

Social Science

Part - 2

Standard V

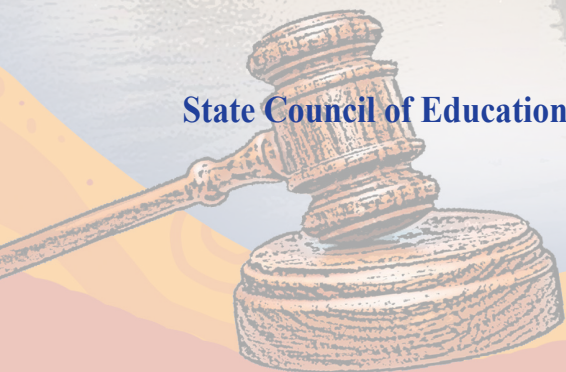


GOVERNMENT OF KERALA
DEPARTMENT OF GENERAL EDUCATION

Prepared by

State Council of Educational Research and Training (SCERT) Kerala

2024



THE NATIONAL ANTHEM

Jana-gana-mana-adhinayaka, jaya he
Bharata-bhagya-vidhata.
Punjab-Sindh-Gujarat-Maratha
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga
Uchchala-Jaladhi-taranga.
Tava shubha name jage,
Tava shubha asisa mage,
Gahe tava jaya gatha,
Jana-gana-mangala-dayaka jaya he
Bharata-bhagya-vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya, jaya he!

PLEDGE

India is my country. All Indians are my brothers and sisters.

I love my country, and I am proud of its rich and varied heritage. I shall always strive to be worthy of it.

I shall give respect to my parents, teachers and all elders and treat everyone with courtesy.

To my country and my people, I pledge my devotion. In their well-being and prosperity alone lies my happiness.



Social Science

Prepared by

State Council of Educational Research and Training (SCERT) Kerala

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Dear friends,

This is the second part of Social Science Text Book of Class V. The lesson 'Transport and Communication Systems' is sufficient to understand historically the origin and development of transportation and communication systems and to explain the place of these in determining the trends of the present day. The lesson 'Know Our Land' deals with the need to preserve the physiography, geographical features and the natural resources in Kerala.

The lesson 'Towards Equality' enables us to attain a basic understanding of the transformation of our society from the Socio-economic inequality to equality.

Wonders in the sky and earthly phenomena are dealt with in the lesson 'Wonders in the Sky and Splendours on the Earth.' The lesson 'The Law and the Society' points to the need to follow laws in social life. It is assured that this book is of great help to have a deep understanding of the society and to imbibe human values.

Dr. Jayaprakash R. K.

Director SCERT



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Some symbols are used in this book for the ease of study

 Extended reading (not subject to assessment)	 Questions
 Activity	 Extended activities
 Let's discuss	 Let's colour
 Picture collection	 Let's sing
 Collage	 Let's play
 Let's read	 Let's write
 Let's make	 Placard making
 Role play - mime	 Let's draw
 ICT	

THE CONSTITUTION OF INDIA

PREAMBLE

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a ¹**[SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC]** and to secure to all its citizens :

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and to promote among them all

FRATERNITY assuring the dignity of the individual and the ²[unity and integrity of the Nation];

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949 do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**

-
1. Subs. by the Constitution (Forty-second Amendment) Act, 1976, Sec.2, for "Sovereign Democratic Republic" (w.e.f. 3.1.1977)
 2. Subs. by the Constitution (Forty-second Amendment) Act, 1976, Sec.2, for "Unity of the Nation" (w.e.f. 3.1.1977)

7

Transport and Communication Systems



Look at the news collage cited.

How could the heart be quickly transported to Kochi from Thiruvananthapuram?

-
-

In what ways would the coastal people have been alerted?

-
-

How were the flood relief activities coordinated quickly?

All these instances demonstrate the relevance of transport and communication systems in our day to day life.

Transport and communication systems are the means of overcoming the physical distance among people. This is an effective system to connect people, considering the distance between them. The transportation system helps to move people or goods from one place to another. Communication involves transferring ideas or messages from one source to another.

Transportation



This is a page from Neenu's postal stamp album. These are the stamps issued by the Indian Postal Department on the evolution of the transport system over the years. Find out the vehicles that are featured on the stamps.

Are the vehicles seen on the stamps in use nowadays?

You know that man is the only creature that uses vehicles. Earlier, instead of vehicles, animals like elephant, horse, bull and camel were used for transportation. For what purposes do humans use vehicles today?

- for travelling
- to transport goods from one place to another
-
-

Vehicle

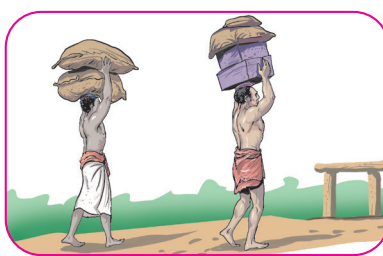
The term vehicle (In many Indian languages: vaahanam) means "a device to carry." Vehicles are mechanical - non-mechanical systems used for the movement of people and the transportation of goods.



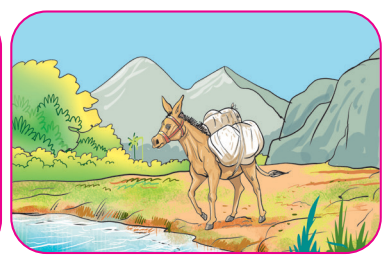
How might humans have met these needs before the invention of vehicles?



- on foot



- by carrying on the head



- using animals

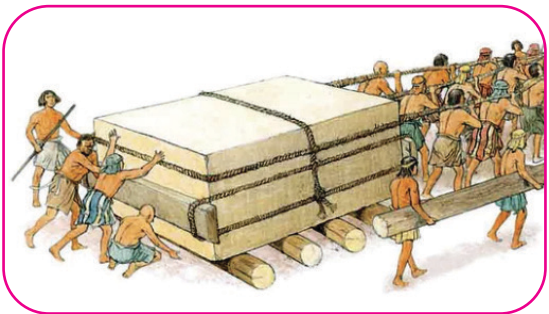
What were the limitations of these methods?

- the growing demand could not be met
-
-

Humans developed vehicles to overcome the limitations mentioned above. The invention of wheels became the basis of changes in the field of transport.

From Wheel to Vehicle

The invention of the wheel, which changed the lives of human beings, did not happen in a single day. Realising that rolling objects on a rounded wooden log would make it easier to carry, people made wheels by making the logs smaller and smaller.



The picture shows the parts of a 4500 year old wheel found on the shores of Lake Zurich in Switzerland in 1976. Part of this wheel made of maple planks, is preserved in the Swiss National Museum.



Mesopotamia



The Mesopotamians are believed to have made wheels about 5000 years ago. The wheels they made were of three thick planks joined together with copper nails pierced into leather straps. The Egyptians and Romans improved the wheels further. The Mesopotamian culture has flourished in the regions in and around the present-day Iraq. This area lies between the rivers Euphrates and Tigris. The word 'Mesopotamia' means the 'land between two rivers.'

Look at the pictures.



The images given show how wheels were used for transportation in the past. What information can be obtained from these?

- wheeled carts were pulled by humans
- wheeled carts were pulled using animals
-
-

Earlier, both human-drawn and animal-drawn wheeled carts were used for various purposes of transportation. Such wheeled carts were used to transport goods and for moving humans from one place to another. Later, fuel-powered machines were invented. With the advent of mechanised

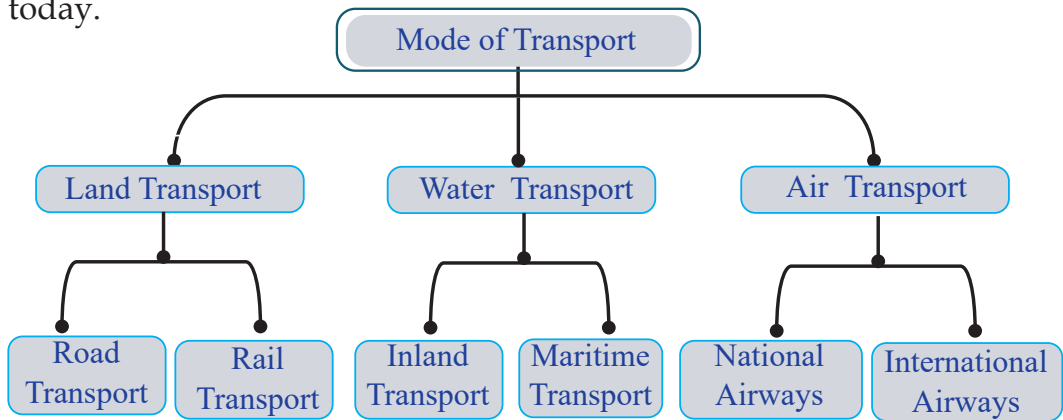
vehicles, there have been big changes in the field of transportation. Gradually, different modes of transport came into practice to move goods and people from one place to another.

Draw pictures showing the progress of transportation from the wheel to the vehicle and conduct an exhibition in the class.



Mode of Transport

Observe the flowchart showing the main modes of transport we use today.



Land Transport

Land transport is the mode of transport on land. Identify and write down the major modes of land transport from the flowchart.

.....

.....

Road Transport

Don't we need roads for the smooth movement of vehicles? Observe the images given below regarding the formation of roads.





Concrete road



Tarred road

Single-track paths and mud paths were used for transportation in ancient times. Over the passage of time, stone-paved paths, concrete roads, and tarred roads came into existence.



Macadam Roads

Scottish engineer J. L. Mc Adam pioneered the modern type of road construction around 1820. The roads constructed using crushed stones levelled by road roller machines, are known as ‘Macadam Roads.’

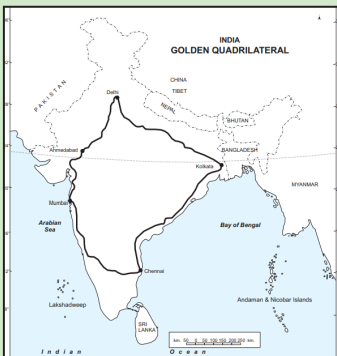
Our country has a wide network of roads consisting of rural roads, state highways, national highways and express highways. India has the second-largest network of roads in the world. Road transport plays an important role in ensuring the socio-economic growth of a country.



Major Highways in India

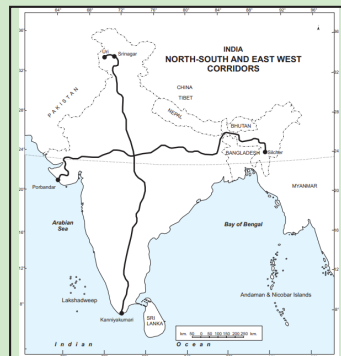
Golden Quadrilateral

It is a network of national highways that connect India's major industrial-agricultural hubs. This route passes through Delhi, Kolkata, Mumbai, Chennai and covers 12 states.



North-South and East-West Corridors

The North-South Corridor connects Srinagar with Kanyakumari and the East-West Corridor connects Silchar with Porbandar.





Observe the pictures showing the evolution of wheeled vehicles. Discuss and prepare notes regarding the changes in road transport.

Collect pictures of different vehicles and roads - old and new. Make an album and display in the class.

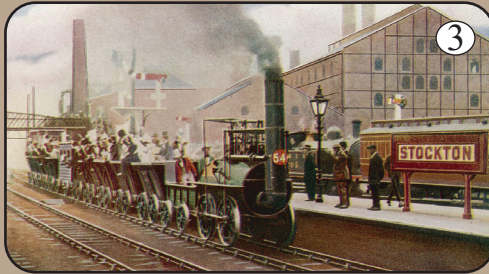
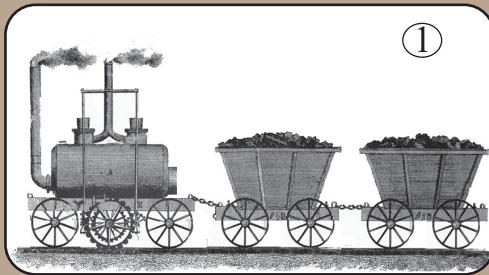
Advantages of Road Transport

- relatively less expensive
- accessible to all sections of people
- best suited for short trips
-
-

Rail Transport

The sight of a train arouses the curiosity of people of all age groups. It is the fastest mode of transport on land. The railway system was launched first in Britain. The locomotive train came into being with the invention of steam engine. In 1825, George Stephenson built the first locomotive train engine in Britain. Coal was used as fuel to run it. Later, due to technological advancements, diesel engines and electric engines came into existence.

In 1825, the world's first railway track was built connecting the cities of Stockton and Darlington in England. The world's rail transport commenced by running the locomotive, 'Stephenson Rocket' built by George Stephenson, on this track.



Pictures of trains in different eras



Observe the pictures and write the characteristics of trains of different eras.

1. the train carrying coal
2.
3.
4.
5.
6. bullet train

It was the British who started rail transport in India. They transported raw materials and natural resources from India to Europe by sea. Rail transport in India was started as a means to transport these goods and natural resources to the ports.



India's first railway, Bombay (Now Mumbai) to Tane 1853



First railway in Kerala from Beypur to Tirur – 1861

The railways is the mode of transport that people mainly rely on for their daily travel, transportation of goods and leisure trips. A broad and extensive railway network exists in India. India is one of the countries with the longest railway system in the world. The metro rail system has been launched in major cities of India to improve transport facilities and reduce air pollution.

Metro Rail



Metro rail was started to solve the traffic issues in big cities and reduce air pollution. Metro rail system exists in all the major cities of India including Kolkata, Delhi, Mumbai, Bengaluru, Chennai and Kochi.

Advantages of Rail Transport

- cheapest mode of transport to carry more people
- helps to move bulk amount of goods
- plays an important role in the growth of economic system
-



Observe the transport map of Kerala given at the end of this chapter (Page 131). List out the districts without rail transport in your notebook.

Water Transport

Observe the pictures.



For what purposes do humans depend on water transport?

