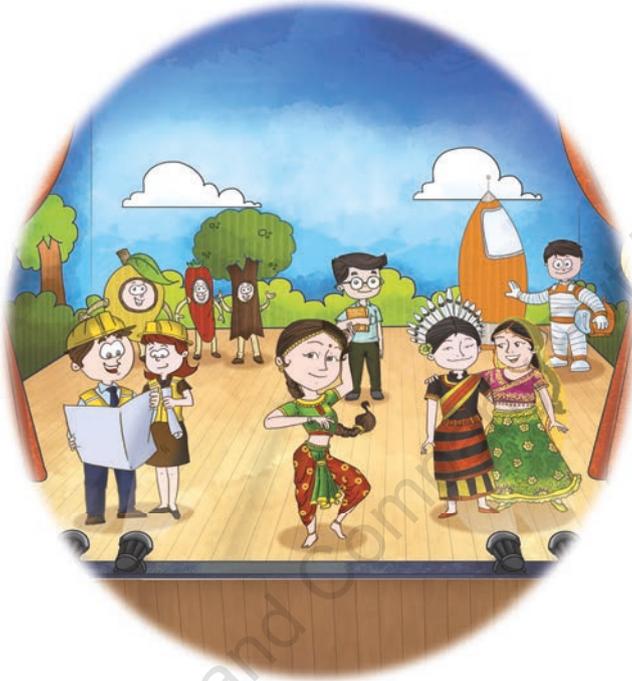


# It's All About Us

Social Studies for Class 5



M P Rozario • Ranjana Gupta

**This Book Belongs to:**

Name .....

Roll No .....

Class and Section .....

School .....





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Phone: 23672080-81-82, 9899107446, 9911310888; Fax: 91-11-23677446

www.schandpublishing.com; e-mail : helpdesk@schandpublishing.com

Branches :

Ahmedabad	: Ph: 27541965, 27542369, ahmedabad@schandpublishing.com
Bengaluru	: Ph: 22268048, 22354008, bangalore@schandpublishing.com
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Dehradun	: Ph: 2711101, 2710861, dehradun@schandpublishing.com
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Hyderabad	: Ph: 27550194, 27550195, hyderabad@schandpublishing.com
Jaipur	: Ph: 2219175, 2219176, jaipur@schandpublishing.com
Jalandhar	: Ph: 2401630, 5000630, jalandhar@schandpublishing.com
Kochi	: Ph: 2809208, 2808207, cochin@schandpublishing.com
Kolkata	: Ph: 22367459, 22373914, kolkata@schandpublishing.com
Lucknow	: Ph: 4026791, 4065646, lucknow@schandpublishing.com
Mumbai	: Ph: 22690881, 22610885, mumbai@schandpublishing.com
Nagpur	: Ph: 6451311, 2720523, 2777666, nagpur@schandpublishing.com
Patna	: Ph: 2300489, 2302100, patna@schandpublishing.com
Pune	: Ph: 64017298, pune@schandpublishing.com
Raipur	: Ph: 2443142, raipur@schandpublishing.com (Marketing Office)
Ranchi	: Ph: 2361178, ranchi@schandpublishing.com
Sahibabad	: Ph: 2771235, 2771238, delhibr-sahibabad@schandpublishing.com

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# Preface

*It's All About Us* is a series of Social Studies textbooks for classes 3 to 5. The series follows the latest syllabus guidelines of the Council for the Indian School Certificate Examinations. The books have interesting features that encourage the learner to ponder, comprehend and infer the knowledge from the content that has been thoughtfully designed and presented.

The salient features are:

- **Key Concepts**—from the syllabus lists what has been covered in the chapter
- **Stop to Answer**—questions within the lesson that will enable the learners to ponder about the topic
- **Spotlight**—an attractive doublespread that displays pictorial snippets with additional and interesting information on a topic discussed in the book
- **New Words**—provides meanings of difficult words used in the chapter
- **Recap**—a quick recapitulation of the main points learnt in the chapter
- **Exercises**—interesting end-of-the-lesson exercises in accordance with the syllabus to discuss and test the learning and understanding of the topic
- **Picture study**—allows to gauge the observational skill of the students and also their interpretation of the topic discussed
- **Project work**—project given at the end of each lesson for application of knowledge learnt
- **Worksheets**—focuses on assessment and evaluation

We hope that the series will be useful for both teachers and students.

# Key Features

**Key Concepts** Topics to be taught in the chapter given in simple bullet points

## Key Concepts

- Invention of the wheel and beginning of transport
- Reaching distant places
- Trade and voyages
- Modern means of transport

## Good to know!

India sent its last telegram on 15 July 2013, 163 years after its first telegram was sent under British rule from Calcutta to Diamond Harbour.

**Good to know!** Snippets in-between chapters that provide interesting and additional information related to the topic

**Stop to Answer** Extrapolatory and short-answer type questions within the chapters to test learning

## Stop to Answer

- Name the two forms of citizenship.
- State two features of the Indian Constitution.

