked beautiful. Stone Age people made all the household artifacts (articles made by humans) by themselves.

Stone houses were built. The roofs of these houses were thatched with sticks and husks. After this several inventions were made, humans started living in a settled life.

The period which has written documents are called historical period. These documents help us to know about the life styles of the people, events, food habits, culture, art, architecture, literature etc.,

Agriculture was an important activity in the history of humans. They started cultivating crops. They sowed seeds and harvested crops. They found it convenient to live along the river as crops grew well near the river.

Burial pots called urns have been excavated in which the dead bodies were placed and buried under the ground.

20 lakhs years ago man walked straight. Around 3 lakhs years ago he spread all over the earth. He cultivated around 8000 years ago. Since then civilisations started around 300 years ago.

Changes in man's life →

Man → family → society → group → administration

Earthenware Vessels Metal used in the stone age.



At the end of new Stone Age copper was invented. In this age both stone and copper were used. This period was called **Chalcolithic Age**. Bronze was produced when copper, zinc and tin were mixed together. The period when people made tools from an alloy called bronze was called Bronze Age.

Tell the names of some iron tools found at your home.

- Sickle Spade
- _____
- _____

After this, humans found iron and started using iron tools and weapons. This age was called Iron Age. In this age household articles, agricultural tools etc. were made of iron. Metals were alloyed and tools were made.

You can collect – coins, potsherds, metal objects etc. Most of these objects are dug out from the ground. Such objects are preserved in the museum. In Tamilnadu, Athichanallur, Arikamedu and Keeladi are the sites where the objects used by the people of the past are excavated. Still research is going on in these sites.

Activity



**Find the age
of period**



Palaeolithic age
Mesolithic

Neolithic age
Chalcolithic age

Ironage

Archaeological excavations

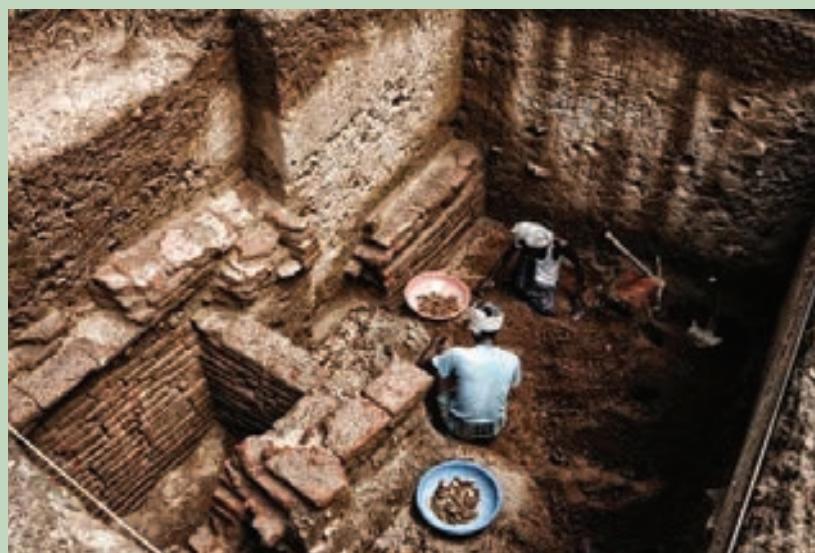
If you come across any old, traditional objects of historical value try to collect and save them.



Athichanallur



Arikamedu



Keeladi

Pre historic period

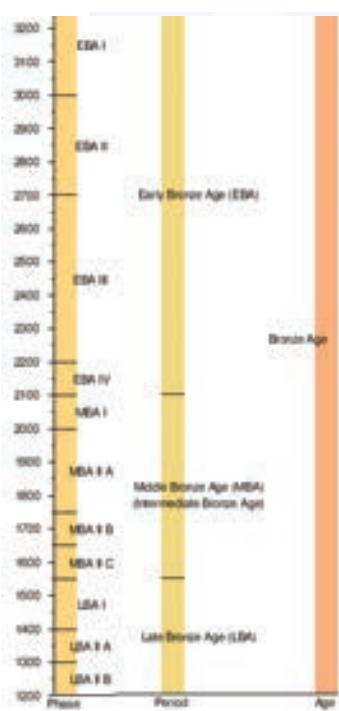
*Palaeolithic age
Before
10,000 B.C. (BCE)*

*Mesolithic
Middle age
Before 8,000 B.C.
(BCE)*

*Neolithic age
10,000 to
4,000 B.C. (BCE)*

*Chalcolithic age
3000 to
1500 B.C. (BCE)*

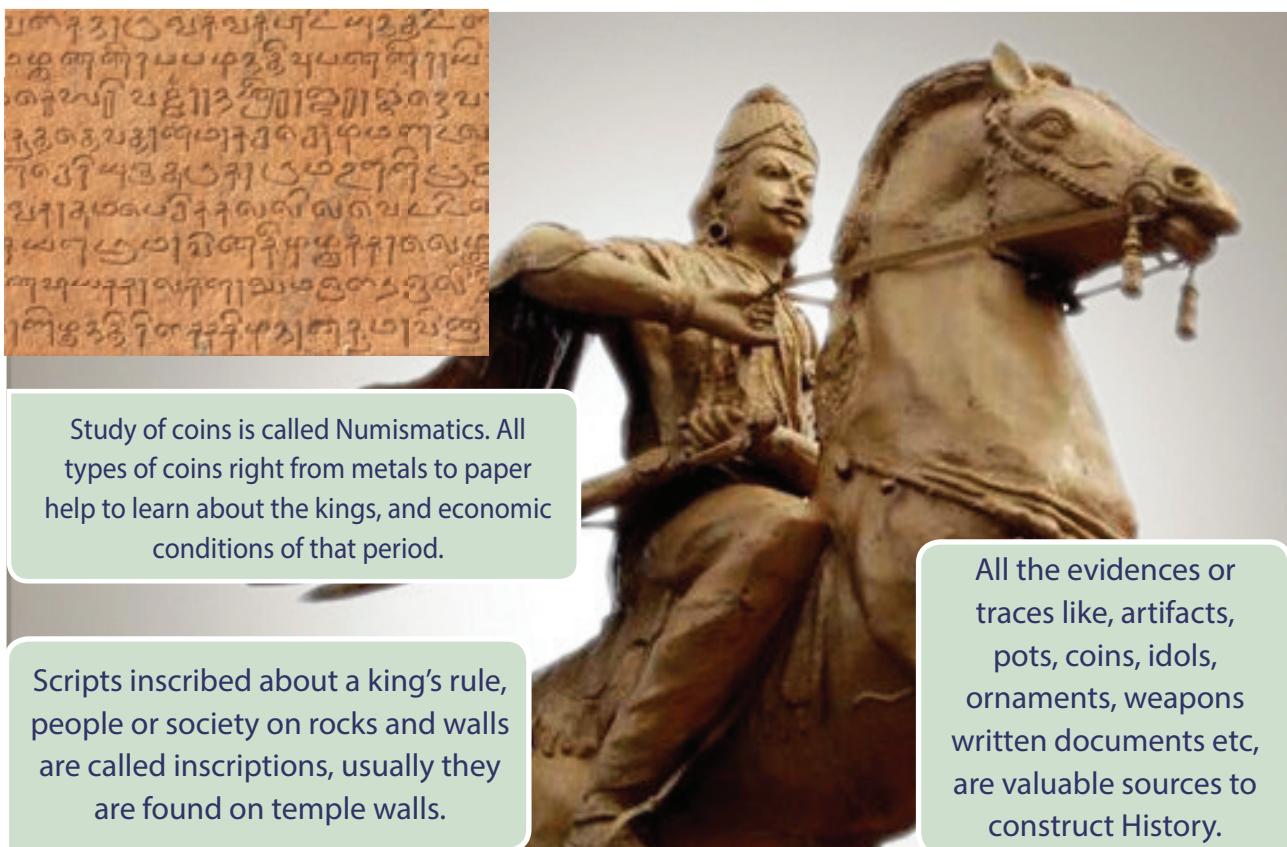
*Ironage
1500 to
600 B.C. (BCE)*



Before Christ (B.C)
Before Common Era (BCE).
Anno Domini (A.D)
Common Era (CE)

The term Chronology is used to express
the historical events in respect of dates
and years in the order of their occurrence





Study of coins is called Numismatics. All types of coins right from metals to paper help to learn about the kings, and economic conditions of that period.