- travel
-

-
-



What could have been the circumstances that led humans to discover the mode of water transport?

The situations in which humans and animals were not able to cross water bodies might have led to the concept of water transport. Humans who used rafts and logs made canoes by hollowing out the pith of logs by burning them. Later, the invention of appropriate tools made canoe making easy. Gradually, various



Canoe of the ancient period

types of boats and sailing ships were built. This further improved water transport.



Which are the water transport vehicles you have travelled on?

Make models of various water transport vehicles using available eco-friendly materials and demonstrate them in the class.



Mesopotamian people used watercraft such as ships for trade. They built boats of various sizes that were propelled by oars and long poles. These were used for goods transport and navigation.

Remnants of dockyards have been found at Lothal in Gujarat, a site of the Indus Valley Civilization. The insignia of boat were traced on seals excavated from Lothal and Mesopotamian seals found at Harappa. From this, it is evident that water transport existed then.



Ship building centre, Lothal

Water transport can be divided into two - inland and maritime. Before the advent of railways, inland water transport was the main mode of transport in India. Inland water transport developed in areas where there were plenty of rivers and backwaters. Later, canals were constructed for this purpose.

Inland Waterways of Kerala

National Waterway No-3 from Kollam to Kottapuram and Connolly Canal from Kozhikode to Kodungallur are the two important inland waterways in Kerala. Until the railway system got strengthened, goods transport was mainly dependant on these waterways. Nowadays, inland waterways attract considerable number of tourists.



Europeans gave importance to water transport to improve trade with India. Earlier, Europeans built canals as a means to transport coal to cities. Gradually, such canals began to be used mainly for water transport. Connolly Canal, Parvati Puthanar, etc. are some of the canals built in Kerala. Alappuzha, known as the Venice of the East, has many canals.

Connolly Canal



H.V. Connolly, the District Collector of Malabar during the British rule proposed a broad waterway from Kozhikode to Kodungallur in 1845. Later, canals were built connecting the rivers up to Kodungallur including Ponnani and Chavakkad regions. This waterway, thereafter was known as the Connolly Canal.



Parvati Puthanar



Parvati Puthanar is a canal connecting Veli - Kadinamkulam backwaters in Thiruvananthapuram district.

In the past, international travel and goods transport were mostly dependant on maritime transport. The invention of sailing ships, navigated with the help of wind has improved maritime transport. That marked an increase in the number of voyages to other countries. With the invention of steam engine, steam-powered sailing ships were built and sea voyages became safer. Later, fuel-powered ships came into being.



Sail Ship



Ship

Maritime transport is possible through coastal waterways and international waterways. Coastal waterways transport goods and passengers between ports located on the coasts of the country. But, goods and passengers are transported between ports of other countries through international waterways. Imports and exports take place mainly through this waterway.

What are the advantages of water transport?

- relatively less expensive
- a low level of pollution
-
-



A port (harbour) is a place where a ship docks on the seashore. Which are the major ports in Kerala? Find them out by observing the Transport Map at the end of the chapter (Page 131).



Prepare a chart showing the means and advantages of water transport.

Air Transport



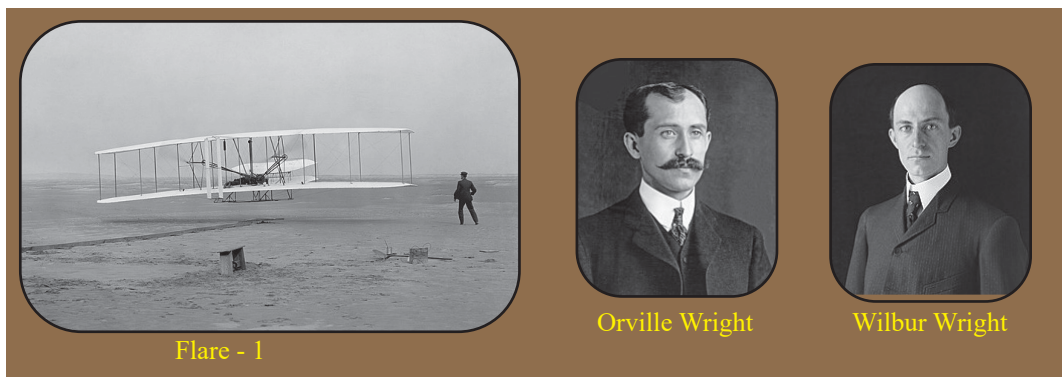
Jacques Montgolfier was the owner of a paper factory in France. Jacques's wife lit a fire under the hung wet clothes to dry them quickly. He was surprised to see the clothes that laid out to dry were flying up in the sky. The sight made Jacques think a lot. He had no rest for the next few days. Together with his brother Joseph Montgolfier, Jacques made a giant balloon. The hot air-filled balloon rose up in the air surprising them. After that, they placed a basket in the lower part of the balloon, and the chickens and ducks from his house were made to fly. Then Jacques and Joseph flew over the city of Paris in the balloon vehicle for half an hour.



Hope you read the note. This incident of 1783 marked the beginning of aviation. Balloons filled with hot air were first used by humans for aerial travel. Later, airships were built by filling large balloons with gases of low density. Then parachutes were invented to help descend at a lower speed. But none of these could be conveniently controlled and used by humans.



An airplane, which can be said to be the first type of today's airplane, was built by the American brothers Orville Wright and Wilbur Wright (Wright brothers). The name of the plane they built was Flare-1. Flare-1 took off on December 17, 1903, from North Carolina, USA.



In due course, humans were able to build helicopters, jet planes, passenger planes, and supersonic aircraft.

Air travel is a very useful mode of travel for long distance within and outside the country. It is also the fastest mode of transport at present. The air transport system is also widely used for military purposes.

Air Transport in India



Air transport in India started with the dawn of the 20th century. In 1911 a plane carrying letters took off from Allahabad to Naini which is only 10 km away, marked the beginning of Air transport in India. In 1912, the first international flight to and from India was operated from London to Karachi and from there to Delhi. India's first commercial airline, Tata Airlines, operated its first service from Karachi to Mumbai in 1932. India's first airport was established at Juhu, Mumbai. Today, India has become one of the countries with the most extensive air transport network in the world.



Observe the transport map of Kerala at the end of this chapter (Page 131) and write the names of districts where the international airports of Kerala are located.

Advantages of Air Transport

- fastest mode of transport
- connects countries of different continents and makes the earth a global village
- used for national defence services
-

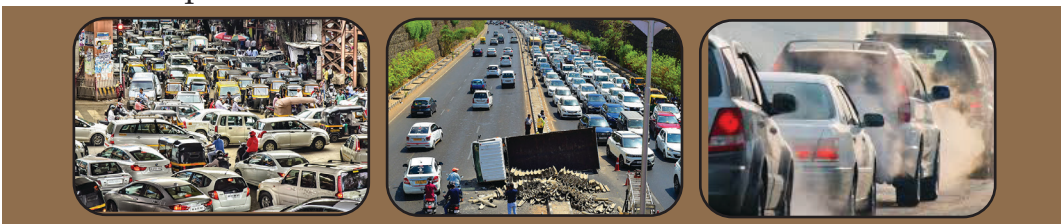
Air pollution: Schools and colleges closed in Delhi



New Delhi: As air pollution continues to worsen, schools and colleges in Delhi will remain closed until further notice. The ban on construction activities has also been extended. The government has advised employees to avoid private vehicles and use public transport system.

Haven't you noticed this news? Why have the employees been advised to avoid private vehicles and use public transport systems?

Observe the pictures.



What are the consequences of an increased number of vehicles?

- increased traffic congestion
- air pollution
- noise pollution
- health problems
- high traffic accidents
- limited parking space reduces safety for pedestrians and bicyclists.
-
-



Organise a discussion in the class and prepare notes on the need to use public transport system.

Communication

Communication is the transfer of information from one place or one person to another place/person. Since ancient times, humans have developed different means of communication according to their needs.

How do we communicate?

- through conversation
- through writing
- over the phone

How could one person communicate an idea to another at a time when there were no languages, symbols, or writing?

- through gestures
- by making specific sounds
-
-



Act out a mime about communication in various situations (hunting, fishing, trading, travel) at a time when there was no language, symbols, or writing.

Early humans expressed their ideas through body and facial movements, and sounds. Later they used fire and smoke as signs to communicate ideas to those in distant places. Historians opine that humans started using symbols about 30,000 years ago.

Paintings on the walls of caves in ancient times are examples of communication during that era. Symbols and pictures were used to express ideas. Later they developed scripts and writing.

It is assumed that humans developed writing about 5000 years ago. The Sumerians were the first to develop writing. This script became known as Cuneiform. These were written on clay tablets. Likewise, Hieroglyphics is another script formulated in Egypt.

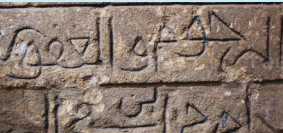


Cuneiform script



Hieroglyphics script

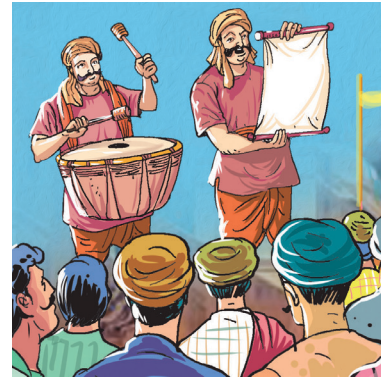
Given below are scripts used in different eras to convey news and messages.

Image	The surface used to write	The writing device
	Stone	Sharp stone
	Copper plate	Metal stylus
	Palm leaves	Stylus/Narayam

What are the means used to convey news and messages nowadays?

-
-
-
-
-

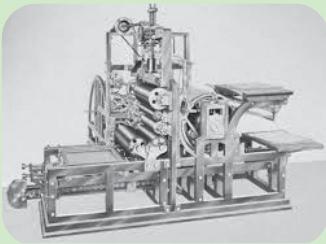
In the early days, horses, dogs and birds were used to carry news and messages from one place to another. Image depicted here is one of the means of communication used by kings in ancient times to convey news and messages to the public. With the invention of the printing press, the transmission of news and messages became easier.



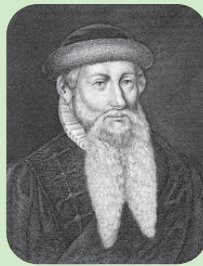
Royal proclamations - portrait



Printing technology was invented by the Chinese. In the early days, printing presses were operated using wooden blocks. Later, Gutenberg, a German, invented the iron printing press. With the advent of printing, ideas, and news began to spread quickly.



Gutenberg's printing press



Gutenberg



Samkshepa Vedartha
(The first book printed entirely in Malayalam)

The arrival of the postal system made communication faster. Progress in transport facilities also influenced communication. The postal system became widely used to convey ideas, messages and news. Advances in science and technology have paved the way for giant leaps in communication. The invention of the Internet and related services has brought revolutionary changes in the field of communication.



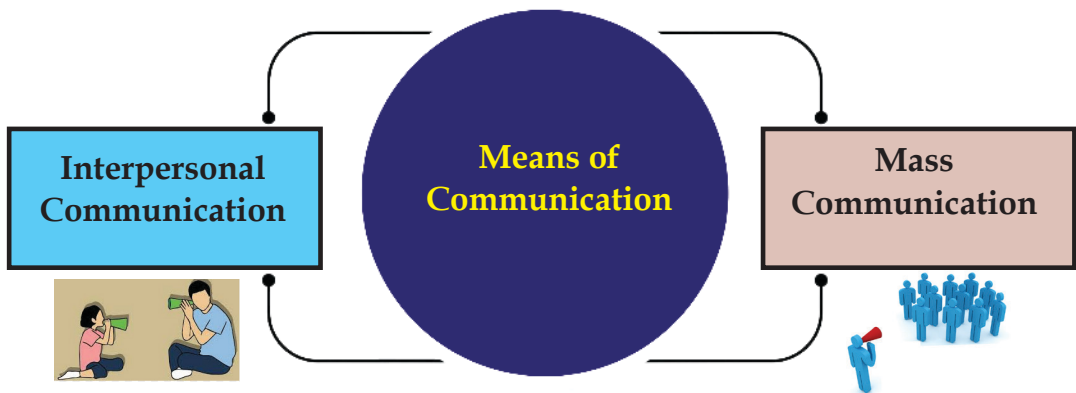
Indian Postbox



Prepare a video showing the changes in communication with the help of the teacher

Means of Communication

News and messages are exchanged mainly in two ways.



Interpersonal Communication

Interpersonal communication is the exchange of messages or ideas from one person to another. The tools used for the same are called Interpersonal Communication tools.



Mass Communication

Mass communication is the delivery of a message or idea to a large chunk of people. Mass media are the media used for this purpose.

Mass Communication Tools



Newspapers



Radio



Television



Seminar



Public meetings



Street play

In addition to the above, ideas can be communicated to a large number of people through books, magazines, art forms, movies, and social media.

Internet-based Advanced Communication Technology

Internet is a network that connects computers all over the world. We get various types of information with the help of the internet. Below are some of the advanced communication systems that are being used with the potential of the Internet.



Video Conferencing

People in remote places can view and talk, and exchange ideas with the help of the computer.

E-Commerce

It is the system of buying and selling of goods and services using Internet.

E-mail

It is a system of sending, receiving and collecting messages using electronic media.