**New Words** Provides meanings of difficult words used in the chapter

## New Words



**Weather**

: the atmospheric conditions at a given place and at a given time

**Climate**

: average weather conditions for a long period of time

**Climatic zones**

: this includes the whole of that area on the Earth that has almost uniform conditions of relief features, temperature, rainfall, soil and vegetation as well as human activities

**Recap** Quick recapitulation of the main points learnt in the chapter

## Recap

- Natural vegetation is the vegetation of a region that grows naturally.
- There are five major kinds of forest in India - evergreen rain forests, deciduous forests, coniferous forests, thorny scrub forests and tidal forests.
- Forests should be conserved as they are useful to us in many ways.
- The percentage of forest cover in India is decreasing day by day.
- Various movements have been started to conserve forests such as Chipko Movement, Van Mahotsav, etc.



# Syllabus

## SOCIAL STUDIES

The present curriculum of Social Studies includes diverse concerns of society and a wide range of content drawn from the disciplines of History, Civics and Geography. The children are introduced to their past through their heritage, family system, changes around them, national and cultural events on the basis of evidences and varied sources. It also enables them to participate effectively in society and explain their relationship to the civic society, public and private property, governance and their role in it.

### Theme 1: Evolution of Mankind

The theme “Evolution of Mankind” enables children to become aware and appreciate how man has evolved through the ages. It enables them to understand how constant evolution has made significant changes in the lifestyle of mankind. The pedagogies equip them with skills to make a comparative study of the different ages.

#### Learning outcomes

Children will be able to:

- identify the stages of the evolution of mankind;
- list the sources of evidence of man’s evolution;
- identify, compare and contrast the features of the four stone ages;
- identify and reflect on the stages of evolution in modes and system of transport and communication;
- discuss and appreciate the developmental process of human life on earth.

### Evolution of Mankind

Key Concepts/Concerns	Suggested Transactional Processes
<ul style="list-style-type: none"> <li>■ <b>Evolution of mankind:</b> <ul style="list-style-type: none"> <li>* Brief introduction of story of Human evolution on earth</li> <li>* Sources/evidences (fossils, bones, utensils, cave paintings, tools, etc.)</li> </ul> </li> <li>■ <b>The four stone ages:</b> <ul style="list-style-type: none"> <li>* Paleolithic</li> <li>* Mesolithic</li> <li>* Neolithic</li> <li>* Chalcolithic</li> </ul> </li> <li>■ <b>Iron age</b></li> <li>■ <b>Evolution of Transport and Communication:</b> <ul style="list-style-type: none"> <li>* Invention of the wheel and beginning of transport.</li> <li>* Reaching distant places.</li> <li>* Trade and voyages.</li> <li>* Modern means of transport.</li> <li>* Need for writing.</li> <li>* Use of pigeons</li> <li>* Invention of telephone and telegraph</li> <li>* Printing press,</li> <li>* Computers</li> <li>* Satellites</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Discussing and mind mapping to explain the sources of evidence to trace human evolution.</li> <li>■ Providing information about the four stone ages and the iron age through videos and PPTs followed by discussions.</li> <li>■ Collecting information using digital media on the evolution of mankind and on early archaeological sites in India.</li> <li>■ Arranging a visit to a museum and to an archaeological site followed by a class discussion.</li> <li>■ Comparing and contrasting means of transport through the ages</li> <li>■ Discussing and analysing how the evolution of transport and physical features of a place helped trade and commerce to flourish.</li> <li>■ Showing videos and/or displaying books about famous voyages.</li> <li>■ Discussing the evolution of communication and depicting this through a timeline (from pigeons to satellites).</li> <li>■ Making a Power Point Presentation on the four Stone age and Iron age.</li> <li>■ Organising Activity:           <ul style="list-style-type: none"> <li>* Making a chart by groups of children to depict the sources of evidence to trace evolution of mankind.</li> </ul> </li> <li>■ Role play:           <ul style="list-style-type: none"> <li>* <i>On the life of early men.</i></li> <li>* <i>On Gulliver’s Travel</i></li> </ul> </li> <li>■ Guest Lectures:           <ul style="list-style-type: none"> <li>* <i>Inviting a historian and discuss – How do we trace history through archaeological sources?</i></li> </ul> </li> <li>■ Debate and discussion on the life before the invention of printing press.</li> </ul>

Suggested Learning Resources	
<ul style="list-style-type: none"> <li>■ Collecting information from digital media.</li> <li>■ Videos and PPTs.</li> <li>■ Pictures and documentaries on early man.</li> <li>■ Clay Tablets and sticks to write with.</li> <li>■ Videos on archaeological sites.</li> <li>■ Old newspapers for making homemade paper.</li> </ul>	<ul style="list-style-type: none"> <li>■ Flashcards, pictures and charts showing buildings and monuments.</li> <li>■ <i>Amar Chitra</i> Katha.</li> <li>■ Videos and books on famous voyages.</li> <li>■ Guest lecture</li> </ul>
<b>Integration:</b> Arts Education, Science, Languages	<b>Life Skills:</b> Sharing, working in groups, leadership.