Scripts inscribed about a king's rule, people or society on rocks and walls are called inscriptions, usually they are found on temple walls.

All the evidences or traces like, artifacts, pots, coins, idols, ornaments, weapons written documents etc, are valuable sources to construct History.

Evaluation

I. Choose the best answer.

1. Palaeolithic humans,
 - a) Wore cotton clothes
 - b) Wore leaves and skin of animals
 - c) Wore woolen clothes.
2. The animal tamed by early human was
 - a) Cow
 - b) Horse
 - c) Dog
3. The first metal invented by early human was
 - a) Iron
 - b) Copper
 - c) Gold

II. Fill in the blanks

1. Early man lived in _____.
2. The period before the inventions of script was called._____.
3. The period that used iron tools was called _____.



4. The first scientific invention was _____.
5. Name one site where historical research is still going on _____.

III. Answer in detail.

1. What is Stone Age?
2. Define Neolithic age.
3. In which age Stone and copper were used?
4. What are the sources that help us to learn history?
5. What is a museum?
6. How can we classify the prehistoric period?
7. Classify Palaeolithic and Neolithic tools.

Good Citizen

Unit 3



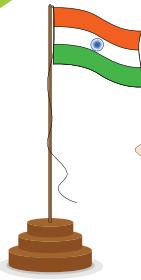
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Helping some one



Growthing Trees



Saluting National flag



Helping old People



Gardening



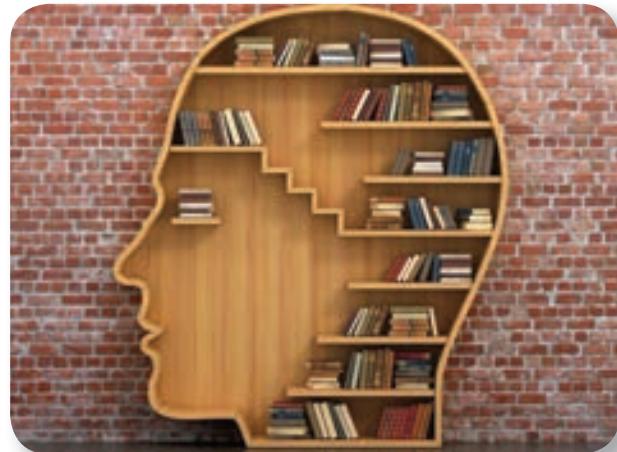
Pampering Pet animal

What do the above pictures say?

Who is a human? What are the differences between animals and human beings?

'Man is a social animal'. Human beings are bestowed with senses. Human beings think and act using their senses. They are born free but bound in the social web. They cannot live alone. They need social and emotional support. To live in the society they need to develop some good values.

We are born with few values and rights. These values are further polished in educational institutions. The aim of education is to change a person into a valuable person.

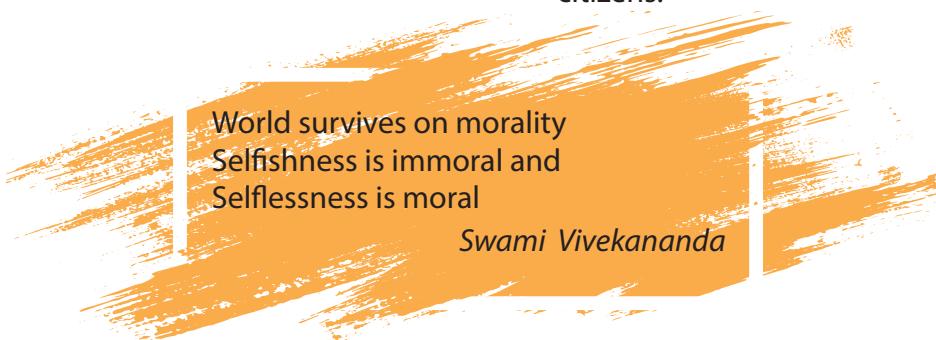


Good values are the qualities of a person that keep society running. These qualities can be developed by all.

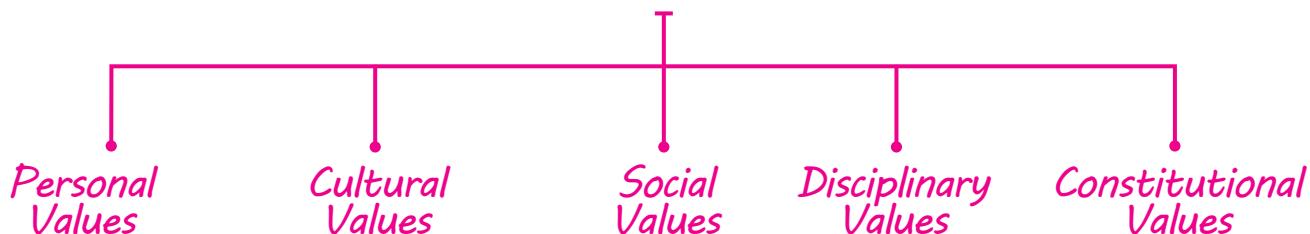
The term 'civic' relates to people or civilian or citizen of a country. People should live together in unity.

Living together in harmony despite all the disparities is a significant value. Helping others is also an important value.

There should be no disparity among people and all are one. Today's children are tomorrow's citizens of the nation. Moral and good values have to be grown among children so that they may become valuable citizens.



Good values



Personal values:

Personal value is the basic value for every individual. We must bring out the hidden values of a person that they acquire from their experiences. This leads to their overall development.

Try these

1. We show _____ to all living beings.
2. Help the poor with _____.
3. _____ is the best policy.
4. The best relationship is _____.
5. We show _____ to our guests.
6. We show _____ to those who suffer.
7. Always speak the _____.
8. We must maintain _____ in public.

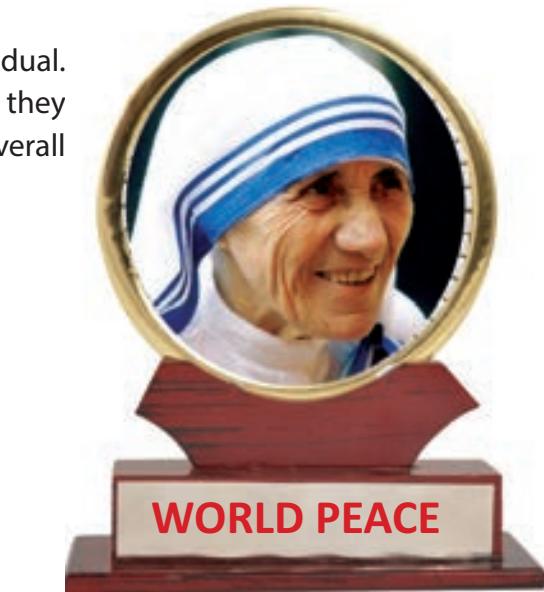
Love, mercy, generosity, honesty, truth, friendship, hospitality, peace, tolerance, faith etc. are personal values. (Fill in the above blanks with the help of these values)

Try these

1. What is your mother tongue? _____
2. Which is our official language? _____
3. Main food of North India is _____
4. _____ is the main food of south India.
5. How many languages do you know? _____

Cultural values

To become well mannered and cultured is an essence of the society.