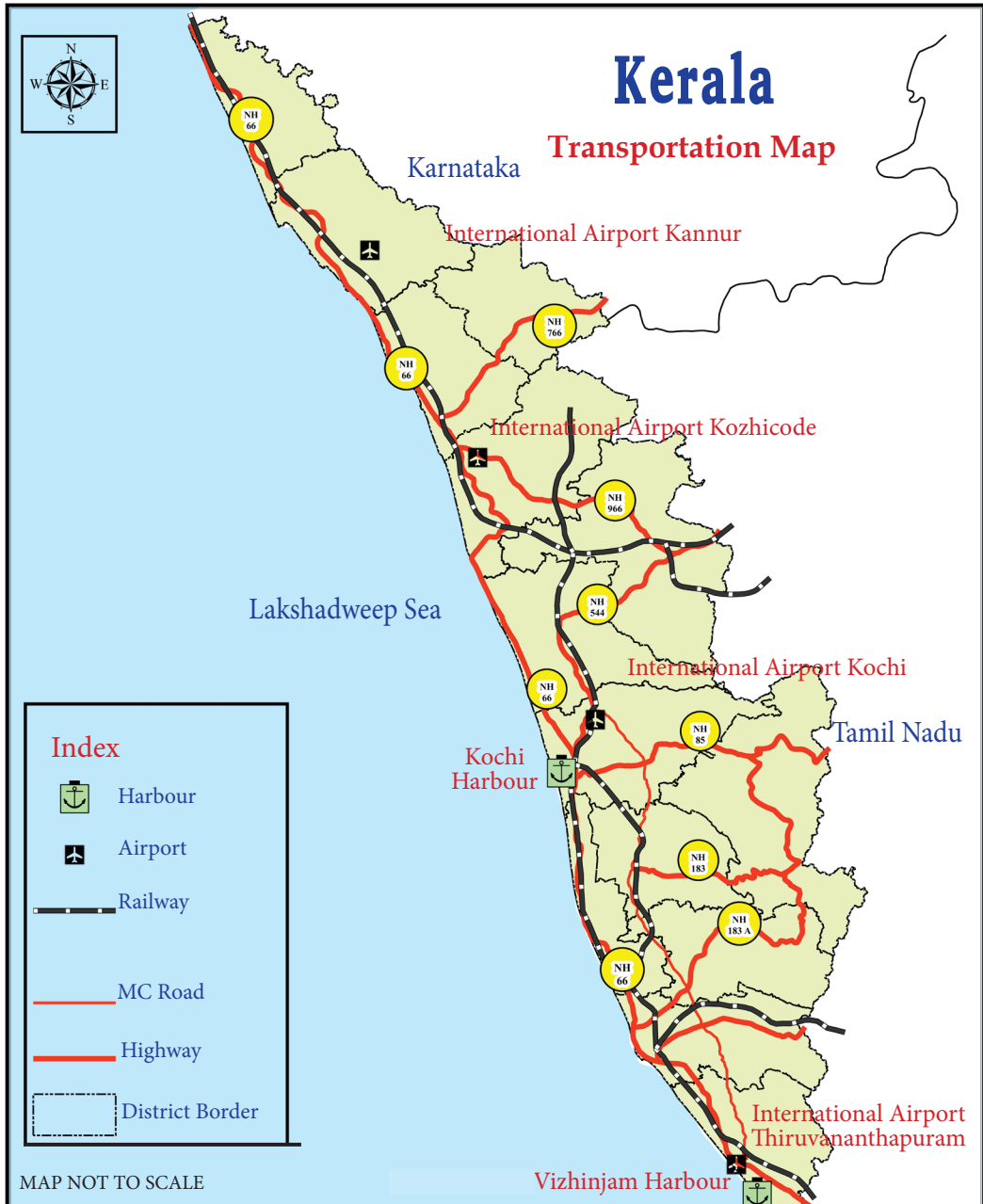
Tele-Medicine

Utilising the services of expert doctors at a distance with the help of information technology.



Discuss and prepare a report on the impact of information technology in our day to day life.

Transport and communication system plays an important role in shaping the modern society. The rapid growth of communication technology provides an opportunity for the people of the world to get together. This makes the world a global village. We can use transport and communication systems to help friendly gatherings and to foster human values.





Extended Activities

1. Organise a virtual water travel and air travel with the help of your teacher.
2. Organise a seminar about the changes that transport has brought about in human life.
3. Enquire and make notes on job opportunities in the fields of transport and communication.
4. Make models of different types of vehicles and organise an exhibition in your school.

പച്ചലാം വിരിപ്പിട്ട സഹ്യനിൽ തല വെച്ചും
 സ്വച്ഛാബ്ധിമണൽരരിട്ടാം പാദോപധാനം പൂണ്ടും
 പള്ളികൊണ്ടീടുന്ന നിൻ പാർവ്വതുമുഖമെന്തൊക്കാരും
 കൊള്ളുന്നു, കുമാരിയും ഗോകുണ്ഡേശ്വരനുമമ്മേ

മാതൃവന്ദനം - വള്ളത്തോൾ നാരായണമേനോൻ

Read an extract from Vallathol Narayana Menon's poem which describes the scenic beauty of Kerala.

To the east are the towering mountains, many rivers flowing from them, boats floating along backwaters, and to the west a long stretch of coastline, fields, plains.... green everywhere, pleasant climate. How beautiful is our Kerala!

Are there any such features like hills, beaches, water bodies , etc. in your area? The physiography of Kerala consists of diverse geographical features.

Now, let us observe the outline of a Grama Panchayat in Kerala.

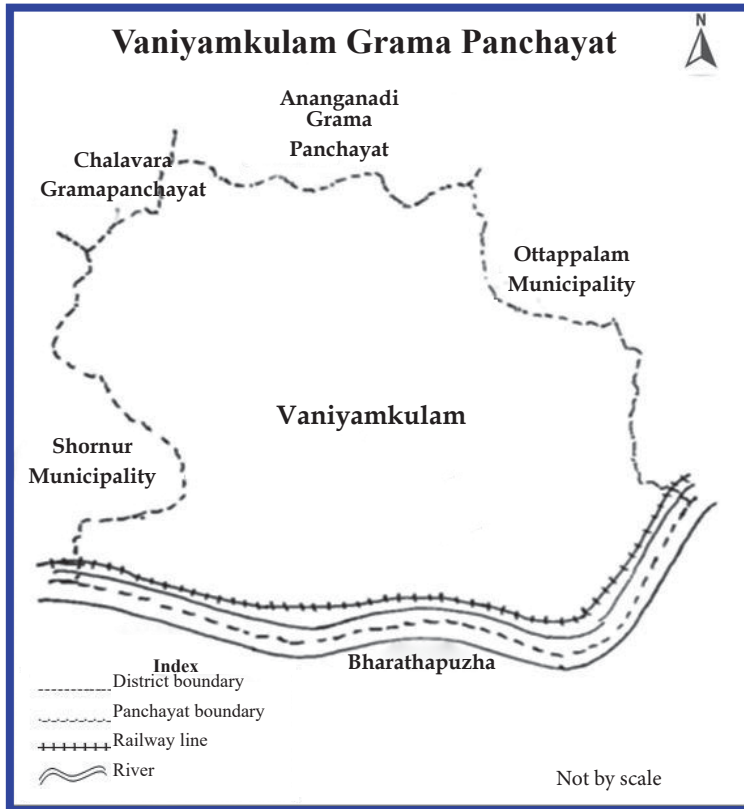


Figure - 1

Reference: Vaniyamkulam Panchayat Directory, 2001

Vaniyamkulam has a physiography consisting of hills and plains. Which is the major river seen in the outline?

•

Bharathapuzha flows along the southern border of Vaniyamkulam Grama Panchayat.

Find out the major mode of transport that runs parallel to Bharathapuzha.

•

Most of the areas of the panchayat are the catchment areas of Bharathapuzha. The river is used for water transport and fishing. The fertile soil along the banks of the river contributes to agricultural prosperity.

How does Bharathapuzha influence the agriculture, food habits, transport, etc. of the people in Vaniyamkulam Grama Panchayat? Discuss.

- The fertile soil on the banks of Bharathapuzha is suitable for agriculture.
-
-
-



We have familiarised ourselves with certain geographical features of Vaniyamkulam Grama Panchayat. Haven't you observed that such geographical features influence the life of people of that place in many ways?

List out the various geographical features, various crops and occupations of the area where you live in.

-
-
-
-

Aren't the agriculture and other occupations in your locality related to its geographical features? Examine them based on the indicators given. Help of the teacher can also be sought.



- weather
- waterbodies
- plains
- hilly areas
- fertility of soil
- transportation
- industries

Prepare a regional geographical document incorporating the information of geographical features you have collected. Use the titles given below. Present the geographical document in the Social Science Club.

Regional Geographical Record

- outline of the area / ward
- geographical features
- relationship of the life of the people with the geographical features.
- problems faced
- solutions

You have discussed the geographical features of your locality. Are the physiographical features of our state similar to them?

How about an inquiry into Kerala's physiography, soil, water, climate and crops, and their impact on people's lives?

Physiography of Kerala

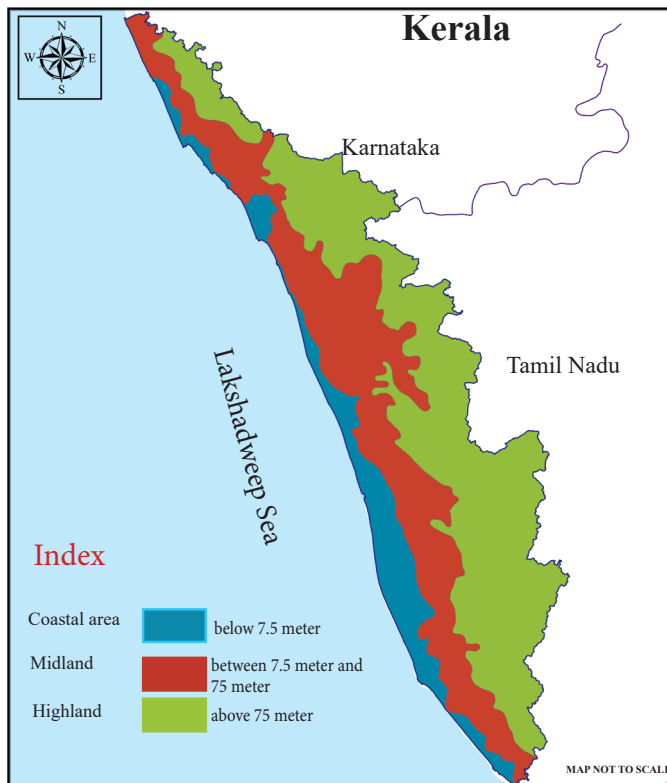


Figure - 2

Observe the map and find out the following. List them in your notebook.

- three physiographical divisions of Kerala
- altitude of each physiographic division from the sea level.
- physiographical division of Kerala which is adjacent to the Lakshadweep Sea
- physiographical area of Kerala which lies along the state borders of Tamil Nadu and Karnataka

Now, let's examine more about the physiography of Kerala.

Highland

Find the location of the highland on the physiographical map of Kerala. It is a physiographical section that is located at about 75 meters above sea level and includes hills, mountains, and peaks. Highland is a region that receives heavy rainfall and is generally full of greenery. All the 44 rivers of Kerala originate from the Highlands.

Midland

Locate the midland on the given map (Figure 2) on page 136. Midland is a physiographic division located between the highlands and the coastal region. The altitude of this area ranges from 7.5 meters to 75 meters above sea level. The midland is characterised by hillocks, valleys, and river banks.

Coastal Area

This is a landscape that is adjacent to the Lakshadweep Sea. Located close to the coastal region, this area has an altitude up to 7.5 meters above sea level.



Place a tracing paper over the given political map and draw the districts. Then superimpose tracing paper properly on the physiographical map of Kerala in Figure 2 (Page 136) and find the following.

- physiographic divisions consisting of each district
- districts with coastal areas
- districts comprising all three physiographic categories

Weather of Kerala

Kerala is a land that receives sufficient amount of rain. There are two main rainy seasons in Kerala.

- Southwest Monsoon or Kālavārsham
- Northeast Monsoon or Thulāvarsham

Kerala receives most of the rainfall during the southwest monsoon.

Summer season in Kerala is from March to May. It feels hotter these days. Intermittent rains in summer provide some relief from the intense heat.

Soil Types in Kerala



-Reference Mannezhuthu 2008-2009

How is soil formed?

Soil is one of the main factors responsible for the existence of life on earth. The process of weathering of rock to form soil takes a long time. Topography,

Monsoon



Monsoons are winds that change the direction in accordance with the seasonal changes. The southwest monsoon winds normally blow from June to September in the northern part of the equator in the Indian Ocean. They move towards inland from the southwest direction.

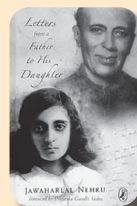
As they blow from the sea, they are moist. These winds which enter the land are blocked by the Western Ghats. As a result, the western coasts, including Kerala, receive high rainfall. This is the southwest monsoon. In Kerala, this monsoon season is known as 'Kālavārsham'.

During the months of October and November, the monsoon winds blow in the opposite direction from the northeast. These winds are known as the northeast monsoon winds. Since a part of these winds passes over the Bay of Bengal, it becomes moisture-laden and causes rain in many parts of the southern states of India. This monsoon season is known as 'Thulāvarsham' in Kerala.

Listen to the song of Irular of Attappadi. Soil is as important as water and air for the survival of living organisms. Human civilization developed through the mutual interaction between soil and humans. Without soil, there are no plants and no organisms that depend on them.



Read the chapters narrating how soil is formed in Jawaharlal Nehru's book 'Letters From a Father to His Daughter' and discuss in the class.



climate, rock structure and age, the activity of plants, animals, and other microorganisms contribute to soil formation. It is estimated that it takes more than a thousand years for the formation of soil of one inch thickness.



Collect pictures of a variety of human activities that use soil. Prepare a digital album with the help of teachers and present them to the Social Science Club.

Laterite Soil, Red Soil, Alluvial Soil, and Forest Soil are the main soil types in Kerala. Black Soil and Peat Soil are also found in some regions.



Collect more information about important types of soil with the help of the teacher, make notes, and present them in the class.

Observe the pictures.



Application of excessive fertilizer and pesticide



Plastic waste in soil



Unscientific mining



Unscientific agricultural practices

Illustrations given are situations in which the unique characteristics of soil are adversely affected. Find out and enlist more such contexts.