### Theme 2: The Constitution of India—Basic features

‘The Constitution of India- Basic Features’ familiarizes children with the Indian Constitution and the form of governance in the country. It aims in helping to develop in them a sense of responsibility and realize the importance exercising rights and duties as a citizen. It will also enable children understand the importance and the process of holding elections in a country.

Learning outcomes
Children will be able to: <ul style="list-style-type: none"> <li>■ analyse the need and importance of a Constitution;</li> <li>■ identify and list the fundamental rights and duties as a good citizen;</li> <li>■ state the features of the Indian government;</li> <li>■ illustrate the stages of election;</li> <li>■ discuss the importance of choosing the right representative;</li> <li>■ describe the responsibilities of a citizen in a democratic polity.</li> </ul>

### The Constitution of India—Basic Features

Key Concepts/Concerns	Suggested Transactional Processes
<ul style="list-style-type: none"> <li>■ The Indian Constitution (formation, nature, need, and guiding principles).</li> <li>■ Fundamental Rights and Duties.</li> <li>■ Basic features of the democratic form of government.</li> <li>■ Importance of Elections.</li> <li>■ Responsibilities of a citizen in a democratic polity.</li> </ul>	<ul style="list-style-type: none"> <li>■ Showing the school almanac to explain the concept of the Constitution.</li> <li>■ Discussing and mind mapping to explain the nature, need, formation, and guiding principles of guiding constitution.</li> <li>■ Compiling a list of children’s rights and duties in school and at home. This can be followed by giving them information on Fundamental Rights and Duties.</li> <li>■ Conducting a class debate on rights and duties to make children aware of the ‘Fundamental Rights and Duties’.</li> <li>■ Facilitating a class discussion on the hierarchical structure in school to explain the structure of the Government of India.</li> <li>■ Acquiring knowledge through books, internet and encyclopaedias about the different types of government in the world.</li> <li>■ <i>Organising Activities</i></li> <li>■ Asking children to read the school Almanac and conduct a debate/quiz on the rules followed in the school.</li> <li>■ Draw a chart or make a power point presentation to show the structure of the Government of India.</li> <li>■ Conducting a class election to let the children have a hands-on experience of the steps and importance of a free and fair election.</li> </ul>

Suggested Learning Resources	
<ul style="list-style-type: none"> <li>■ Hands-on experiences.</li> <li>■ School Almanac.</li> <li>■ Class elections</li> <li>■ Drawing a chart</li> </ul>	<ul style="list-style-type: none"> <li>■ Reference Books</li> <li>■ Internet</li> <li>■ Encyclopaedia</li> <li>■ Audio visual aids.</li> </ul>
<b>Integration:</b> Languages	<b>Life Skills:</b> Interpersonal skills, cooperation and leadership qualities

### Theme 3: The Earth—Its Geographical Features

This theme will help children understand the importance of latitudes and longitudes to locate any place on the globe and map. Information on location and extent of Temperature zones of the earth will enable them to relate with their own region. In addition, they will understand what is climatic change and how this phenomenon plays out and affects the earth as a whole.

#### Learning outcomes

Children will be able to:

- discuss the terms—latitude and longitude;
- identify different places on the map with the help of latitude and longitude;
- explain the concept of the major temperature zones;
- differentiate between weather and climate;
- enlist the major temperature zones;
- identify climates and find out the reasons for climatic changes.

### The Earth—Its Geographical Features

Key Concepts/Concerns	Suggested Transactional Processes
<ul style="list-style-type: none"> <li>■ <b>Locating places on the Earth:</b> <ul style="list-style-type: none"> <li>* Latitudes (introduction, characteristics, important latitudes).</li> <li>* Longitudes (introduction, characteristics).</li> </ul> </li> <li>■ <b>Weather and Climate:</b> <ul style="list-style-type: none"> <li>* Difference between the weather and climate.</li> <li>* Factors that affect climate of a place.</li> </ul> </li> <li>■ <b>Solar and Lunar Eclipse</b></li> <li>■ <b>Major temperature zones of the Earth:</b> <ul style="list-style-type: none"> <li>* Torrid</li> <li>* Temperature</li> <li>* Frigid</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Using maps and the globe to understand and locate the important latitudes and longitudes.</li> <li>■ Explaining and facilitating children to find the difference in time zones.</li> <li>■ Studying the globe understanding and locating the three major temperature zones.</li> <li>■ Showing videos and /or diagrams to explain the temperature zones.</li> <li>■ Providing opportunities to children to share their personal experiences related to different weather and climates.</li> <li>■ Asking questions and facilitating discussion related to likes and dislikes about various weather conditions.</li> <li>■ Discussing on the factors that affect the climate of a place with examples.</li> <li>■ Discussing with diagrams the solar and lunar eclipses.</li> <li>■ Project work on the reasons that affect the climate of a place.</li> <li>■ Case study on the climate of a particular place.</li> <li>■ Collecting news clippings or TV reports on weather for a week and preparing a comprehensive report on it.</li> <li>■ Guest lecture by a specialist on making a weather forecast.</li> </ul>