*Citizenship
is the right to live
in a best way as a civilian.
This includes a person's
participation in Government
activities too.*

Irrespective of language and religion people live together in harmony. This help to maintain cultural values.

- ❖ We are Tamil people and Indians too. We are all human.
- ❖ We must live together as brothers and sisters.

Social values

How should we behave in public places? We can maintain good values in public places by following the points given below.

- ❖ Maintain good relations with people
- ❖ Respect elders
- ❖ Respect nature
- ❖ Be tolerant
- ❖ Maintain friendship



- The king Sibi offered the flesh of his thighs to a wounded dove.
- To give justice to a cow, Manuneethi Cholan killed his son under the wheels of his chariot.
- King Paari offered his chariot to mullai, a climber (Rotana climber).
- King Pehan offered his shawl to a peacock.



1. Grow trees to get -----
2. Millions benefit if they live -----
3. United we ----- divided we fall.

Disciplinary values

Punctuality, involvement, treating every one as equal, doing work on time, holding your morals, doing duties without fail, etc. are disciplinary values.

Circle the good values given above:

P	L	E	Q	A	L	I	T	Y	A	B
U	O	G	X	C	O	N	D	U	C	T
N	Y	E	T	F	V	V	O	L	E	D
C	T	N	M	A	E	O	R	H	R	S
T	U	E	O	E	M	I	S	I	S	E
U	V	R	U	D	T	V	T	G	R	R
A	A	O	P	E	S	E	R	V	I	V
L	B	C	L	F	X	M	K	M	G	I
I	D	I	N	I	Z	E	R	L	H	C
T	E	T	K	L	G	N	F	N	T	E
Y	Y	Y	G	M	O	T	I	O	I	K

CITIZEN

A citizen is a person who is a member of a particular country and enjoys various rights and executes his duties. A sovereign state provides Citizenship to its people. Right to live, right to vote, right to work and reside anywhere in the country are the other rights enjoyed by the citizens.

Constitutional values:

1. Safeguard the public properties.
2. Maintain the unity and integrity of the nation.
3. Develop scientific attitude.
4. Protect the natural resources.



5. Care for the environment.
6. Honour the national symbols.
7. Respect martyrs and their sacrifices.
8. Preserve our culture and heritage.
9. Develop patriotism.



Match the following



Dr. A.P.J. Abdul Kalam



National Flag

Environment

Public property

National symbol

Harmony

Scientific attitude



India Map



Bus



Tree



There are some factors that affect our values:

- Extreme faith in religion leads to communalism.
- Don't break the queue / rules.
- Spitting and dumping garbage anywhere.
- Polluting land and water.

Let us know:

In the name of faith and worship people violate rules and values.

For example:

1. Breaking of white pumpkin (poosanikai) on the roads causes inconvenience to the people.
2. Burning the old objects.
3. Submerging idols in water bodies.
4. Bursting crackers causes pollution.

In the name of modernization polythene, plastics and non-decomposable things are used which causes various problems in the environment.

Good conduct and moral science are nothing but civic values.

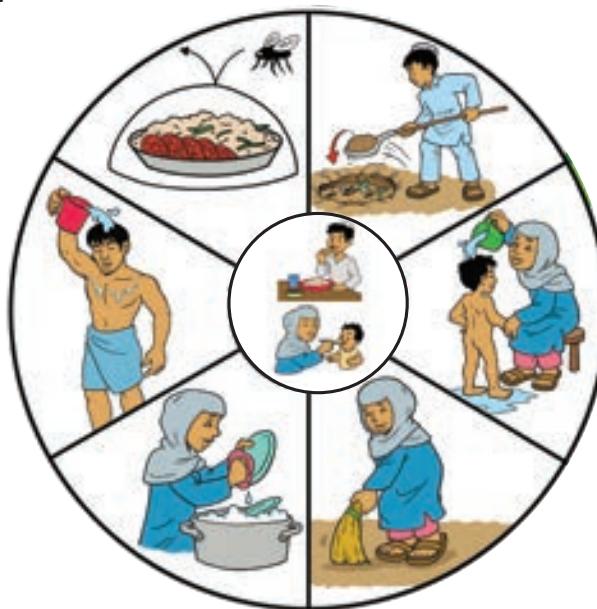
Factors that enriches good values are:

- Literacy
- Creating awareness and interests
- Trying hard till success
- One's own evaluation
- Acceptance
- Self confidence



One main feature of good value is to preserve hygiene. Each person should be taught to be hygienic and follow the routine given below

- Wakeup early in the morning
- Brush your teeth
- Have a bath
- Wear clean clothes
- Wear slippers / shoes
- Trim hair and cut the nails
- Wash hands before and after meals.



Consolidation

- Good values are developed by practicing them.
 - Honesty is the best policy.
 - Good values are classified into four types.
1. Personal values 2. Social values 3. Cultural values 4. Disciplinary values.
- Personal values are love, generosity, mercy etc.
 - Cultural values include indiscriminate society and various cultural features.
 - Mannerism is an important feature of social values.
 - To protect equality is the soul of disciplinary value.

Evaluation

I. Fill in the blanks

1. The word civic means _____ of a nation.
2. The main objective of education is to change person into_____.
3. Man is a _____.
4. Always be _____ in delivering duty.

II. Match the following

- | | |
|----------------------|--------------------|
| 1. Natural character | - Tolerance |
| 2. Culture | - Affecting factor |
| 3. Society | - Punctuality |
| 4. Duty | - Language |
| 5. Unemployment | - Good value |

III. Answer the following in brief

1. Define the term Citizen.
2. List out any five personal values?
3. What are the social values?
4. What are disciplinary values?



IV. Answer in detail.

1. Write any five factors that enrich good values.
2. Write about the constitutional values?

ATMOSPHERE

Unit 4



Ravi

Where do we get the most significant thing that we need?



Devi From the **Biosphere** of our earth.



Ravi

What is Biosphere?



Devi

Biosphere is the combination of lithosphere, hydrosphere and atmosphere.



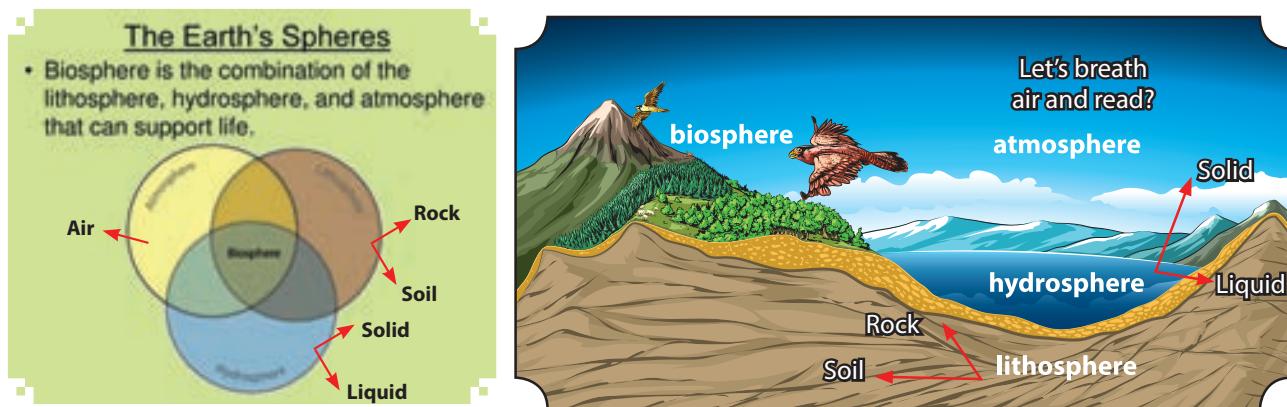
Ravi

What is atmosphere? Shall we study about it?