•

•

•

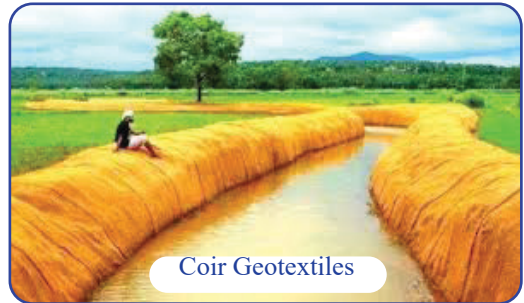
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What are the measures that can be adopted for the conservation of soil?

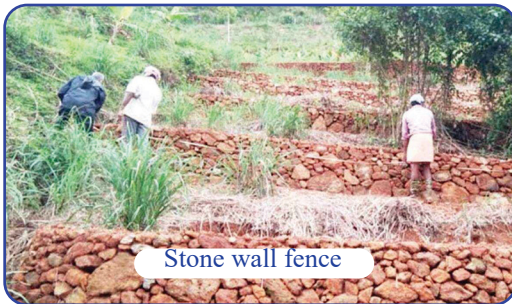
Observe the pictures of the methods of soil conservation.



Mangroves



Coir Geotextiles



Stone wall fence



Terrace farming

Find out and enlist more measures of soil conservation.

-
-
-



The United Nations observes December 5 as World Soil Conservation Day.



Collect soil types from your area and identify their characteristics with the help of the teacher, write them on a chart and demonstrate to the class.

Water Sources of Kerala

Water is a natural resource that is indispensable for human existence.

What are the sources of water on earth?

- rivers
- springs



What are the sources of water in your area?

Kerala has an undulating topography which lays uneven from Sahya Mountain in the east to the Arabian Sea in the west. The rivers that

originate from the Sahya Mountain ranges flow to the backwaters and the sea and make Kerala abundant in water. Apart from these, there are many lakes and ponds in our land. There are 44 rivers in Kerala which originate from the highlands. Of these, 3 rivers flow eastward and 41 rivers flow westward.



List out the rivers in Kerala observing the 'Kerala River Map' kept in your Social Science lab. Classify the rivers flowing eastward and westward.

Haven't you noticed that though our waterbodies are enriched during the two rainy seasons, many of them dry up when the rainy seasons are over? Find out the reasons for this.

Only a small amount of the world's total water supply is available as pure water. It is the duty of every one of us to conserve the precious and clean water. Water conservation can be ensured through rain pits, rainwater harvesting, bunds, and mulching.

Observe the pictures.



Under what conditions do water sources become polluted?



Are the waterbodies in your country being polluted? Discuss. What suggestions can be put forward to protect water bodies from getting polluted?



Prepare placards of water conservation messages and organise a rally for water conservation. Prepare a speech about the importance of rainwater harvesting.

Pollution of waterbodies endangers the survival of living organisms. The government implements various schemes to protect and maintain the existing water sources. Check the list given below.

Project	Implementation
Ini Njan Ozhukatte	Haritha Keralam Mission
Malinya Mukatham Navakeralam	Department of Local Self-Government
Thelineerozhukum Navakeralam	Department of Local Self-Government
Jal Jeevan Mission	Government of India

Find out the objectives of these projects.

Crop Diversity of Kerala

Observe the pictures of some crops found in different regions of Kerala.



Which are the crops shown in the picture?

Identify the physiographical divisions in which each of these crops is cultivated?

Why is tea not cultivated in all topographical sections in Kerala?

Rubber cultivation is generally not seen in coastal areas. What could be the reason?

The agriculture of each region is related to its physiography and climate. Soil, irrigation facilities and altitude from sea level also contribute to the cultivations.

Tea is extensively cultivated in areas like Munnar and Peerumedu in Idukki district, Meppadi and Vythiri in Wayanad district and Ponmudi in Thiruvananthapuram district. Paddy cultivation is widespread in Palakkad district and Kuttanad.

Observe and list out the major crops grown in your area.

• • • •

Fertile soil and abundant rainfall provide ideal conditions for a variety of crops in Kerala. The cold climate experienced due to the high altitude above sea level and the sloping topography create a favourable condition for the cultivation of crops like tea, cardamom, coffee, pepper, etc. in the highland region.

The topography and soil characteristics contribute to the crop diversity in the midland. Along with tubers such as tapioca, colocasia, and yams, banana as well as rubber cultivation are widespread in the midlands. Kerala is the largest producer of rubber in India.

The presence of alluvial soil in the coastal area is suitable for paddy cultivation. The saline soil here is favourable for the abundant growth of coconuts. The backwaters are used for fish farming.



List out the major crops of highland, midland, and coastal regions.

Identify and complete the list with the essential factors that come together to ensure the agricultural prosperity of an area?

- suitable topography •
- fertile soil •
- •

Agricultural practices of an area are formulated in tune with the prevailing climate, soil and rainfall in each physiographical division. Many of the festivals in Kerala are closely related to weather and topography. Do you know that Onam is a harvest festival? Similarly, Vishu is also associated with harvest. Examples of celebrations related to weather and topography include boat races and bull-race held in the waterbodies of Kerala after the monsoon season. Find out similar examples.

Employment Diversity in Kerala

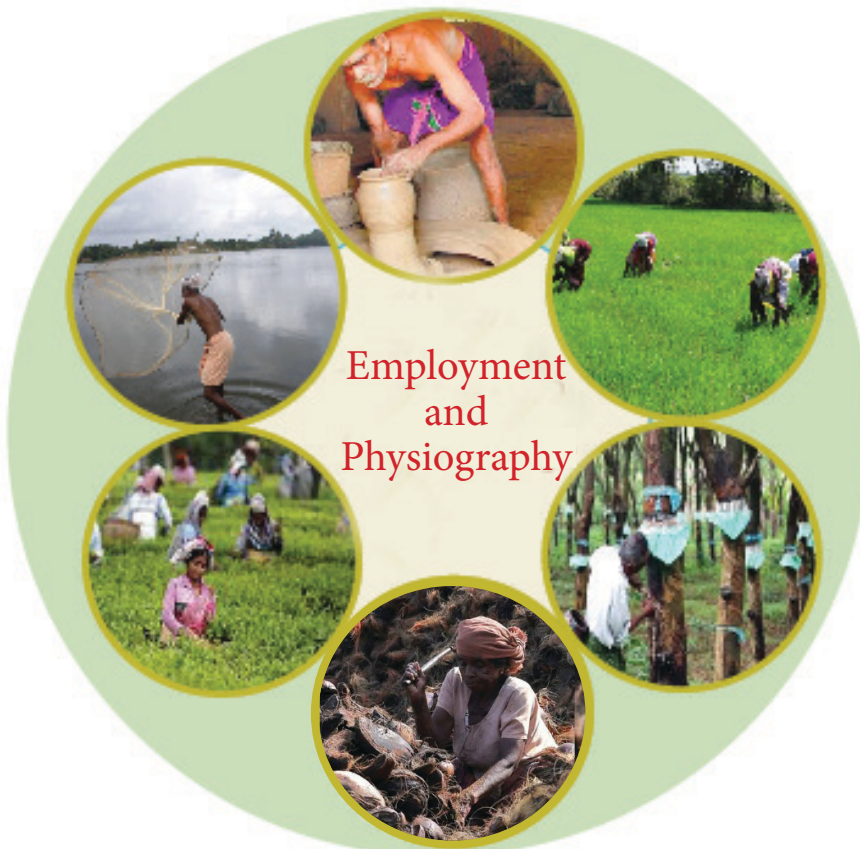
We have already discussed that a variety of agricultural activities are carried out in each physiographical condition. Is agriculture the only employment that the people of Kerala are engaged in? What are the employments prevalent in your area?

-
-
-

Along with progress in agriculture, advancements in other fields of work are important to improve the living conditions of people.

Natural resources and human resources play an important role in determining the progress of the people of a region. The work culture of each region has been formed according to the topography and climate of that region. Husk threshing and rope picking in backwater shores, paddy cultivation and duck rearing in Kuttanad are examples for this.

Observe the images given below.



List out the employments mentioned in the picture in tune with appropriate physiographical divisions.



Physiographical divisions	Employments
Highland	
Midland	
Coastal area	

Advancements in education, improved socio-infrastructured conditions and modern technology in Kerala have led to positive changes in the employments people engaged in.



Investigate and make notes on the changes brought about by modern technology in agricultural and traditional occupations.

Kerala and Natural Disasters

We have seen that Kerala's natural beauty and favourable climate make people's lives easier. But sometimes, natural disasters and calamities occur. Kerala has a physiography with many ecologically vulnerable areas. Apart from the crises caused by human intervention, some natural calamities also harm the living world.

Observe the pictures.



Images related to natural calamities are given. List out the natural disasters to life, property and the environment? Complete the list.

- cyclone
- wild fire

What are natural disasters?

Natural disasters are natural phenomena that endanger life, property, and the environment. Such natural calamities adversely affect humans and other living beings. The tsunami in 2004 caused huge damage in Kerala. Ask your elders about it.



Kavalappara Landslide (2019)

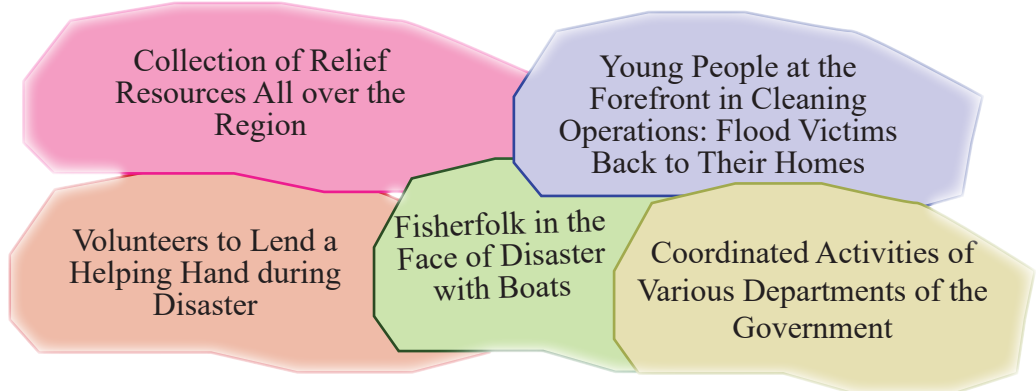


Pettimudi Landslide (2020)

The major floods in Kerala in 2018, landslides in Kavalappara in 2019 and Pettimudi in 2020 have made life difficult for the people in those areas.

Disaster Management and Mitigation

Watch the news collage.



The news collage given shows how Kerala faced the 2018 flood.

Kerala joined hands for relief and rescue operations. As a result of the joint efforts of various government departments, voluntary organisations, the youth, traders and fishermen, the severity of this major natural disaster has been mitigated.

Can you identify any volunteer who got involved in the flood relief work in your locality? Enquire and learn their experiences.



What sort of preparations are to be made in advance for the prevention and mitigation of disasters?

Preparations		
Pre-Disaster Management measures	Rescue operations during disasters	Post-disaster rehabilitation
Anticipate certain disasters with the help of modern technology.	Ensure necessary measures for the rescue operations.	Rehabilitate the disaster victims
In disaster-prone areas, issue warnings and take steps to create awareness and evacuate people.	Set relief camps and plan for the provision of food, clothing, shelter, and medical care.	Take steps to manage situations of disasters in future.

Government departments and systems working for the management and mitigation of natural disasters

- Kerala Revenue Disaster Management Department
- State Disaster Management Authority
- District Disaster Management Authority
- Disaster Risk Analysis Cell
- Land & Disaster Management Institute



Prepare a digital album with the help of your teacher by collecting pictures related to prevention and relief operations of natural disasters.

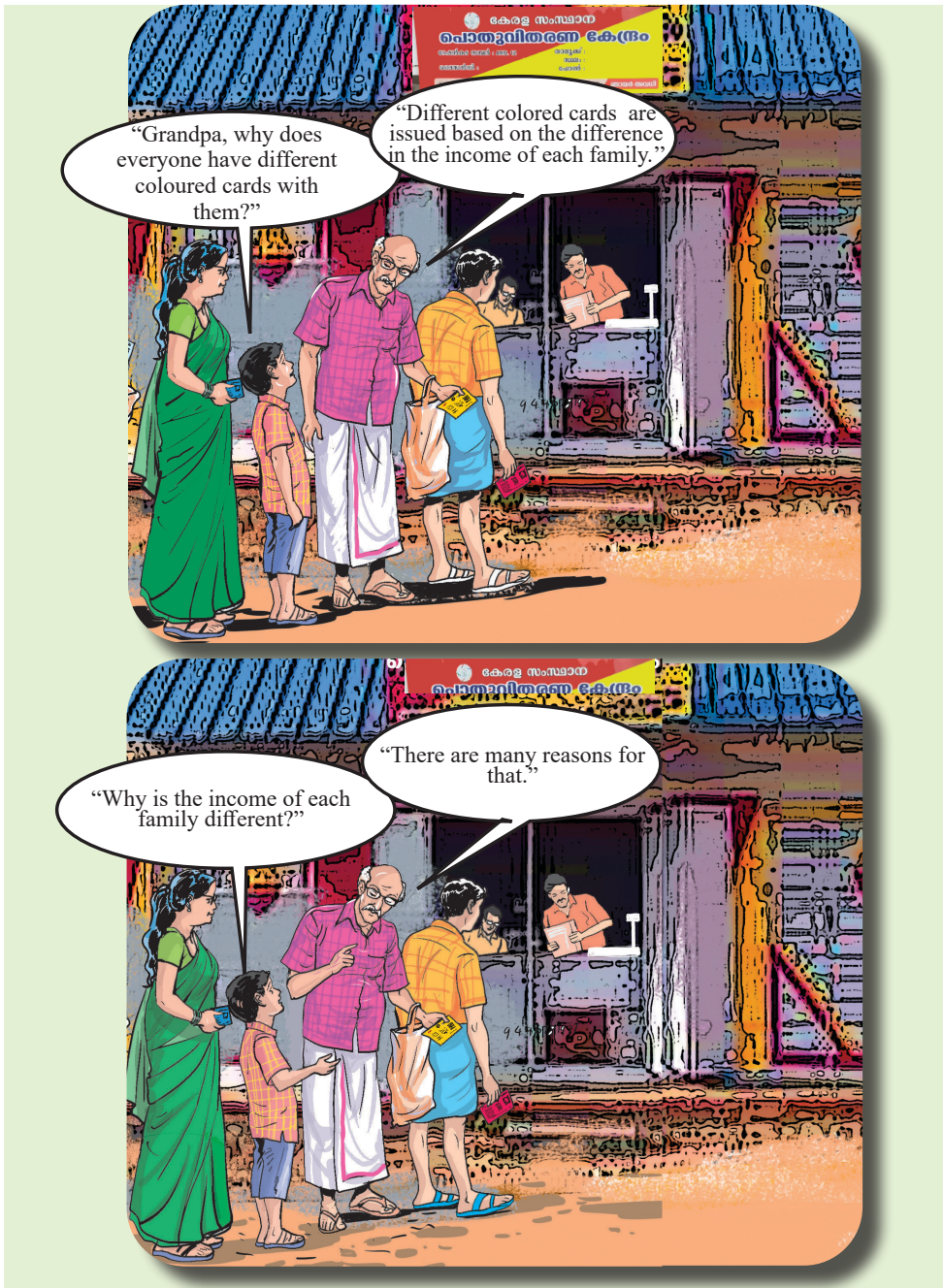
Haven't we realised how the diversity of land we live in, soil, water, climate, and crops influence our lives? We have the responsibility to preserve the abundance of this soil and pure water for future generations. So, we should give priority to development and the way of life that does not disturb the balance of nature.