#### Suggested Learning Resources

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| <ul style="list-style-type: none"> <li>■ Personal experiences of children.</li> <li>■ News clippings on weather report.</li> <li>■ Globe and maps, Digital globe</li> <li>■ Web sources</li> <li>■ Charts and posters, models, diagrams, etc.</li> </ul> | <ul style="list-style-type: none"> <li>■ Newspaper clippings.</li> <li>■ Project work.</li> <li>■ Case studies.</li> <li>■ Guest lectures.</li> </ul> |
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### Theme 4: India—A Diverse Country

The theme will help children realise the strategic importance of the location of India in relation to neighbouring and other countries of the world. They will also appreciate the diversity of climate and the natural vegetation of India.

#### Learning outcomes

Children will be able to:

- identify and locate India on the world map;
- locate neighbouring countries of India on the map;
- compare the size of India with neighbouring countries;
- relate climate to the different regions of the country;
- identify various types of vegetation found in India;
- relate and compare vegetation and climate in different parts of India;
- describe importance of vegetation and its conservation.

### India—A Diverse Country

Key Concepts/Concerns	Suggested Transactional Processes
<ul style="list-style-type: none"> <li>■ India: Location and extent</li> <li>■ India and its neighbouring countries.</li> <li>■ Climate of India (Different Seasons)                             <ul style="list-style-type: none"> <li>* Summer season</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Identifying and locating neighbouring countries of India on the World map.</li> <li>■ Comparing the size and extent of India with other countries.</li> <li>■ Discussing different types of climate in India and comparing the life of people living there.</li> <li>■ Discussing with reasons about the varied climatic conditions in different parts of the country.</li> </ul>
<ul style="list-style-type: none"> <li>* Winter season</li> <li>* Rainy (Monsoon) season</li> <li>■ Natural vegetation                             <ul style="list-style-type: none"> <li>* Tropical evergreen</li> <li>* Deciduous (monsoon forest)</li> <li>* Thorn and Scrub</li> <li>* Montane forest</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Preparing a project report by groups of children or individually on the climatic conditions of a place with reasons.</li> <li>■ Showing Videos and/ or PPTs on different types of natural vegetation in different geographical conditions in the country.</li> <li>■ <u>Organising activities</u> <ul style="list-style-type: none"> <li>* Making charts/posters on conservation of natural vegetation.</li> <li>* Encouraging children to collect/write poems/songs on different seasons in India.</li> <li>* Making charts or posters on different types of trees and plants.</li> </ul> </li> </ul>
<b>Suggested Learning Resources</b>	
<ul style="list-style-type: none"> <li>■ Personal experiences.</li> <li>■ Wall maps of the world, India—Political and Physical.</li> <li>■ Models and charts on different types of vegetation.</li> </ul>	<ul style="list-style-type: none"> <li>■ Audio-visual materials and web sources.</li> <li>■ Poems and songs.</li> </ul>
<b>Integration:</b> Science	<b>Life Skills:</b> Environmental conservation, empathy.

### Theme 5: The Environment—Major Concerns

‘The Environment—Major Concerns’ aims at enabling children to understand the components of the environment and interdependence of people living in different regions of the world. Issues related to global warming and its effects and precautions related to natural disasters will also be dealt with to create an awareness on measures that need to be taken to reduce the adverse impact on the environment.

#### Learning outcomes

Children will be able to:

- identify the components of the environment;
- discuss critically the reasons for interdependence of people living in different parts of the world;
- explain reasons for ozone depletion;
- describe change in temperature due to global warming and its impacts;
- demonstrate rules to be followed to reduce pollution;
- discuss the precautions that need to be taken at the time of natural disasters.

### The Environment—Major Concerns

Key Concepts/Concerns	Suggested Transactional Processes
<ul style="list-style-type: none"> <li>■ Components of the Environment (biotic and abiotic).</li> <li>■ Interdependence of and between different regions of the world.</li> <li>■ Impact of local events on global environment, global warming,</li> </ul>	<ul style="list-style-type: none"> <li>■ Showing PPTs/videos and encouraging discussions on the components of environment</li> <li>■ Discussions on how do people living in different regions depend on each other.</li> <li>■ Providing opportunities to enlist biotic and abiotic components of the environment.</li> <li>■ Creating situation to analyse various reasons for global warming.</li> <li>■ Showing videos and sensitising on harmful impacts of global warming</li> <li>■ Discussing precautions to be taken at the time of natural disasters.</li> </ul>