Lithosphere – Land on Earth
Atmosphere – Air on Earth

Hydrosphere – Water on Earth
Biosphere – Life on Earth



Atmosphere

Atmosphere is the envelope of air around the Earth.

Weather

Weather is a day to day conditions of atmosphere at any place in regard to temperature, pressure, wind, humidity, and rainfall.

- ❖ Is there any poet who does not love the nature?
- ❖ Is there any human who does not enjoy air?

The word 'weather' is often used by us in our day to day life

World Weather Day March – 23

Climate

Climate is the average weather for a given period of time.

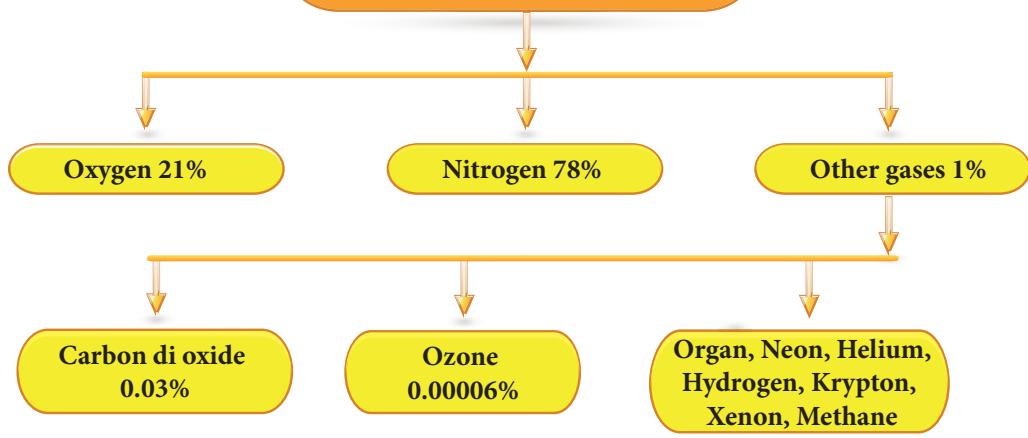
The world climate is derived from the Greek word called 'clima'



Take a ball and throw it up in the air observe the increasing speed of the ball when it comes down.



Gases in the atmosphere





We know that the gravitational force increases near the Earth and decreases as we go higher.

As a result the density of air also differs and can be found in five layers called Troposphere, Stratosphere, Mesosphere, Thermosphere and Exosphere.

All the major changes occur in the Troposphere. The study of weather is called Meteorology.

Solar radiation:

The Earth receives heat energy from the Sun in the form of radiation. It is called solar radiation.

World Environment Day, June-5



World Ozone Day, September-16

Fahrenheit, Celsius, Kelvin are the units to measure temperature

Activity

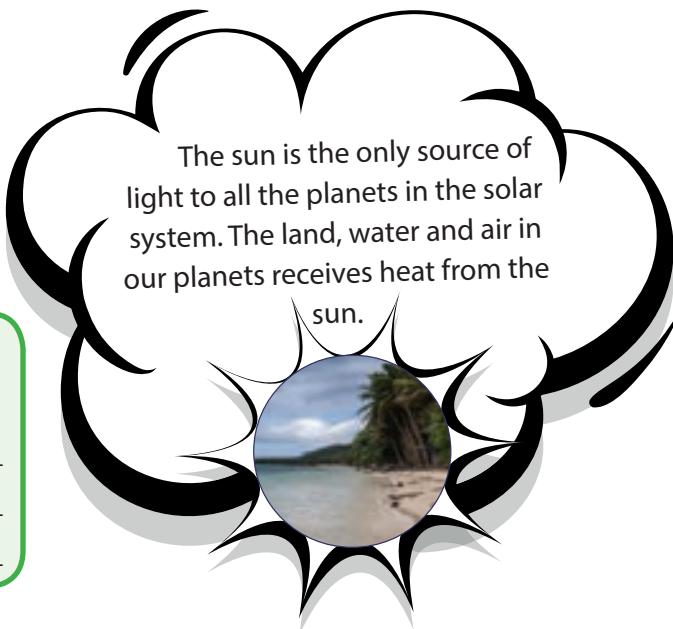


Write the significance of gases

Oxygen

Carbon di oxide

Ozone

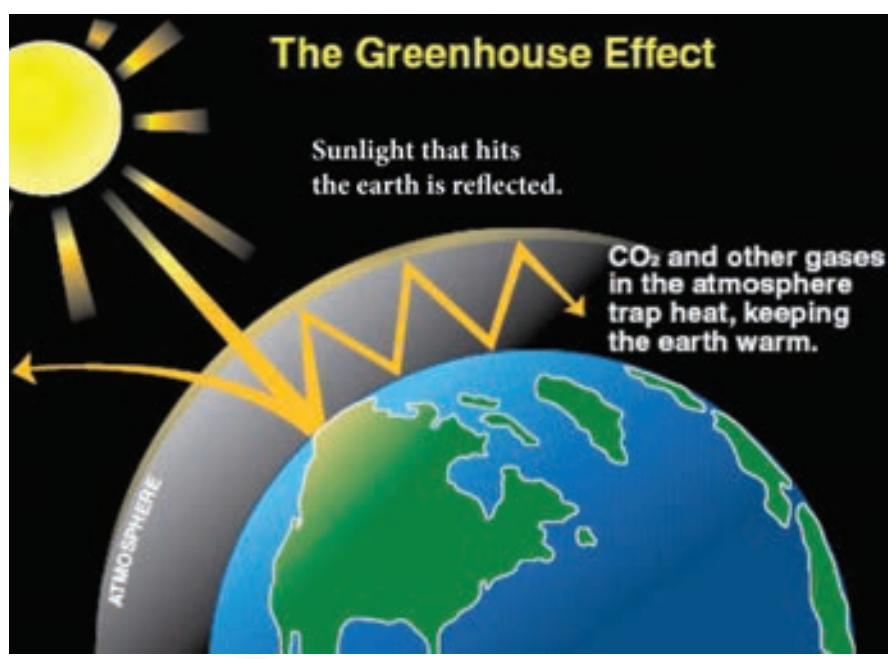


Effects of solar radiation

- ❖ Land – Conduction
- ❖ Water – Convection
- ❖ Atmosphere - Terrestrial radiation

The earth has the capacity to reflect the rays from the sun.