Extended Activity

1. Prepare a wall poster with information about soil types, occupations, crops, etc. in all the three physiographical divisions of Kerala.
2. Find out the properties of soil on your school premises with the help of 'Mannu' App. Select the crops that can be cultivated on the school premises from the app. Under the auspices of the Agricultural Club, increase the fertility of the soil using the tips from Mannu App and cultivate vegetables enough for your lunch.
3. Organise a seminar based on the topic 'Kerala's Physiography and Life of the People.'
 - Collect information on soil, water, crops, and occupations for each physiographical division.
4. Discuss the problems faced by the agriculture sector in your locality with the local farmers. Also ask for solutions to their issues. Prepare a report.
5. Visit the official website of the Kerala Disaster Management Authority and learn its activities.

Towards Equality



What could be the reasons for the difference in income between families?

Let's listen to the thoughts of Neenu and Vicky after returning from Peeli's village.



I was worried whether I could go everywhere when I went to Peeli's village with my friends. Peeli, her mother, her father and their village welcomed us with much enthusiasm. How beautiful were the sights in the village! Peeli's family uses the agricultural produce cultivated by her father for food. It had the taste of the food that I usually have in my ancestral home in my village. I have to tell my family that we have to start farming on our farmland that is given for lease. I wish we moved back from this government quarters to our ancestral village, so that I could enjoy the happiness of my village also. My parents can then go to the office from there.



I went to Peeli's village wondering how I could spend a day without any of the amenities of the city. But, I too enjoyed a day in Peeli's village without mobile network or Wi-Fi. When I returned from there, my perception that only city life was interesting, changed completely. The taste of food there is different from the taste of packaged food here. We lead a busy life in a city apartment with parents who are in the business sector. I felt relieved when my grandfather came here after retiring from government service.

Haven't you taken note of the thoughts of both the friends?

Don't they share about the sources of income of their families in their thoughts?

List the sources of income of both the families.

Sources of family income of Neenu	Sources of family income of Vicky
• lease •	• business •

The table shown below gives an approximate estimate of the monthly income of both the families.

Family	Monthly Income (approx.)
Vicky	3,00,000 - 5,00,000 (between three lakh and five lakh)
Neenu	1,00,000 - 3,00,000 (between one lakh and three lakh)

Is the income of the two families the same?

The table shown below gives the approximate monthly income of various families in a panchayat. Observe the table and identify the family with the highest income and the one with the lowest income.



- Family with the highest income
- Family with the lowest income

Income of various families (approx.)

Family	Monthly Income (approx.)
A	4,00,000 - 5,00,000 (between four lakh and five lakh)
B	3,00,000-4,00,000 (between three lakh and four lakh)
C	2,00,000-3,00,000 (between two lakh and three lakh)
D	1,00,000-2,00,000 (between one lakh and two lakh)
E	50,000-1,00,000 (between fifty thousand and one lakh)
F	25,000- 50,000 (between twenty-five thousand and fifty thousand)
G	10,000-25,000 (between ten thousand and twenty five thousand)

Reasons for Difference in Family Income

- difference in income from employment
- difference in the sources of income

Difference in Income from Employment



From the above pictures, point out the different employments that the people are engaged in?

-
-
-
-

Do you think that those who engaged in different employments get the same income?

Based on the nature of employment, the income from it varies.

Difference in the Sources of Income

Variation in the sources of income is a major cause of variation in the family income. Bank deposits, stock investment and assets are various sources of income. Income will vary based on the difference in the source of income. Those who have a high income can meet more needs. However, people of the low-income group are often unable to meet even their basic needs.

Generally, families can be classified into three groups based on their income.

families with an
amount of
high income

families with an
amount of
moderate income

families with an
amount of
low income



Discuss the extent of influence of family income in meeting the needs of your family.

Haven't you noticed that there is a difference between the income generated from a job and from other sources? The inequality in employment and income leads to the economic inequality in the society. Inequality occurs when the available resources in a society are not distributed equally.

Economic Inequality



Economic inequality refers to the unequal distribution of wealth, income or resources among individuals or groups in a society. This often leads to the inequalities of access to opportunities, education, employment, healthcare and political power. Governments seek to address economic inequality through implementing various policies and initiatives aimed at a more equitable distribution of resources and opportunities.

Does only inequality exist in the economic sector of the society?

Read the notes.



Inter Dining (Misrabhojanam)

Since the beginning of the 19th century, many struggles have been started in Kerala to put an end to the discrimination that existed in the consumption of food, essential for sustaining the very life. Since the Samapanthi Bhojanam which was held under the leadership of Ayya Vaikuntaswamy's Samatva Samajam, many struggles have been held in this way. One of the most notable of these protests is the Misrabhojanam organised by K.Ayyappan, the editor of the newspaper 'Sahodaran' in Cherai, Ernakulam district on 29 May, 1917. Consequently, he had to endure severe physical torture and threats. This event was a milestone among the struggles against discrimination.



Ayya Vaikunda
Swamikal



Sahodaran
Ayyappan

Upper Cloth Protest (Melmundu Samaram)



The Upper Cloth Protest was led by the women of South Travancore from the beginning of the nineteenth century for the right to use upper cloth as part of their dress. After a series of protests, the Travancore Government proclaimed the right to wear any dress for every one irrespective of caste or religion according to their will and pleasure. However, many were not able to wear their favourite clothes due to the customs imposed by the caste systems.



Ayyankali-Panchami Memorial School

The Travancore government provided free education up to the fourth standard to all categories of children irrespective of caste and religion. However, the so called upper-caste school authorities did not admit children hailing from lower castes. As a protest against this, Ayyankali took the hand of a Dalit girl named Panchami and went to Ooruttambalam school and demanded that she be admitted to the school. Although the authorities were forced to grant admission to Panchami, the upper caste people set fire to the school the same night. The debris of the burnt bench and other equipment is kept in the school museum. Thereafter the school has been named Ayyankali-Panchami Memorial School, Ooruttambalam, Thiruvananthapuram.



What kind of inequalities are mentioned here?

Social inequality is a condition where all groups of people are not socially equal. The unequal condition in status, rights and opportunities creates social inequality.



Social Inequality

Social inequality refers to the unequal distribution of resources, opportunities and status within a society. Social inequality manifests itself in various forms such as inequality in income and wealth, lack of access to education and healthcare, discrimination based on race and gender and unequal representation in political and social institutions. The Government formulates policies aimed at promoting equality, justice, and equal opportunities for all members of society to address social inequality.



Why did people from certain social groups have to face discrimination? Do similar situations exist in society? Discuss.

Let's examine the causes of social inequality and the factors that influence them.

Causes of social inequality	Factors that influence
Economic inequality	• disparity in income • unemployment • lack of availability of resources • difference in wages/salary
Educational inequality	• lack of quality education • limited educational opportunities
Inequality within social structures	• discrimination based on caste, religion, race, gender status and special needs • inequality due to social norms
Geographical inequalities	• rural-urban disparity • lack of availability of resources
Historical factors	• colonisation • slavery • repression



Discuss the causes leading to social inequality and the factors influencing them in your class and make notes.



Shanti is studying in class 5. Her family consists of father, mother, sister and brother. Being in the coastal area, they live in fear when the sea gets rough. The biggest problem they face is the absence of a safe and secure home.

Akash and his family live in a hilly area. It is difficult for Akash and his sisters to go to school due to inadequate transport facilities.

Consider the above two scenarios. What are the problems they face?

Shouldn't all these be addressed? While resolving the problems of Shanti and Akash, the issues of all other communities who face social inequality have to be resolved.

Social progress is possible only when the basic needs of all the people are met. Adequate facilities and conditions for the same have to be set up. Addressing social inequality requires comprehensive policy reforms. To this end, Government formulates and implements educational initiatives and projects for social justice and equal rights.

Government Interventions to Address Socio-Economic Inequality

The governments implement various schemes for the uplift of the people who face inequality. Central and State governments have been implementing various schemes to provide food, shelter, education, healthcare, and other basic facilities to all sections of people. Let's get to know them.

Welfare Pensions

Welfare pensions are social security schemes aimed at providing financial assistance to people who are socially and economically backward as well as vulnerable groups. The chief beneficiaries of welfare pensions are senior citizens, the differently abled, widows, unmarried women above 50 years of age, farmers, etc.

What are the various welfare pensions implemented by the governments?

- Agriculture Labour Pension •
- Old Age Pension •

Scholarships

Many scholarships for students have been introduced for educational purposes. Find out and list the scholarships available for students.

- Pre-Matric Scholarship •

Find and discuss, in the class, the opportunities and schemes that help to uplift the students educationally, address their backwardness and reduce inequality.



Apart from these, what are the other schemes being implemented by the government to address socio-economic inequality?



Public Distribution Centre



Maveli Store



Neethi Store

Haven't you noticed the pictures? Public Distribution Centre, Maveli Store and Neethi Store are systems that provide essential commodities at low prices. Through these centers, we get goods at cheaper rates with the subsidy provided by the government.

Subsidy

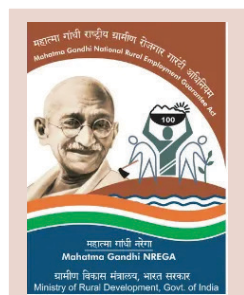
A subsidy is a financial benefit or support provided by the government to individuals or institutions as per criteria. Subsidy can be direct or indirect. Direct subsidy refers to support provided in cash. Indirect subsidies include lowering of tax rates and charging a lower rate of interest on loans.



Several schemes and programmes are being implemented by the central and state governments and the local self-governments for poverty alleviation and to reduce social inequality. Let's get to know a few of them.

Mahatma Gandhi National Rural Employment Guarantee Scheme

The scheme ensures unskilled physical employment for not less than 100 days in a financial year to any family residing in rural areas. Its beneficiaries are individuals above 18 years old. It is a poverty alleviation scheme designed and implemented by the Central and State governments.



Life Mission

The objective of the complete housing scheme (LIFE) is to provide a safe and decent housing system in Kerala for all the landless, homeless, people with homes that have not been fully constructed and those whose existing house is not fit to live in. This is a scheme designed and implemented by the Central and State governments.



Theeramythri

The Government of Kerala is implementing 'Theera mythri,' the small business enterprises development plan to bring women from the families of the fisher folk into the mainstream of society by making them entrepreneurs. Through this project, implemented throughout Kerala, it is envisaged to ensure the socio-economic empowerment of fisherwomen.



Kaivalya

This is a rehabilitation scheme implemented by the Government of Kerala for the differently abled job seekers. The objectives of this project consist of equality of opportunity and social inclusion.



Vidyavahini

Vidyavahini is a project to provide transportation facilities for tribal students to go to school. This scheme is implemented to ensure transportation facility for students who belong to the tribal communities and to prevent dropouts.



Janani Janmaraksha

A scheme implemented by the Government of Kerala to provide nutrition to pregnant women and mothers who belong to tribal groups.



Prathibhatheeram

A scheme implemented by the Government of Kerala for the educational advancement of children hailing from the coastal region.

Gothrabandhu

A scheme by the Government of Kerala to appoint qualified persons from the tribal communities with ample knowledge of both tribal language and Malayalam as teachers in primary schools to achieve the objectives of solving the language issues of tribal students and to prevent dropouts.



Conduct interviews with elected representatives of local self governments to gather more information about such projects.

Complete the table given below.



Projects	Beneficiaries	Features
Mahatma Gandhi National Rural Employment Guarantee Scheme	Those who have completed 18 years of age in the rural area.	_____
Life Mission	_____	Provide house
Vidyavahini	_____	_____
Theeramaithri	Fisherwomen	_____
Kaivalya	_____	Equality of opportunity



Prepare a poster to create awareness of various schemes implemented by the governments to address socio-economic inequalities.



We have discussed how the economic, educational, geographical, and historical factors lead to social inequality. Such inequalities also create obstacles to social progress. Central and State Governments have been devising and implementing various schemes to ensure social progress and equality guaranteed by the constitution. All human beings should have the opportunity to meet their basic needs and live independently. We need to intervene in society by recognising that all human beings are equal and realise the need to bring together those who face inequality.