<ul style="list-style-type: none"> <li>■ Natural disasters:             <ul style="list-style-type: none"> <li>* Earthquake,</li> <li>* Cyclones,</li> <li>* Floods,</li> <li>* Droughts,</li> <li>* Volcanic eruptions,</li> <li>* Landslides</li> </ul> </li> <li>■ Effects and Precautions of natural disasters.</li> </ul>	<p><u>Organising activities</u></p> <ul style="list-style-type: none"> <li>■ Encouraging to prepare charts and writing slogans on global warming.</li> <li>■ Organising mock drills on natural disasters and related safety measures.</li> <li>■ Collecting newspaper clippings on natural disasters and writing report on it.</li> <li>■ Motivating children to take a pledge to plant trees and not burst crackers.</li> <li>■ Conducting cleanliness drive</li> <li>■ <b>Role Play:</b> <ul style="list-style-type: none"> <li>* Performing Street plays to educate the mass about the effects of pollution</li> </ul> </li> </ul>
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<b>Suggested Learning Resources</b>	
<ul style="list-style-type: none"> <li>■ Classroom discussions</li> <li>■ Narratives and life experiences.</li> <li>■ Newspapers, magazines, journals, charts, posters.</li> <li>■ Audio-visuals and web sources.</li> </ul>	<ul style="list-style-type: none"> <li>■ Charts and Slogans.</li> <li>■ Mock drills.</li> <li>■ Role Play.</li> <li>■ Tree Plantation.</li> </ul>
<b>Integration:</b> Languages	<b>Life Skills:</b> Awareness on Environmental concerns

### Theme 6: Natural Resources

This theme focuses on making children aware about the judicious use of natural resources since they are limited and also concerns related to the utility and availability of these resources. It will help children in the optimum use of resources with alternatives. This understanding is vital in today's ever-growing need for these resources and conserving them for posterity.

<p><b>Learning outcomes</b></p> <p>Children will be able to:</p> <ul style="list-style-type: none"> <li>■ discuss and understand the term resources;</li> <li>■ compare and differentiate between renewable and non-renewable resources;</li> <li>■ identify and enlist the resources;</li> <li>■ discuss the use of resources in life;</li> <li>■ suggest ways to conserve resources.</li> </ul>
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### Natural Resources

Key Concepts/Concerns	Suggested Transactional Processes
<ul style="list-style-type: none"> <li>■ Meaning of resources.</li> <li>■ Renewable and Non-Renewable resources.</li> <li>■ Renewable resources – (air, water, soil, plants, animals, solar energy and wind energy) – brief description.</li> <li>■ Non-Renewable resources – (Coal and Petroleum, Minerals) – brief description.</li> </ul>	<ul style="list-style-type: none"> <li>■ Providing opportunities to children to share their experiences with peers and discuss about various aspects in the theme.</li> <li>■ Facilitating class discussion on the term resources and providing examples.</li> <li>■ Providing facilities to identify and enlist various resources they see around them.</li> <li>■ Providing opportunities in groups/individually to observe and discuss the differences between renewable and non-renewable resources.</li> <li>■ Assigning project work to children on causes and the importance/necessity to conserve our resources.</li> <li>■ Inviting experts to talk on the theme and discuss issues with children.</li> <li>■ Organising a role play session on life without petroleum resources.</li> <li>■ Writing poems on the benefits of Nature (the sun, water, soil, plants etc.) in enriching our lives.</li> <li>■ Exploring and enlisting ways to conserve different resources.</li> </ul>

<b>Suggested Learning Resources</b>	
<ul style="list-style-type: none"> <li>■ Pictures, charts and models.</li> <li>■ PPTs and Videos.</li> </ul>	<ul style="list-style-type: none"> <li>■ Guest Lecturers.</li> <li>■ Coal, petroleum, different minerals etc.</li> </ul>
<b>Integration:</b> Languages	<b>Life Skills:</b> Conservation of natural resources

## Theme 7: Major Occupations in India

Agriculture and industry are the two major occupations in India. This theme will help children understand the work, process and hardships related to these two occupations. They will also appreciate the hard work of people involved in providing us the finished products that enrich and facilitate our lives.

### Learning outcomes

Children will be able to:

- differentiate between man-made and machine made products;
- enlist the large-scale industries in our country;
- differentiate between raw material and finished products;
- compare old and new methods of farming;
- discuss our dependence on industries in day-to-day life;
- appreciate the skills of persons involved in crafts.