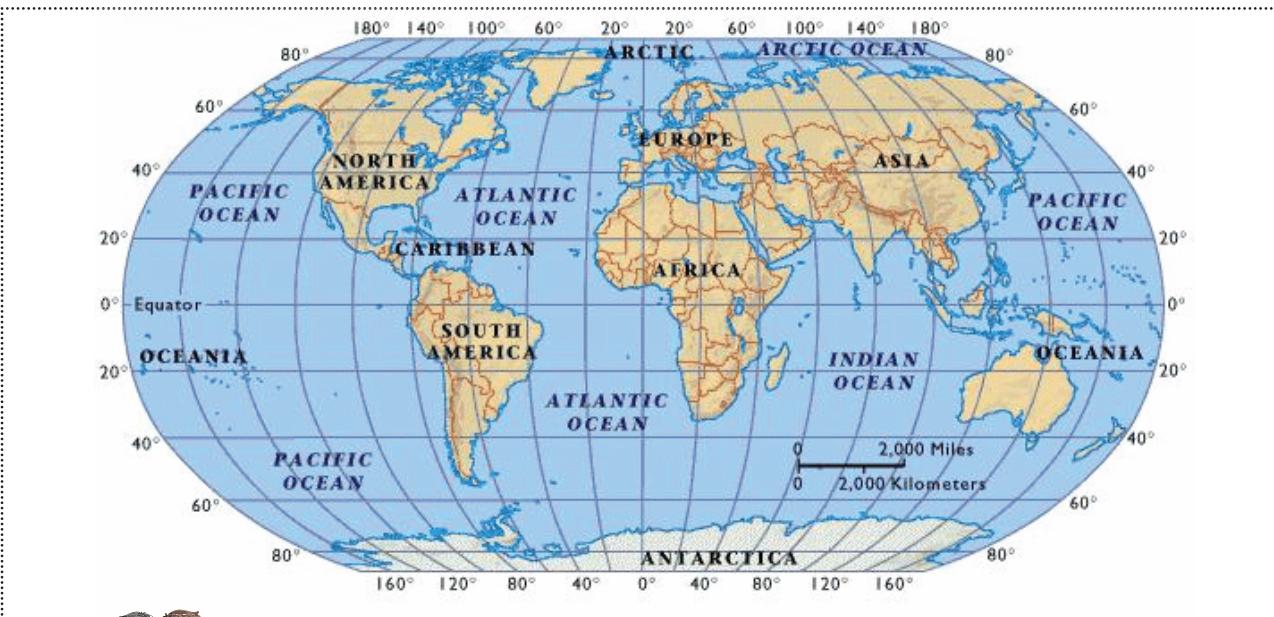
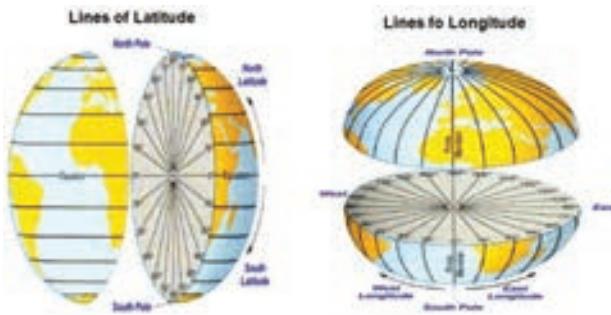
The temperature is not same everywhere. Latitude, altitude, distance from the sea, position of the mountains are some of the factors that determine the temperature of a place.



Find out how it differs

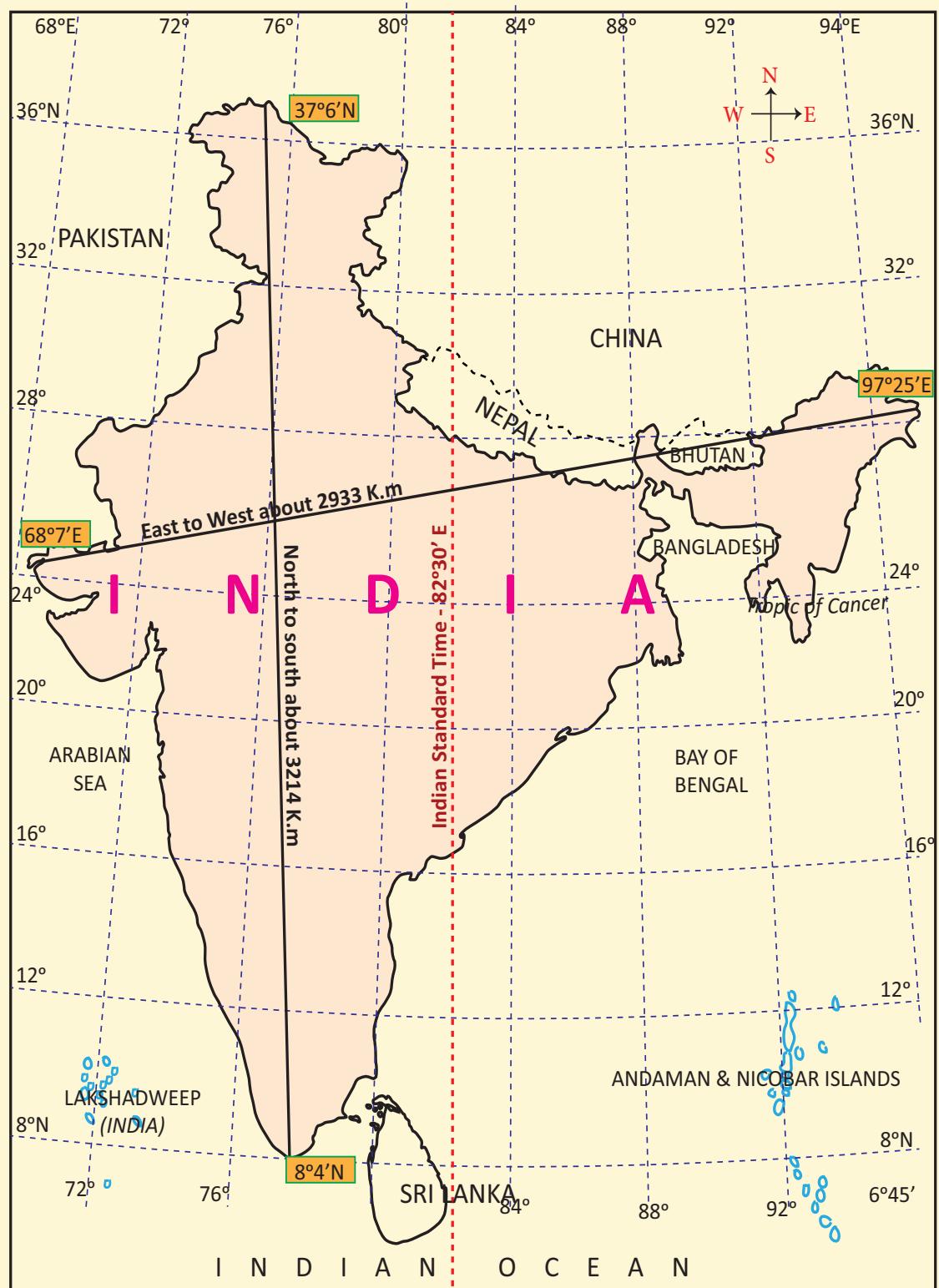
Significance of Latitude and Longitude

- ❖ Latitude and Longitude together make grid.
- ❖ Thus grid helps us to locate a place correctly.



Learn	Latitude/ Parallels	Longitude / Meridians
<p>The imaginary lines drawn horizontally on the Earth surface from west to east are called latitudes. There are 180 latitudes or parallel circles drawn around the earth surface both in Northern and Southern hemispheres respectively.</p> <p>Some important latitude are</p> <ol style="list-style-type: none"> (1) Equator - 0° (2) Tropic of cancer - $23\frac{1}{2}^\circ$ North (3) Tropic of Capricorn - $23\frac{1}{2}^\circ$ South (4) Arctic Circle - $66\frac{1}{2}^\circ$ North (5) Antarctic Circle - $66\frac{1}{2}^\circ$ South (6) North Pole and South Pole end at a point of - 90° North and 90° South (7) Equators is the great circle at the centre of the earth 	<ol style="list-style-type: none"> (1) These are the semi circles extended from North Pole to South Pole. (2) The 0° longitude is called prime meridian. It passes through a place called Greenwich in London, England. (3) The earth rotates on its axis once in 24 hours. There are 360 longitudes on the Earth. Sunlight takes 4 minutes time to move 1°. (4) 82.30° East longitude is the Indian Standard Time (IST) that passes through Allahabad in India. (5) It is 5.30 hours ahead of Greenwich Mean Time (GMT). (6) $82.30^\circ \times 4' = \text{_____}?$ 	

Location of India

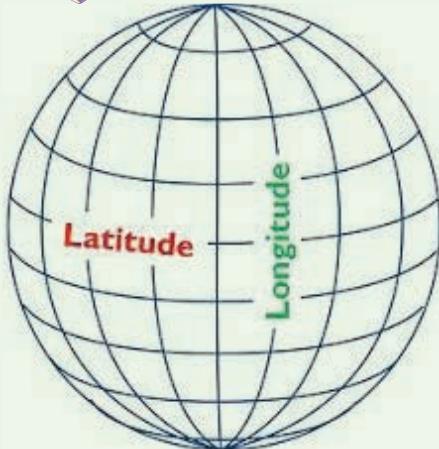


Not to Scale

Activity



In which latitude and longitude is your school located?