Extended Activities

1. Identify the various schemes and their objectives implemented by the Central/State Governments to materialise socio-economic equality in post-independent India. Note them in a chart and display in the class.
2. Conduct a seminar on 'Socio-Economic Inequalities and National Development.' Sub-topics to be covered in the seminar:
 - social inequality
 - economic inequality
 - reasons for inequality
3. Organise public awareness programmes under the auspices of the Social Science Club by preparing placards, posters, etc. of the schemes implemented by the government to resolve socio-economic inequalities.

Wonders in the Sky and Splendours on the Earth



Didn't you enjoy the night view of the sky during your trip to Peeli's village? Listen to Appu's description after the trip.

How beautiful the sky is under
the moon's radiant glow!
Thousands of stars glitter
like pearls in the night. Peeli,
gazing at a luminous celestial
sphere said, "It is a planet."
As we watched in amazement,
Vicky shouted, "That is

Venus." Then Neenu asked,
"Do you know why Venus
shines so brightly even though
it's a planet?" Everyone looked
at Neenu out of curiosity.
And then, the mystery of the
miraculous sights in the sky
began to unfold.

Doesn't everyone love the view of the sky at night?

Why is the beautiful view of the sky at night not visible to us during daytime? Write down the reasons.

•

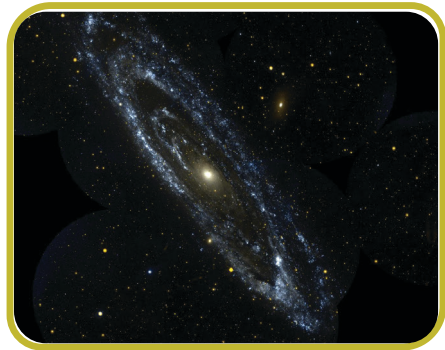
•

•

Haven't you understood that the presence of the Sun is the reason for this? The Sun is a star. The Sun is also the closest star to the Earth. There are many other stars which are bigger than the Sun.

Don't the stars look so small from the Earth? Why?

Stars appear small because they are far away from the Earth. Stars are giant celestial bodies that are luminiscent. They emit large amounts of heat and light. Galaxies are clusters of billions of stars.



Galaxies



Why do stars twinkle?



Light emitted from the stars in a straight line is constantly deflected, as it passes through the atmosphere. Therefore, the stars seem to twinkle when we look at them from the Earth.

Draw a picture showing the beauty of nature at the time of sunrise or sunset.



Some celestial bodies revolve around the Sun. Observe the picture of the Sun and these celestial bodies.

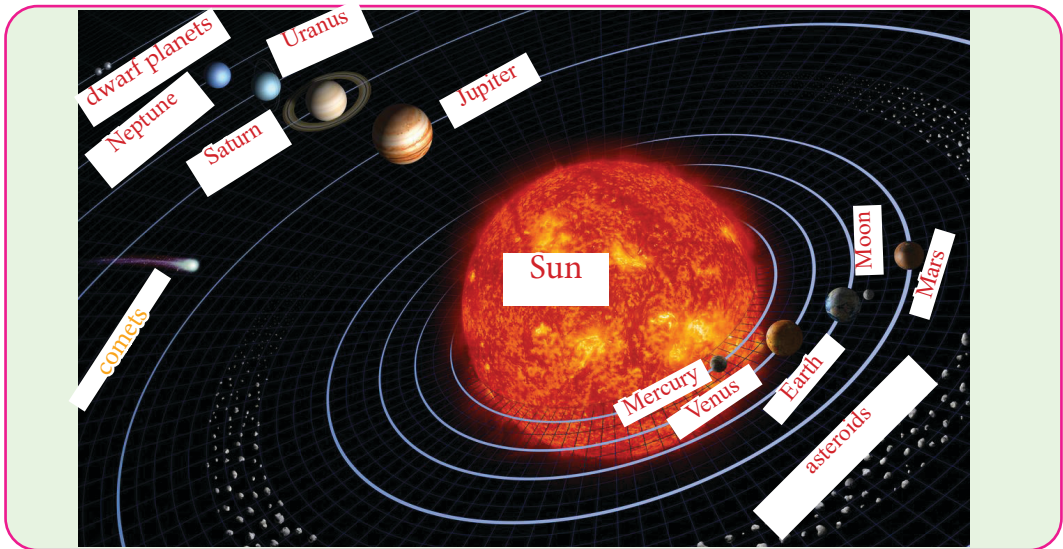


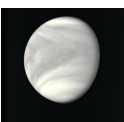
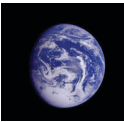
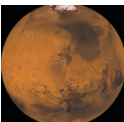
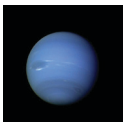
Image - 1

Apart from the Sun, which are the other celestial bodies there in the picture?

In which celestial body among these do we inhabit?

The Earth is a planet. What are planets?

Planets are celestial bodies that rotate themselves and revolve around the Sun. They cannot emit heat or light by themselves. Planets get their heat and light from the Sun. Check out the list to find out which planets revolve around the Sun and what are the characteristics of each of them.

Planets	Features	Planets	Features
 Mercury	closest to the Sun	 Jupiter	the largest planet
 Venus	known as Morning Star and Evening Star	 Saturn	the second-largest planet
 Earth	the only planet in which life exists	 Uranus	the coldest planet.
 Mars	red planet	 Neptune	the planet that is farther from the sun

Have you noticed the picture of the Sun and the celestial bodies revolving around it?

Are only the planets revolving around the Sun? Apart from the planets, dwarf planets, and asteroids are seen in image - 1 (on page 163), aren't they?

The Solar System consists of the Sun, the eight planets orbiting the Sun, their satellites, dwarf planets, asteroids, meteors, and comets. The Sun is the centre of the solar system.



It was Nicolaus Copernicus who revealed to the world that the Sun is the centre of the solar system. He was a Polish astronomer.



The Milky Way is a galaxy that includes the solar system. It has billions of stars. The universe consists of billions of such galaxies.



Comets

Comets are rare visitors to the solar system. They are made of rock, dust, and ice. Their tails glow in sunlight as they approach the Sun.



Asteroids

Asteroids are small planet-like chunks of rock found between Mars and Jupiter.



Dwarf planets

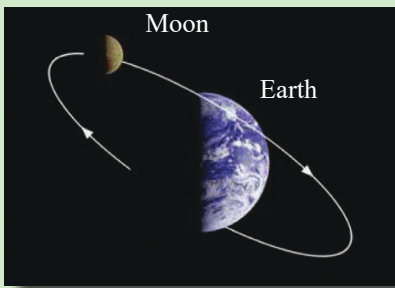
Dwarf planets are smaller and spherical objects in the solar system that orbit around the Sun.



Meteors

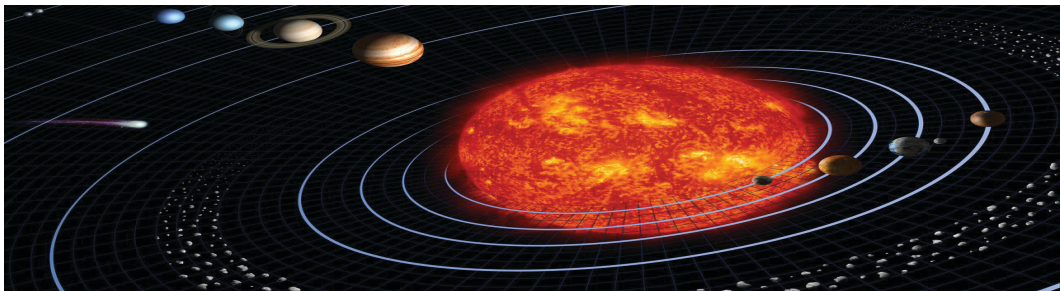
Meteors are pieces of rock that enter the Earth's atmosphere at a high speed from asteroids and the like. At night they are seen as fast-moving sparks in the sky. They burnout in a few seconds. They are locally called Kollimeen.

Satellites are celestial bodies that orbit around the planets in fixed orbits. The Moon is the only satellite of the Earth.



Sidereal month

The Moon takes about 27.3 days to orbit the Earth once. This is called a sidereal month.



Observe the orbits of the planets of the solar system. The orbit is the path of celestial bodies around the Sun. Planets revolve around the Sun on elliptical orbits. It is the gravitational force between the planets and the Sun that helps the planets move along their fixed orbits. All the planets rotate on their imaginary axis while orbiting the Sun.



Roleplay the solar system with the help of your friends. Don't forget to introduce each planet with its characteristics.

Our Earth

Read what astronaut Sunita Williams had to say about the Earth.



"The earth looked very beautiful and wonderful. We could watch it for hours through the window of the space station. We could see the spherical shape of the Earth."



Sunita Williams



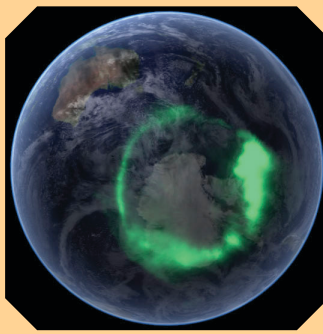
Space

Space is the area beyond the limits of the atmosphere outside a celestial body. Experts are sent to the space from different countries for expedition and experimentation.

The Earth is the only planet in the solar system where life exists. The Earth has a unique spherical shape. It is spherical with the poles slightly flattened and the equator slightly bulged. This shape is known as Geoid. The term 'geoid' means the shape of the Earth.



The Indian scientist Aryabhata believed that the Earth was spherical and rotated on its imaginary axis. Greek philosophers such as Thales, Pythagoras, and Aristotle also believed that the Earth was spherical. Later, the navigator Magellan's circumnavigation of the world proved that the Earth is round.



Images of the Earth taken from space

Observe the images of the Earth captured from space. Isn't the Earth seen as a blue sphere in this picture? Why is it so? Which is the most common colour on the globe, the model of the Earth? The Earth looks like a blue sphere from space because about 71% of the Earth's surface is water.

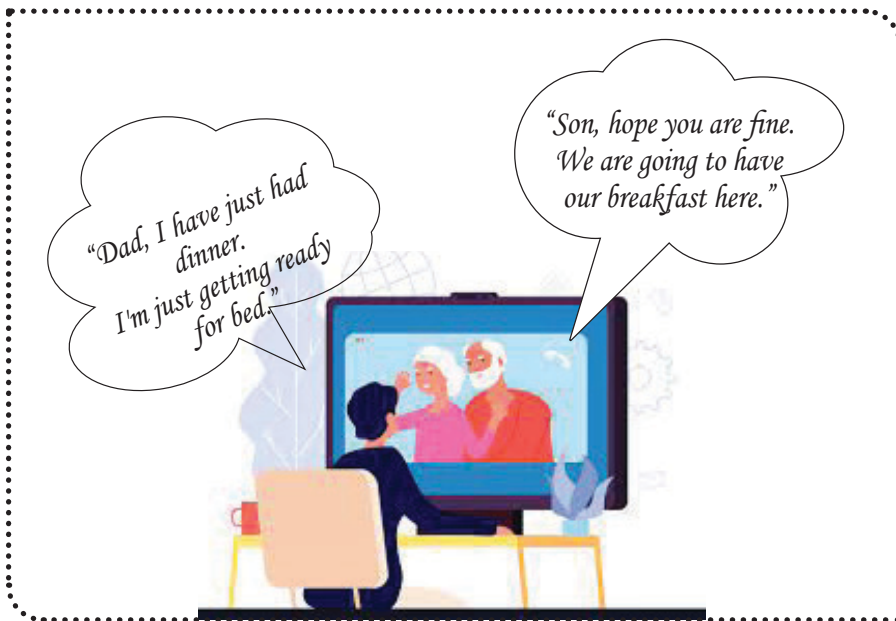
Another feature that distinguishes the Earth from other planets is its atmosphere. The atmosphere is the blanket of air covering the Earth. It contains gases, dust particles and water. The atmosphere plays a crucial role in sustaining life on the earth by regulating heat and cold.

Why does the atmosphere exist as a covering around the Earth? Examine.



Discuss and make notes on the role of the atmosphere in sustaining life on the Earth.

Motion of the Earth



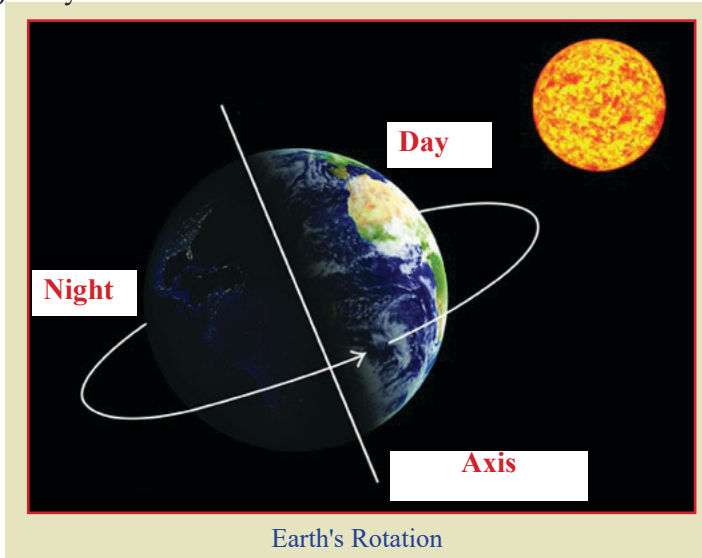
Listen to this conversation. We see Jinu, who is working in Canada, engaged in a video call with his parents in India. Jinu and his parents live in two different places on the Earth.

Observe the globe and find the location of Canada and India.

Why would it be daytime in one place and night in the other?

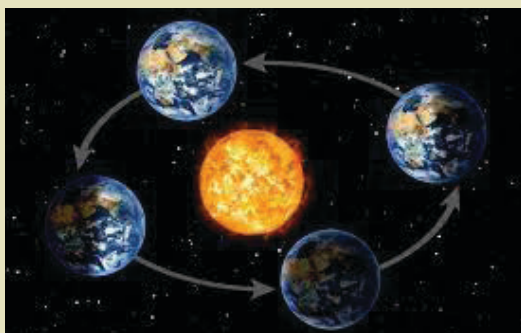
As the Earth is spherical, only one-half of the Earth receives sunlight at a time. It will be dark on the other half.