## Major Occupations in India

Key Concepts/Concerns	Suggested Transactional Processes
<ul style="list-style-type: none"> <li>■ <b>Agriculture:</b> <ul style="list-style-type: none"> <li>* Types of crops, Food Crop, cash crop,</li> <li>* Development of agriculture,</li> <li>* Livestock rearing (map work).</li> </ul> </li> <li>■ <b>Industries:</b> <ul style="list-style-type: none"> <li>* Major industries in India.</li> <li>* Large scale industries and small scale industries.</li> <li>* Other industries.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Providing opportunities to children to share their personal observations on various forms of occupations.</li> <li>■ Facilitating class discussions to provide opportunities to children to ask questions and narrate experiences on agriculture being the main occupation in India.</li> <li>■ Discussing old and new methods of cultivation in agriculture.</li> <li>■ Facilitating work in small groups for children to observe and compare the difference between a raw and a finished product.</li> <li>■ Showing samples of cash crops and food crops and narrating differences between them.</li> <li>■ Visiting to a field and interaction with the farmer.</li> <li>■ Taking children to a field and interacting with a farmer on soil, crops methods and income through cultivation, issues and hardships faced by them</li> <li>■ Providing opportunities to observe, identify and classify man-made and machine made things.</li> <li>■ Discussing the role of industries in our life.</li> <li>■ Collecting news/information on major industries in India and analysing the same.</li> <li>■ Taking children to local artisans or a crafts mela and organising their interaction / discussion with the crafts person.</li> <li>■ Taking children to an industry and discussing the various processes in the industry.</li> <li>■ Visiting to an industry, interaction with workers and observing various processes.</li> <li>■ Visiting to local artisans or a crafts mela.</li> </ul>

### Suggested Learning Resources

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|---|---|
| <ul style="list-style-type: none"> <li>■ Children's personal experiences.</li> <li>■ Samples of different crops.</li> </ul> | <ul style="list-style-type: none"> <li>■ Collection of Raw and Finished products.</li> <li>■ Local Artisans /Farmers/People involved in other occupations.</li> </ul> |
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**Integration:** Languages

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### Key Concepts

- Story of human evolution on Earth
- Sources/evidences (fossils, bones, utensils, cave paintings, tools, etc.)
- The four stone ages—Palaeolithic, Mesolithic, Neolithic, Chalcolithic

## EVOLUTION OF HUMANS

Human beings have been living on this planet for millions of years. Is it not interesting to know how our ancestors lived? Don't you find it interesting to know more about your grandparents and their grandparents?

Yes, as humans we are quite different from how our ancestors were. These changes that could be seen in the human race over the ages is known as evolution of humans. Evolution is responsible for making us different from our ancestors. The study of the evolution of man tells us about our origin and our ancestors.

These prehistoric humans from whom we have evolved are called hominids. Studies have shown that hominids lived on Earth about 4 million years ago. They were much like present-day humans. Africa is the place where the hominids once lived and it is here that their bones and other remains have been found by scientists. It has been concluded from their remains that the hominids looked a lot like the chimpanzees, orangutans and gorillas of Africa and South-East Asia.

### Types of Hominids

Let us study about the three types of hominids that have been identified—Homo habilis, Homo erectus and Homo sapiens.

- Homo habilis—They lived in groups for protection and hunting food. They are also known as the 'handy man'. They made tools for cutting, chopping, digging and also to protect themselves from wild animals.

#### Good to know!

Hominid remains have been found in the Hathnora village, near the banks of River Narmada in India. Part of a skull and some stone tools were found.

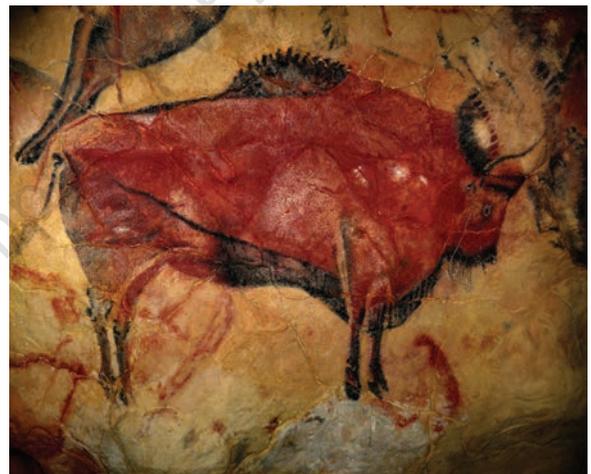
- Homo erectus—This hominid was also known as the ‘upright man’ for they walked erect on two feet. They made better tools than the Homo habilis. They hunted and learned how to make fire. They used fire to cook food, stay warm and drive away wild animals.
- Homo sapiens—Homo sapiens are the only species of humans surviving on Earth today. Instead of collecting food, they started producing food and began settling down.

### Stop to Answer

- Fill in the blanks with the correct answers:
  1. The ..... shared common features with animals like orangutans, chimpanzees, etc.
  2. The ..... walked erect on two feet.

## Neanderthals

They are believed to have lived around 150,000 years ago during the Ice Age. Their remains have been found in Germany in the Neander Valley. It is from there that they got the name Neanderthals. They were tall and strong and for their well-developed brain they are called the ‘Wise Men’. They started living in small communities and were the first ones to bury their dead. Neanderthals gradually died as they could not survive the harsh cold climate of the Ice Age.



*Cave painting by early humans*

## Cro-Magnons

They are also known as the ‘modern man’ and they appeared around 40,000 years ago in Asia and Europe. They were known as hunter gatherers as they gathered food by hunting animals or using parts of plants as food. They painted scenes of hunting, daily activities, etc. on the walls of caves where they lived.