Latitude _____

Longitude _____

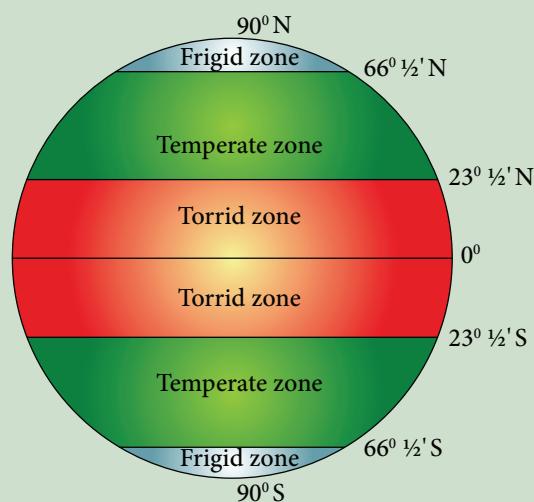
Heat Zones of the Earth



Why does the heat vary from morning to evening?

It is because of the sun's rays.

The land is divided into various heat zones according to the fall of sun's rays on the surface of the Earth.



The zone between Tropic of Cancer and Tropic of Capricorn is called Tropical or Torrid zone, where the sun's rays fall vertically.

The zone between $23\frac{1}{2}^{\circ}$ N to $66\frac{1}{2}^{\circ}$ N latitude and $23\frac{1}{2}^{\circ}$ S to $66\frac{1}{2}^{\circ}$ S latitude which receive slanting rays of the sun are called Temperate zone. The zones which do not Get Sun's rays are called Frigid zones.

Himalayas

The highest mountain in the world is Himalayas.

Apart from the famous mountain peaks like Mount Everest, K2, Kanchenjunga there are other peaks like Nanga Parbat, Annapurna, Dhaulagiri. Mount Everest is the highest peak in the world. It rises to a height of 8,848m above sea level.



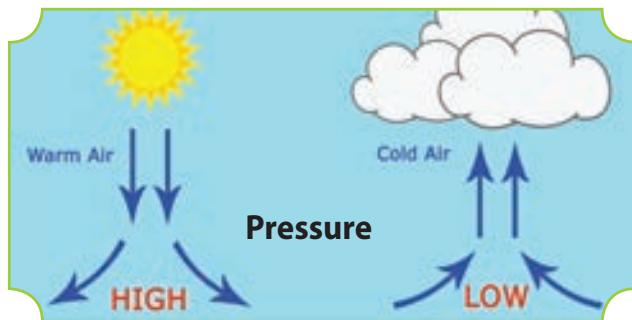
Doddabetta

Doddabetta is the highest peak in the Nilgiri ranges. It rises to a height of 2,637 metres. There is a reserved forest area around the peak. It is 9 km from Ooty, on the Ooty-Kotagiri Road in the Nilgiris district of Tamil Nadu, India.

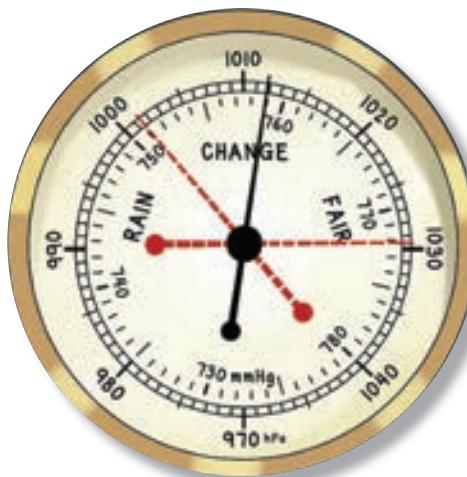


Pressure

When the temperature increases, pressure decreases and when the temperature decreases, pressure increases.



Barometer used for measuring the pressure.



The average pressure of ocean is 1013 mlb.

Wind

The air which moves horizontally from high pressure to low pressure area is called wind.



How do you find the direction and speed of the wind?

Devi: The national flag which was hoisted in the morning is flying from West to East.

Ravi: My toy fan was swirling very fast when I showed it outside.



Air never moves in one direction. It differs from place to place and time to time. This is due to the rotation of the earth.



The instrument used to measure the direction of wind is wind vane.



The instrument used to measure the speed of the wind is Anemometer.

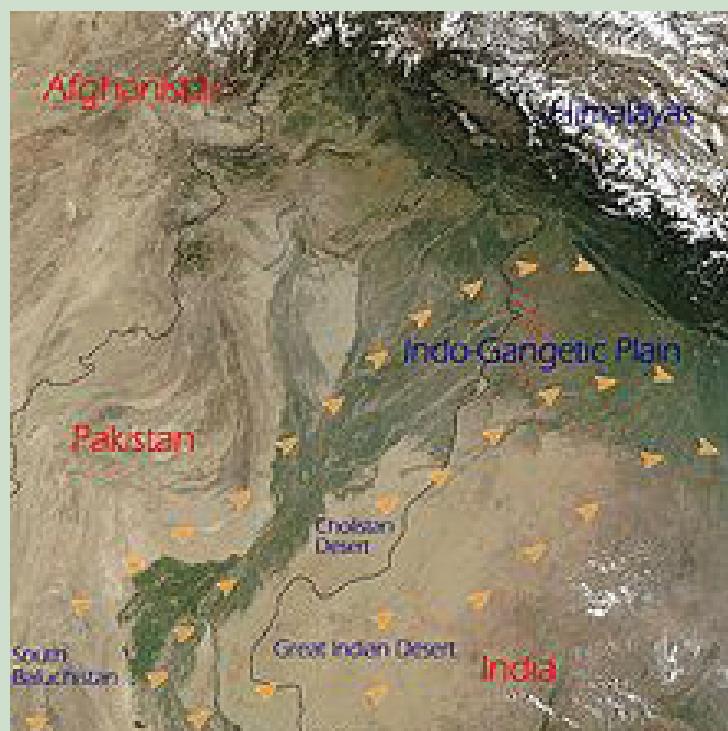
Wind Energy

Wind energy is a form of renewable energy. Wind turbines converts the kinetic energy into mechanical energy. A generator can convert mechanical energy into electricity.



Loo Wind

The 'Loo' is a strong, dusty, gusty, hot and dry summer wind from the west which blows over of North Western India. It is especially strong in the months of May and June. Due to its very high temperature, exposure to it often leads to fatal heatstrokes.