The part of the Earth that faces the Sun receives sunlight and so it experiences daytime there. It will be night on the other side because no sunlight reaches there. Thus, night and day alternate on the Earth because of the rotation of the Earth. Rotation is the spinning of the Earth on its imaginary axis.



The Earth rotates from the west to the east. That is why we feel that the Sun rises in the east and sets in the west.

The Earth takes 23 hours 56 minutes 4 seconds to complete one rotation. This is calculated as a day.



As it rotates, the Earth moves around the Sun on a fixed orbit. This is revolution. It takes $365\frac{1}{4}$ days for the Earth to go around the Sun once. It is considered as one year. Seasons are experienced as a result of the revolution of the Earth.

Illustrate the revolution of the Earth on a chart and display it in the class.



The Seasons



How joyful were the days of my childhood...! The Idavappathi rain that drenches our new clothes at the beginning itself of the school year. This rain that lasts nearly for two months and begins to withdraw as the month of Karkidakam ends. Then arrives Chingam, the month of wealth and prosperity. How beautiful is nature as it blooms to welcome Onam! Then comes the Thulavarsham, bringing relief to the summer heat of Kanni. The month of Vrishchikam and Dhanu cool nature. In the month of Makaram, some trees are seen shedding their leaves. Most waterbodies dry up due to the intense heat of Kumbham, Meenam and Medam. The mangoes and the jackfruits in the yard make nature beautiful even at that time.



You have read Grandma's experience. Here, Grandma refers to the changes in nature from her childhood. What changes are they?

- rain

-

-

-

Do we get all types of fruits every season? Discuss.



Which seasons do the given pictures refer to?

- rainy season

-

-

Do you experience all of these seasons in your area?



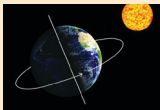
What are the sights around you during different seasons?
Discuss in class and complete the list given below.

Summer season	Rainy season	Winter season
• waterbodies dry up	• rivers overflow	• snowfall in areas with a high altitude
•	•	•
•	•	•

Though different seasons are experienced in this way in Kerala, they are experienced differently in other regions of the Earth. These seasonal changes are caused by the revolution of the Earth and the fluctuations of the solar energy received on the Earth. With the seasonal changes, there are changes in the atmosphere and nature.



Complete the table below based on the two main motions of the Earth- rotation and revolution.

 Rotation	 Revolution
• earth spins on its axis	•
•	• seasons occur

The Weather and the Climate

Under 17 Cricket: Final match cancelled due to rain

Kochi: The Under-17 cricket final match scheduled yesterday was cancelled due to unexpected torrential rains. Weather forecast says that it is likely to have strong wind and rain for the next three days.

Haven't you read this news? What was the situation that led to the cancellation of the cricket match? Sometimes these changes in the atmospheric conditions occur due to changes in weather.

Weather

Weather is the atmospheric condition experienced at a certain time in an area. Humidity, heat, rain, wind, clouds, etc. in the atmosphere at a certain time influence the weather conditions.

Climate

Climate is the average daily weather conditions experienced in an area over a long period.

Heat Rises: Alert in the State

Snow Falls again in Himachal: Holidays for Schools

Heavy Rain: Orange Alert in 5 Districts

Strong Winds Likely: Fishermen Warned against Venturing into Sea



How helpful are the accurate and scientific daily weather warnings in daily life? Discuss.

Climate and the Life of People



S.K. Pottekkatt

Buses, lorries, and cars start running on the heart of the frozen lakes. Every corner bustles with winter sports such as skiing and skating. The roads are covered with snow most of the year, making it very difficult and expensive to keep them safe and beautiful...Kaya said, "if you want to see the true beauty of Lahti, you should visit during winter." The ground will be covered with white snow and all the trees will stay like tassels made of white paper... How eager the children are to play in the snow! Night time lasts for six months then, with daylight for an hour or two to the maximum. The snow-white landscape and the light of the sky together create the effect of moonlight.



Haven't you read the note? You have read the part that mentions the life of the people in the snowy areas by famous travelogue writer S. K. Pottekkatt in the book 'Pathirasuryante Nattil.' What are the special characteristics of this area?

-
-
-
-

The Land of the Midnight Sun



Norway is a country known as the land of the midnight Sun. Norway is located in the northern part of Europe. The northernmost regions of Norway which are covered with snow for most of the year, experience six months of continuous day and six months of continuous night.



Locate Norway on the atlas.

Let's see how life is organised in this sparsely populated snowy region.

The people here wear air-tight footwear made of leather and clothes made of fur. It is a common sight to watch the local people called 'Inuit,' travelling on flat sledges pulled by domesticated dogs. During the winter season which lasts for six months, they do not leave their dwellings which is called an 'Igloo.' The chief plant species here are ferns and moss, which survive extreme winter. The chief species of animals are whales, fish, snow owls, seals and polar bears. Hunting and fishing are the means of livelihood of the people.



Sledge



Igloo

Igloo

The Inuit or Eskimos are an indigenous people living in the polar regions. Igloos are houses built by them with blocks of ice.



Prepare, with the help of your teacher, a digital album on the features of snow-covered areas and present it to the class.



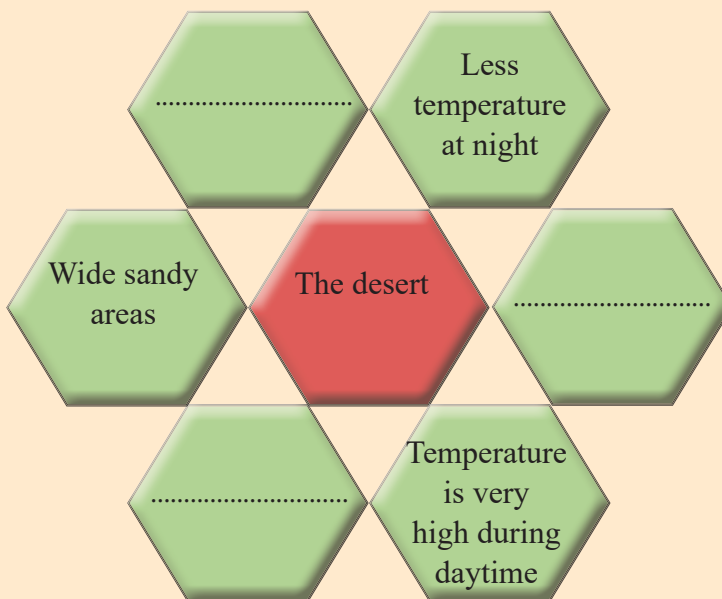
Look at the pictures



Desert

Tropical deserts are landmasses with very different geological features from the polar regions. Large area of sand and sand dunes are the specialty of this region. Here, the temperature is very high during the day and at night the temperature is very low. These areas, with very little rainfall, experience high temperatures, dry winds, and water scarcity. These areas are less populated. Climate-adapted lifestyles exist in tropical deserts. Continuous drought and sandstorms are other characteristics of deserts. Loose clothing and headress that covers the face are characteristics of desert dwellers. Using camels for carrying goods and transportation is a common sight in deserts.

Complete the chart by writing down the other features of desert regions.



The regions with such characteristics have a different way of life adapted to the climate. We have discussed how the physical diversity of polar regions and desert regions affects the lives of the people there. Agriculture, occupation, food, clothing, house construction, celebrations, etc. of a region are all shaped according to the climate of that place. However, studies show that unscientific human interventions cause changes in the natural environment. As a result, there are significant changes in the climate around the world today.

Climate Change



I come from Kenya where 20 crore people are suffering from the adverse effects of climate change. There is severe drought and we have not had rain for two years. Scientists predict that it will be the same in the third year also. We don't get sufficient rain. Without rain, all the rivers have dried up and heat waves are sweeping through the land. Please open your hearts. All our crops have dried up. Animals and humans are dying. If this continues, half of us will have been wiped out by 2025. The decisions in this conclave will be decisive in bringing back rains. Decide whether our friends, the children, will get food and water. Please open your hearts. Please open your hearts...



You have read a plea to world leaders by Elizabeth Wathuti, a schoolgirl from Kenya, at the United Nations Climate Conference in Glasgow on 31 October 2021. Climate change is one of the most complex issues that is faced by the world today and the generations to come. An important factor influencing the climate of a region is the atmospheric conditions of that region. Fluctuations in atmospheric temperature lead to climate change. Climate change is a slow process on the Earth. Even slight changes in climate have a significant impact on nature. How can we detect climate change?

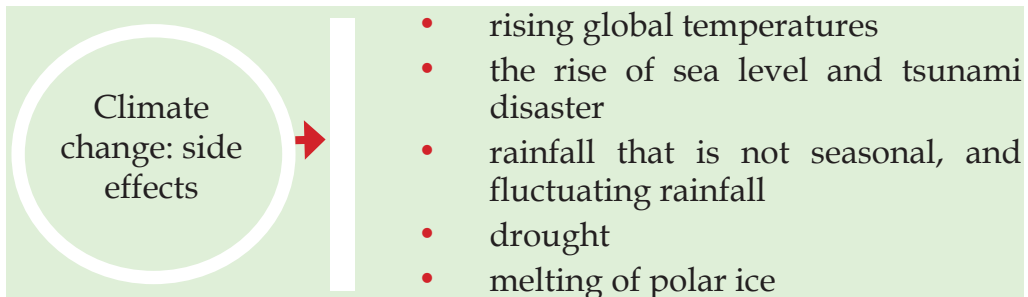
Given below are some pictures from the exhibition conducted at Anu's school in connection with the World Environment Day.



Observe the pictures. Natural calamities occurring on the Earth due to climate change are given in the pictures. What are they?



Let's check the side effects of climate change.



Uncontrolled use of natural resources and unscientific construction activities affect the very existence of the Earth adversely.

Observe the pictures.



Many unscientific human activities cause climate change. Identify them from the picture and note down.

- toxic gases emitted from vehicles
- deforestation
-
-

Climate change affects all living things on the Earth in many ways. It also causes the extinction of many species. Even natural disasters are often caused by climate change.



Prepare a wall magazine, with the help of your teacher, on the species that face the threat of extinction.

The Government of Kerala has been devising and implementing various schemes to control the human activities that cause climate change and also to protect the environment. Haritha Keralam Mission is an example to this.

Haritha Keralam Mission

A scheme implemented by the government laying emphasis on the areas of soil and water conservation, sanitation, waste management and organic agriculture. Haritha Karma Sena, Pachathuruth, etc. are the notable action programmes of Haritha Keralam Mission.



Prepare posters to create awareness of climate change among people and display them in the class.



The beautiful earth that we live in and its resources belong to future generations too. So, we are bound to use the natural resources available to us today with care. By living in harmony with nature, we can fight together against the great menace of climate change. It is the duty of each one of us to ensure the conservation of nature to mitigate climate change. Actions for environmental protection can start from our surroundings.



What environmental actions can you take to mitigate climate change? Post your suggestions on the bulletin board in your class.

- reduce air pollution
- prevent deforestation
- reduce the use of plastic
- increase the use of organic fertilisers
-
-
-
-
-



Extended Activities

1. Let's observe the calendar.

Observe the calendar of the current year and find the time of sunrise and sunset on the dates given below and complete the table.

	Date	19	20	21	22	23
	Month					
Sunrise	June					
	December					
Sunset	June					
	December					

Is the time of sunrise and sunset on the table the same? What difference did you find in the length of night and day? Record the information you find in your observation diary.

2. Collect news and pictures about the Sun, planets and other celestial bodies and prepare an album.
3. Let's prepare an observation calendar
Observe the seasonal changes in nature in your area and record them regularly in a notebook. Make the observation calendar attractive by including pictures.
4. Prepare a digital presentation titled 'Climate and the Life of the People in Desert and Polar Regions' based on the given points.

Indications

- food
 - style of dressing
 - occupation
 - housing construction
 - flora and fauna
5. Prepare a magazine by collecting more information and including pictures about the solar system. Provide a suitable title to the magazine.

The Law and The Society



Observe the picture.

The picture shows friends playing 'Kulam Kara'? Have you ever played this game? Shall we play this game?

What are the rules of the 'Kulam Kara' game?

-
-

All games have certain rules.

If we fail to follow the rules of the games we are involved in, can we continue to play?

Like this, we have to follow certain rules and guidelines for the smooth functioning of the school. What are they?

- follow the time schedule
- wear the school uniform

What will happen if these are not followed?



Discuss in groups and prepare a chart showing rules and guidelines to be followed in the school and present them to the class.

What is Law?

Just like following the rules and guidelines in school, it is essential to follow certain rules and guidelines for the survival of the society.

Law is the accepted set of rules and regulations for the existence and smooth functioning of the society.

Humans are social animals. Laws are essential to ensure a better life and protection for every individual in the society. Laws are meant for the welfare of everyone in the society.

Certain conditions and restrictions on the character, conduct, actions, freedom, rights, etc. are essential for the members of a social group. Public interest also needs to be considered while protecting individual interests. In such cases, the society needs a system. The laws perform this function.

What happens to the society if laws are not followed?

If the rules are not followed, conflicts arise. This endangers the existence of the society. Therefore, violation of rules is punishable.

Laws are formed mainly in two ways.

- laws or rules formed through social norms or practices
- laws formed by systematic mechanisms

All the laws that existed in the ancient society were formed from norms or practices.

Generally, these were not strictly

Social Norms



Social norms are the unwritten rules of beliefs, attitudes, and behaviours that are considered acceptable in a particular social organisation or culture.

written. They were implemented in the society through social norms and customs. Most of the rules and laws that were part of the social order have been either changed or modified over time.

What are the laws we are familiar with in our daily lives?