## STONE AGE

The Stone Age was the time when the ‘early humans’ used mainly stones to make tools for various purposes. The specific features of this period are making of stone tools, discovery of fire, beginning of agriculture and invention of the wheel, which also led to the art of pottery.



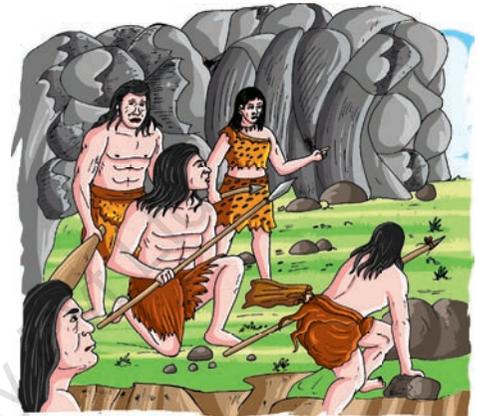
The Stone Age has four parts:

1. Old Stone Age or Palaeolithic Age
2. Middle Stone Age or Mesolithic Age
3. New Stone Age or Neolithic Age
4. The Copper Stone Age or the Chalcolithic Age

## The Palaeolithic Age

The Old Stone Age was the longest of the stone ages. It stretches from 50,000 BCE to 10,000 BCE. Large pieces of stones were chipped and shaped into various types of tools like hammers, scrapers and hand axes. These tools were blunt and heavy and were used mainly for cutting trees, digging up roots of plants from the soil and hunting animals.

Early humans were mainly hunters and food gatherers during this period. They ate fruits, leaves, berries, nuts, roots and seeds. Gradually they learnt how to make better tools. These tools helped them to hunt and fish. They lived in caves and on trees to protect themselves from the heat, cold, rain and wild animals. They used barks of trees, leaves and animal skin to cover their bodies.



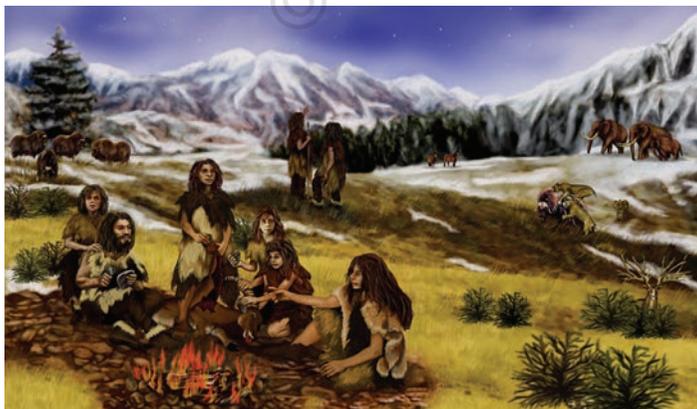
Palaeolithic humans lived in caves

## Discovery of Fire

Early humans were intelligent and keenly observed their surroundings. They understood that fire was produced by lightning. They also observed how forest fires burnt down the trees and forests. It is believed that the early people rubbed two stones together to produce sparks which helped them in lighting a fire.



Tools from the Stone Age



Fire—greatest discovery of early humans

Fire changed the life of early humans in various ways. Fire lit up their caves and kept them safe from wild animals. It also kept them warm during the cold winters. Early humans were also artistic. They painted pictures of animals and hunting scenes on the cave walls. They also made jewellery out of bone, stone, ivory and horns of animals.



## Mesolithic Age

The Mesolithic or Middle Stone Age extended roughly from 10,000 BCE to 8,000 BCE. This age represents a transition from Palaeolithic to Neolithic Age. Humans were still essentially hunters and food gatherers. Some started making primitive simple houses but most people lived in caves and rock shelters.

During the Mesolithic Age, stone weapons became smaller and sharper. Smaller tools called microliths replaced the earlier heavy tools.

## Neolithic Age

The Neolithic Age extended roughly from 8000 BCE to 4000 BCE. During the Neolithic Age, ancient humans learnt to make polished stone weapons. They also made axes, sickles, spears, bows and arrows. These new tools were stronger and much sharper than those used before. Three important developments of the Neolithic Age were (i) the beginning of agriculture, (ii) the invention of the wheel and (iii) the making of pottery.

### Beginning of Agriculture

In this age, instead of gathering food, humans started growing food. With time they realised that grains like wheat and rice could be stored for a long period of time. They domesticated animals like dogs, sheep, goats and cattle. They got milk, meat and skin from these animals. Bullocks helped them in farming while animals like camels, horses and donkeys were used for transporting people and heavy goods.

### Invention of Wheel

The most important invention in this age was the wheel. Perhaps the cutting of a log into circular pieces led to the invention of the wheel. When wheels were added to carts it helped humans to move from one place to another at a faster pace. It became easier to carry heavy goods from one place to another as well. Wheel also led to the invention of the potter's wheel. It was used to make clay pots and pans which were used to store grains.