Different types of wind

Planetary wind:

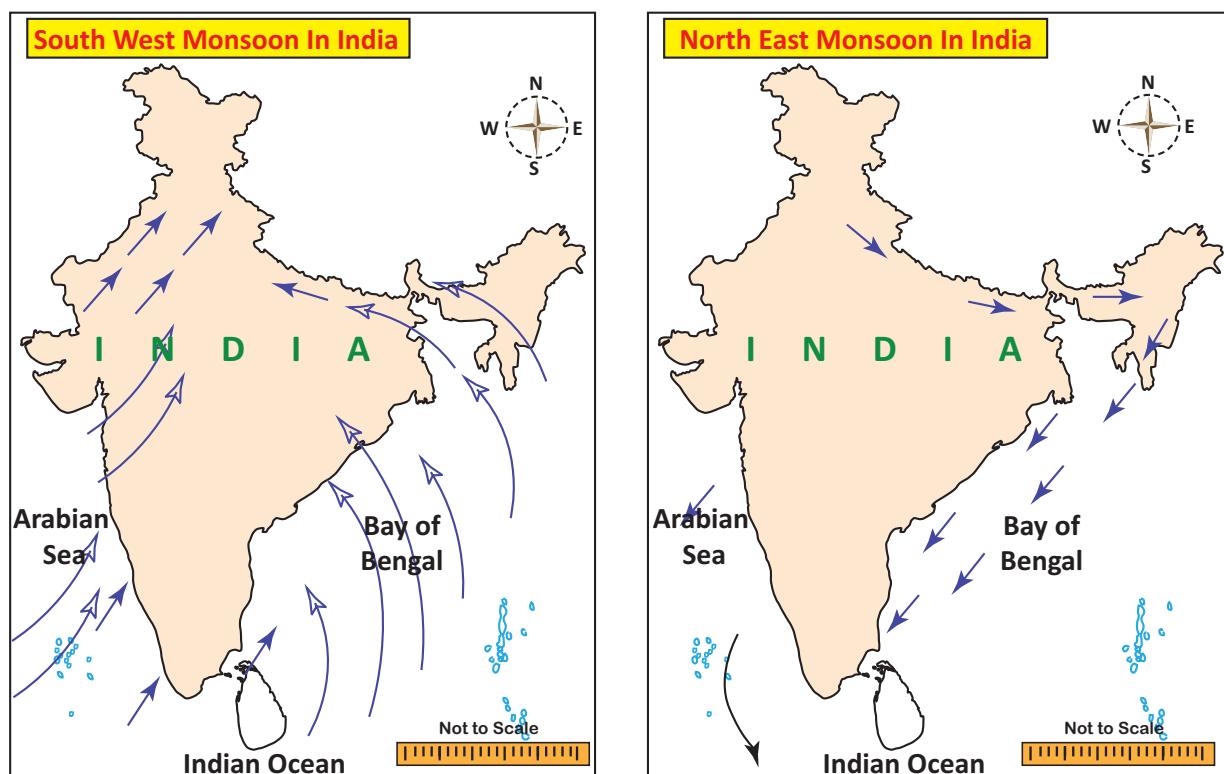
These winds move in the same direction throughout the year with the rotation of the Earth.

Monsoon winds:

The word monsoon is derived from the Arabic term 'mausim' which means season.

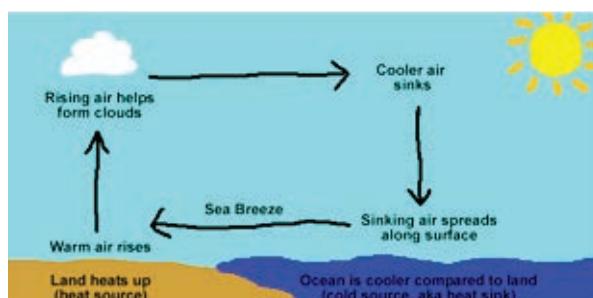
Types:

- ❖ South West monsoon winds
- ❖ North East monsoon winds



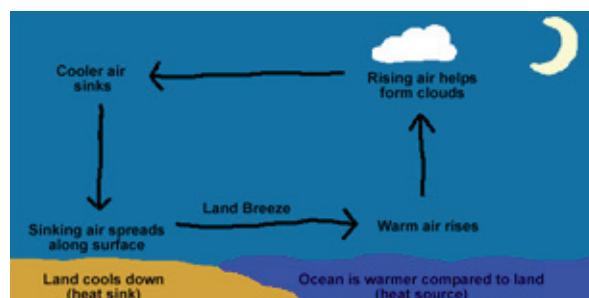
Sea breeze:

It blows from sea to land during the evening.



Land Breeze:

It blows from land to sea in the morning.



Local wind:

It affects the weather.

- ❖ Warm local wind – North West India
- ❖ Cool local wind – North East India



Jet streams

Air currents in the upper layers of atmosphere is known as Jet streams.

It could determine the arrival and departure of monsoon winds in India.

Hurricane / cyclone

Hurricane changes its position and direction with time to time.

The speed of winds also changes with time. It gives very heavy rainfall.



Types of clouds

The clouds are composed of water vapour in the air. The clouds are divided into four categories on the basis of appearance and height. They are

1. Cirrus cloud
2. Stratus cloud
3. Cumulus cloud
4. Nimbus cloud

1. Cirrus cloud

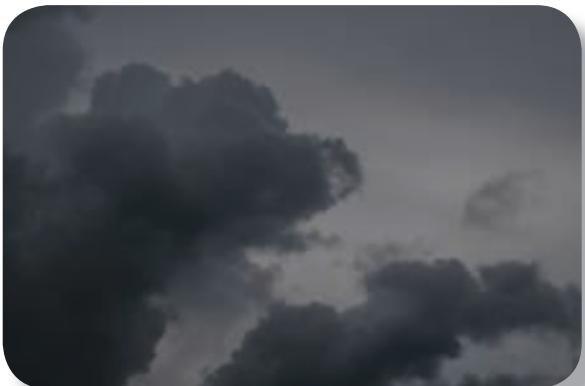
These clouds appear like a silver grey fish at a very high altitude in the sky. These may not give rain.



3. Cumulus cloud

It looks like a burst cotton and gives convectional rain fall.

These clouds are associated with rainfall lightning and thunder.



2. Stratus cloud

They are grey in colour and are spreadout. They may give small shower.



4. Nimbus cloud

It appears as dark or grey in color. It gives heavy rainfall. It is called vertical or rain clouds.

Look at the sky: write

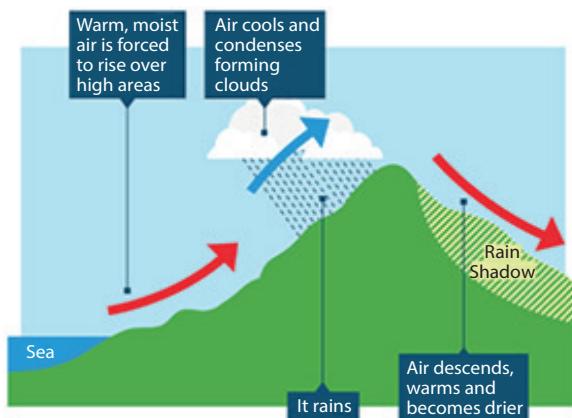
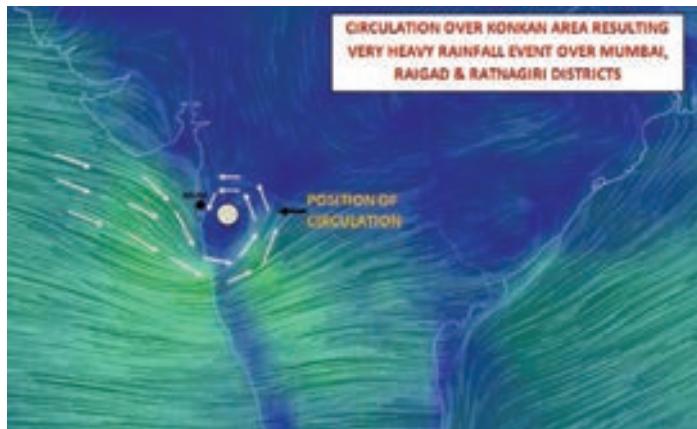
How does the cloud appear today ? _____

What would be the consequences ? _____

Rain fall

Condensation of the wind causes rain fall

Rain water must be saved and not be wasted.