- Traffic rules •
- Right to Education Act •
- Child Rights Act

How were these laws formed?

In the modern era, such laws which are required for the nation are made by the respective governments through the state system called legislature.

Legislatures also make laws following strong public opinion, in addition to the laws made by the governments on their initiative.

Judgements of the court, interpretations of the law and recommendations made by the courts often contribute to the formation of new laws. In this way, laws are also formulated through the interventions of the courts of law.

State



A state is a politically organised population permanently residing in a territory that is defined within the jurisdiction of a government. The elements of a state are population, territory, government, and sovereignty.



Parliament of India



Kerala Legislative Assembly



You have understood how the laws were formed. List out examples of laws formed in different ways.

Stop... Look... Proceed...



(1)



(2)



(3)



(4)



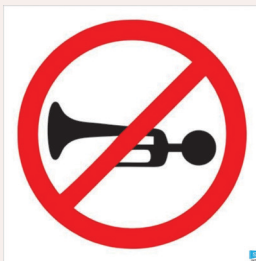
(5)



(6)



(7)



(8)



(9)

Observe and write the indications each of the road safety pictures shows.

(1) no cycling

(2)

(3)

(4)

(5)

(6)

(7) wear seatbelts

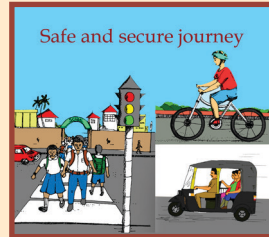
(8)

(9)

It is necessary to follow the rules indicated by such signs in our day to day life. Road safety laws are the ones formulated to make road traffic smooth and accident-free. Pedestrians as well as motorists are obliged

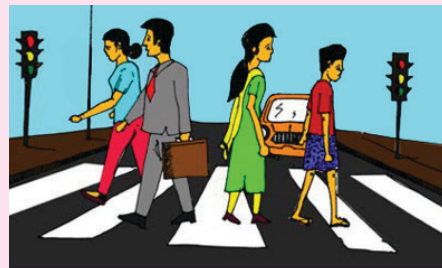
to follow these laws. By obeying traffic rules, one can ensure one's own safety and the safety of others.

Prepare placards and slogans and organise a rally on Road Safety Day to create awareness of road safety rules.

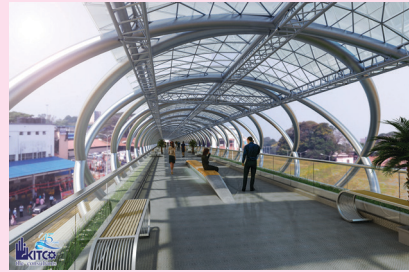


Attention Pedestrians

- In our country, vehicular traffic is on the left side of the road. If you walk on the right side of the road, you can see the oncoming vehicles clearly. If we walk on the left side, we can not see the vehicles coming from behind. This increases the risk of accidents.
- If there are sidewalks, use them while walking on the road. Walk only on the right side of the road, if there are no sidewalks.
- More than two people together should not walk on the same side of the road.
- Do not walk through areas where pedestrians are prohibited.
- Never walk on the road using mobile phones and headsets.
- Cross the road only after looking first to the right and then to the left to make sure that there are no vehicles. Cross the road only at zebra crossing if there are zebra lines.



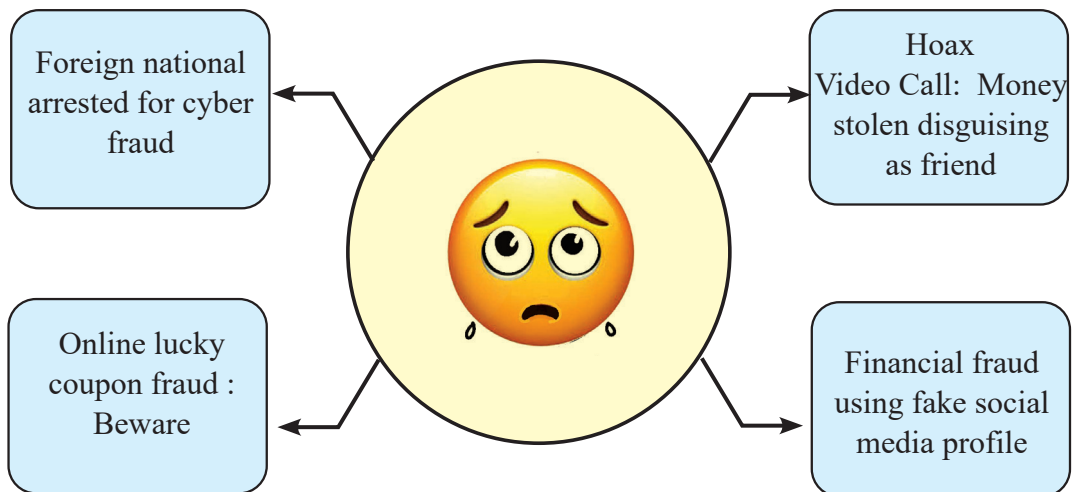
- Wait for the green signal for pedestrians to cross the road in areas where the traffic signal system is there.
- If there are foot-over bridges, skywalks and underpasses designed for pedestrians, use them.



Roleplay the instructions for pedestrian safety as different groups.



The Law and the Cyber World



Haven't you read the news headlines?

Look at the number of scams through social media. Are there rules to regulate these?

A lot of scams take place in internet games, mobile apps and online services. The law enacted

Information Technology Act 2000



This law was implemented to ensure legal recognition and security for transactions involving information technology. The act stipulates strict punishment for those involved in cybercrimes.

to get protection from such situations is the 'Information Technology Act 2000.' Similarly, various laws exist for the safety of people.

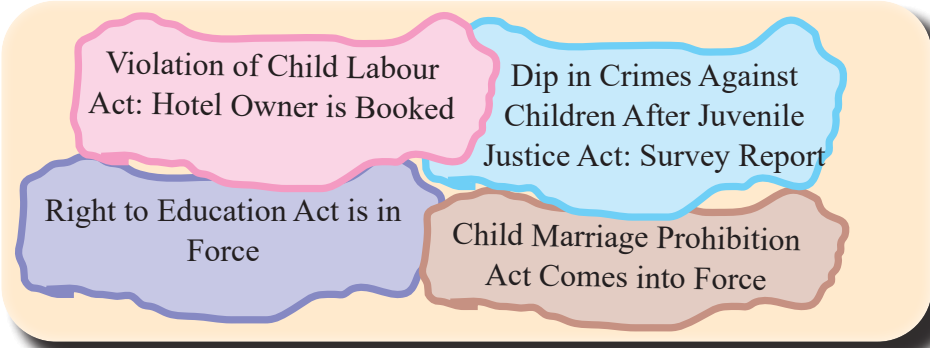


Find the laws you are familiar with and complete the table

Laws	Purpose
• Right to Information Act (2005)	• Ensure the right of the public to avail information.
•	•
•	•

Traffic laws, cyber laws, etc. are aimed at the general safety of the society. However, some laws are there for the protection of certain sections of the people.

Children and Their Rights



Violation of Child Labour Act: Hotel Owner is Booked

Dip in Crimes Against Children After Juvenile Justice Act: Survey Report

Right to Education Act is in Force

Child Marriage Prohibition Act Comes into Force

Look at the news collage. Which are the laws that are referred to here?

- Child Labour Prohibition Act
-

A safe and secure childhood is the right of every child. Our constitution guarantees certain rights to children for their safety. Besides, many laws and mechanisms are in place to protect child rights.

Child Labour Prohibition Act, 1986

Employing children under the age of 14 is an offence.

Right to Education Act, 2009

Free and compulsory primary education is guaranteed to children between the age of 6 to 14.

Commission for Protection of Child Rights

The National Commission for Protection of Child Rights and the State Commission for Protection of Child Rights are functioning at the national and state levels respectively to protect the rights of children.



Prepare a speech to be delivered in the 'Balasabha' regarding the rights of children.



Juvenile Justice Act, 2015

The Juvenile Justice Act has been in force since 2015 to ensure a safe and secure childhood. According to this law harassing and neglecting children, making them beg, forced labour, giving them drugs and using them for drug peddling are punishable. In case of such a violation of rights, the State Child Rights Protection Commission shall be approached.



November 20
World Child Rights Day



June 12 is Anti-Child Labour Day

Child Helpline Number: 1098

POCSO Act, 2012

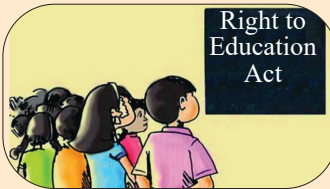
(Protection of Children from Sexual Offences Act, 2012)



The POCSO Act (Protection of Children from Sexual Offences Act, 2012) is a law that has been enacted to protect children from sexual assault regardless of gender. Government of India implemented this act by accepting the recommendations of the United Nations Convention on the Rights of Children in 1989.



Prepare posters that spread the message of child rights.



Rule of Law

We are now familiar with different laws. Our social life proceeds smoothly as we obey these rules. All citizens are equal before the law. The rule of law is a state of living subject to the equality of protection ensured by law.

Dispute Resolution Mechanisms

Whom do you approach for redressal measures in case of any violation of rules in your school?

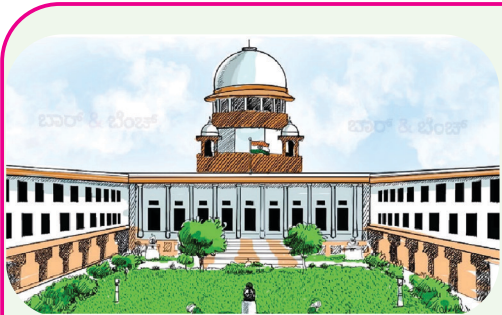
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Which are the agencies we approach to ensure the rule of law and find solutions to the instances of disputes and conflicts in the society?

- Local Self-Government Vigilant Committees
-
-

The duty of police is to maintain law and order. Courts have the power to resolve disputes and impose penalties/punishments.

Observe the details about the courts given below.



Supreme Court

The Supreme Court is the highest court of law in India. It is located in New Delhi.

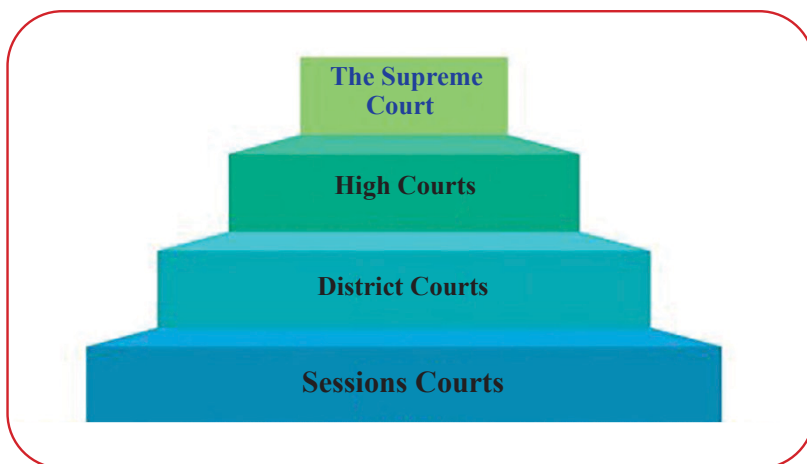


High Court of Kerala

The High Court is the highest court of law in the state. The Kerala High Court is located at Ernakulam.

Apart from the Supreme Court and High Courts, various types of courts are functioning in our country.

Observe the hierarchy of courts..



The chief duty of the courts is to ensure the supreme power of law. We can have a smooth social life as we follow the rules. It is the duty of each of us to recognise this and act accordingly.

Conduct an interview with legal experts, gather information about the laws concerning children and prepare notes.



Extended Activities

1. Observe Road Safety Week under the auspices of the Social Science Club.
2. Organise class-level interviews with childline workers.
3. Make class-level rules with the help of the teacher.
4. Visit the nearby police station, observe the activities there and prepare a note.
5. Observe the Local Self-Government Vigilant Committees and prepare an observation report on their dispute resolution mechanisms.
6. Organise a seminar on the topic, 'Traps in the Cyberspace.' Make use of the services of experts.

[illegible]

CONSTITUTION OF INDIA

Part IV A

FUNDAMENTAL DUTIES OF CITIZENS

ARTICLE 51 A

Fundamental Duties- It shall be the duty of every citizen of India:

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers, wild life and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievements;
- (k) who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between age of six and fourteen years.

CHILDREN'S RIGHTS

Dear Children,

*Wouldn't you like to know about your rights? Awareness about your rights will inspire and motivate you to ensure your protection and participation, thereby making social justice a reality. You may know that a commission for child rights is functioning in our state called the **Kerala State Commission for Protection of Child Rights**.*

Let's see what your rights are:

- Right to freedom of speech and expression.
- Right to life and liberty.
- Right to maximum survival and development.
- Right to be respected and accepted regardless of caste, creed and colour.
- Right to protection and care against physical, mental and sexual abuse.
- Right to participation.
- Protection from child labour and hazardous work.
- Protection against child marriage.
- Right to know one's culture and live accordingly.
- Protection against neglect.
- Right to free and compulsory education.
- Right to learn, rest and leisure.
- Right to parental and societal care, and protection.

Major Responsibilities

- Protect school and public facilities.
- Observe punctuality in learning and activities of the school.
- Accept and respect school authorities, teachers, parents and fellow students.
- Readiness to accept and respect others regardless of caste, creed or colour.



Contact Address:

Kerala State Commission for Protection of Child Rights

'Sree Ganesh', T. C. 14/2036, Vanross Junction

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Email: childrights.cpcr@kerala.gov.in, rte.cpcr@kerala.gov.in

Website : www.kescpcr.kerala.gov.in

Child Helpline - 1098, Crime Stopper - 1090, Nirbhaya - 1800 425 1400

Kerala Police Helpline - 0471 - 3243000/44000/45000

Online R. T. E Monitoring : www.nireekshana.org.in