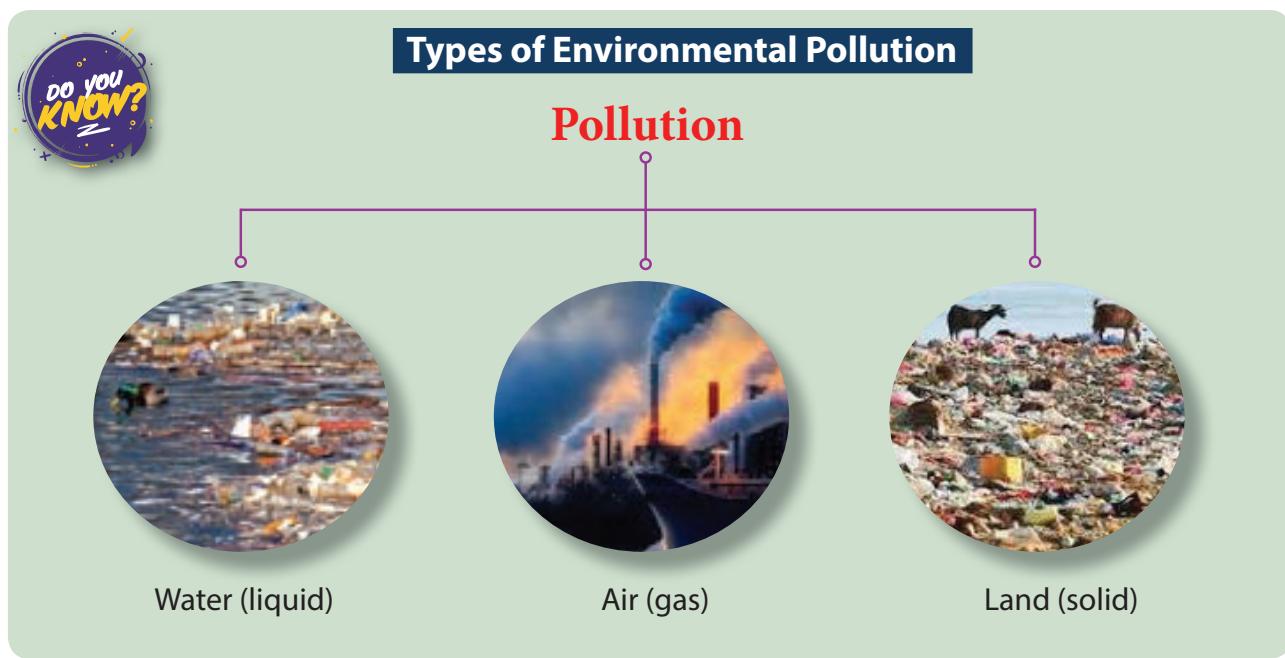
Convectional Rain fall

During summer solar insolation takes place in land. Water evaporates from lakes, ponds and vegetations. Due to this a heavy rainfall with lightning and thunder occurs in the evening for a short period.

Environment

Natural Environment

The natural materials and living things, including sunlight are called environment.



Rain water harvesting

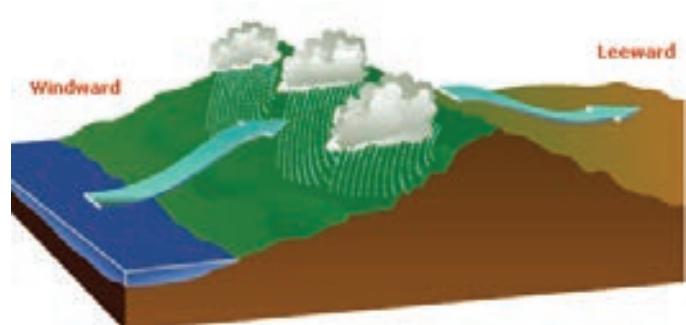
Rain water harvesting is a technique of collection and storage of rainwater into natural reservoirs or tanks, or the infiltration of surface water into subsurface aquifers (before it is lost as surface runoff). One method of rainwater harvesting is rooftop harvesting.



Convey this message to society

Orographic Rain fall

When the moisture laden winds from the sea climb the hill slopes, it becomes cool and cause heavy rainfall. The opposite side of the mountain is called Leeward side. It receives very little rainfall.



Cyclonic rainfall

The warm air from the hot area is heated and moves upwards. Hence a low pressure area is developed and it attracts air from high pressure area. Owing to Earth's rotation a circular motion of winds develop. It gets cooled and brings heavy rainfall.



Thunder – Lightning

How do we know that the thunder is going to hit?

When the clouds of positive and negative (+,-) charge hit each other, lightning and thunder are produced. Light travels faster than sound, therefore thunder follows lightning. When all the characteristics together activate at the same time it is called weather factory.



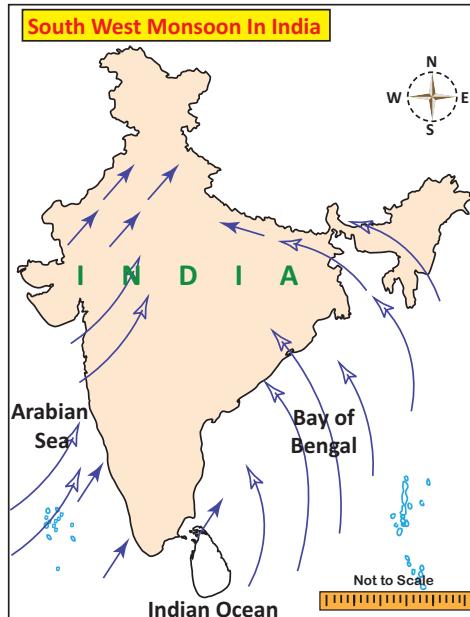
Evaluation

I. Choose the best answer.

1. The atmosphere is divided into _____ layers.
a) four b) five
c) six d) seven
2. The carbon dioxide is _____ in the atmosphere.
a) 0.03% b) 3%
c) 1% d) 0.00003%
3. The world weather day
a) March-20 b) March -21
c) March-22 d) March-23
4. The Indian Standard Meridian passes through the city of _____.
a) Allahabad b) Ahmedabad
c) Hyderabad d) Secunderbad
5. Zone located in between Tropic of Cancer and Tropic of Capricorn is _____ zone.
a) Temperate b) Subtropical
c) Cold d) Torrid
6. _____ is used to measure pressure in the air.
a) Barometer b) Thermometer
c) Anemometer d) Wind vane



7.



The above picture shows the direction of _____.

- a) South west monsoon rain
- b) North east monsoon rain
- c) Cyclonic rain d) Orographic rain.
8. Monsoon is derived from the _____ word.
a) Greek b) Arabian
c) English d) Latin
9. Vertical cloud is called _____.
a) Cirrus cloud b) Stratus clouds
c) Cumulus clouds d) Nimbus clouds.

10. _____ clouds give convectional rainfall.

- a) Cirrus
- b) Stratus
- c) Cumulus
- d) Nimbus

11. Which of the following statement(s) is/are.

Statement I - The instrument used to measure wind direction in wind vane.

Statement II - The speed of light travels faster than sound.

- a) I & II
- b) I only
- c) II only
- d) None

II. Fill in the blanks.

1. The study about the weather is called _____.
2. The instrument used to measure heat _____.
3. The imaginary lines drawn parallel to the surface of the earth is _____.
4. _____ are rain clouds.

III. Match the following.

- | | | |
|-------------------|---|------------------|
| a) Cirrus clouds | - | Grey sheet |
| b) Stratus clouds | - | Storm cloud |
| c) Cumulus clouds | - | do not give rain |
| d) Nimbus clouds | - | Cotton |

IV. True/ False.

1. Latitudes and longitudes are used to calculate time zones. T/F
2. Latitudes and Longitudes help us to locate a country. T/F
3. Atmosphere gets heated by conduction than solar radiation. T/F
4. The main reason for the change of wind direction is Earth's rotation. T/F
5. Cyclone moves in anti-clock-wise direction. T/F

V. Write short note.

1. What is weather?
2. What are the atmospheric layers?
3. Write a short note on the Nimbus clouds.
4. Illustrate orographic rain fall with a diagram.

VI. Answer in detail.

1. Write about Jet Streams?
2. Explain the types of winds.
3. Write about 'weather factory'.

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