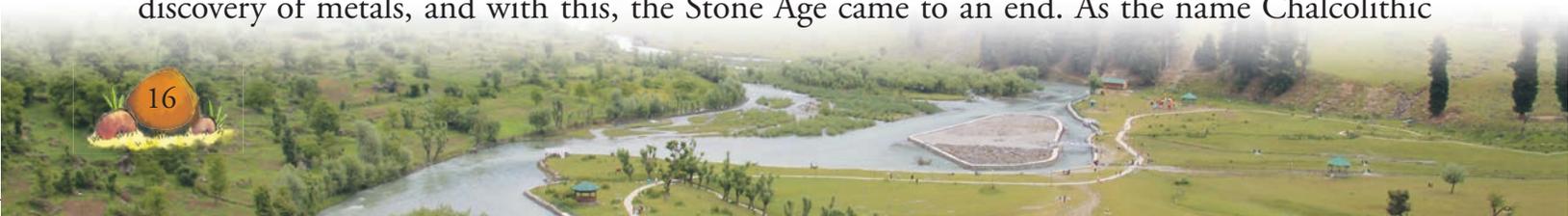
In the New Stone Age, humans began making houses of mud with thatched roofs. As humans began to grow crops, they needed to stay at one place for longer periods of time. They no longer needed to move from one place to another in search of food. This led to the development of first human settlements besides river banks.



*Early wheel*

## Chalcolithic Age

The Chalcolithic Age extended roughly from 4000 BCE to 2000 BCE. This age marked the discovery of metals, and with this, the Stone Age came to an end. As the name Chalcolithic



suggests (Chalco means copper and lithos means stone), people in this age used both metal and stone tools, utensils, weapons, etc. Copper was the first metal to be discovered. Copper weapons such as axes, knives, swords, etc. were much better and more useful than stone tools. In the course of time zinc and tin were also discovered. By mixing copper with tin humans learnt to make bronze. This period marks the transition from Stone Age to the Age of Metals.



## New Words

<b>Ancestors</b>	:	people who came before us and from whom we have evolved
<b>Prehistoric</b>	:	anything related to a period for which we have no written records or source
<b>Hominid</b>	:	early humans of prehistoric age from whom modern humans have evolved
<b>Homo habilis</b>	:	handy man or able man is a species of hominid that lived between 2.8 and 1.5 million years ago
<b>Ice Age</b>	:	a time in history when the temperature was very cold and large parts of the Earth were covered by ice.
<b>Homo erectus</b>	:	upright man is a species of hominid with fossils dating back to 1.9 million years ago
<b>Homo sapien</b>	:	present human species
<b>Neanderthals</b>	:	humans who appeared 150,000 years ago
<b>Palaeolithic Age</b>	:	early Stone Age when humans first began to make tools from stone
<b>Mesolithic Age</b>	:	period between Palaeolithic and Neolithic Ages marked by use of microliths
<b>Neolithic Age</b>	:	period of Stone Age marked by development of agriculture and use of polished stone tools

## Recap

- Hominids or the prehistoric man has undergone a process of evolution.
- Homo habilis, Homo erectus and Homo sapiens are the names given to the earliest hominids.
- Neanderthals and Cro-Magnons as hominids were more advanced than the handy man.
- Cro-Magnons made painting, jewellery and carved statues from stones and bones.
- Stone Age can be divided into four stages—Old Stone Age, Middle Stone Age, New Stone Age and the Copper Stone Age.
- Discovery of fire and invention of wheel improved quality of life for early humans.
- The Middle and New Stone Age bear evidence of domesticating animals, growing food grains, developing tools and pottery and the beginning of settled life.



## EXERCISE

### A. Write true or false.

1. Neanderthals were found in Africa. ....
2. Homo erectus is known as the 'upright man'. ....
3. Mud houses with thatched roofs were built in the Palaeolithic Age. ....
4. In the Palaeolithic Age, humans used skin of animals to make clothes. ....
5. Fire was invented during the New Stone Age. ....

### B. Fill in the blanks.

1. .... is the process that has brought the difference between hominids and modern man.
2. Hominids lived about ..... years ago.
3. Hominids bear resemblance to animals like ..... and ..... of Africa and ..... Asia.
4. Humans began to grow their own food in the ..... Age.
5. .... were known as the 'Wise Men'.

### C. Answer the following questions.

1. Who were called the 'upright man' and why?
2. How did Neanderthals get their name? Name the different types of hominids.
3. How were tools of Mesolithic and Neolithic Ages different from those of the Palaeolithic Age?
4. How was the wheel invented? How did it prove useful to early humans?
5. How did discovery of fire change the lives of early humans?
6. When did early humans begin to settle down and why?

### D. Picture study

Look at the picture.

1. How was fire used by early humans?
2. How do you think fire was discovered by early humans?



### E. Project work

Gather some pictures of early humans and the tools they used and paste them on a chart paper. Write down some specific characteristics of the hominids and state how they used the tools.



### Key Concepts

- Growth of civilizations in the Bronze Age
- Use of Iron
- Features of the Iron Age
- Rise of mahajanapadas

## GROWTH OF CIVILIZATIONS

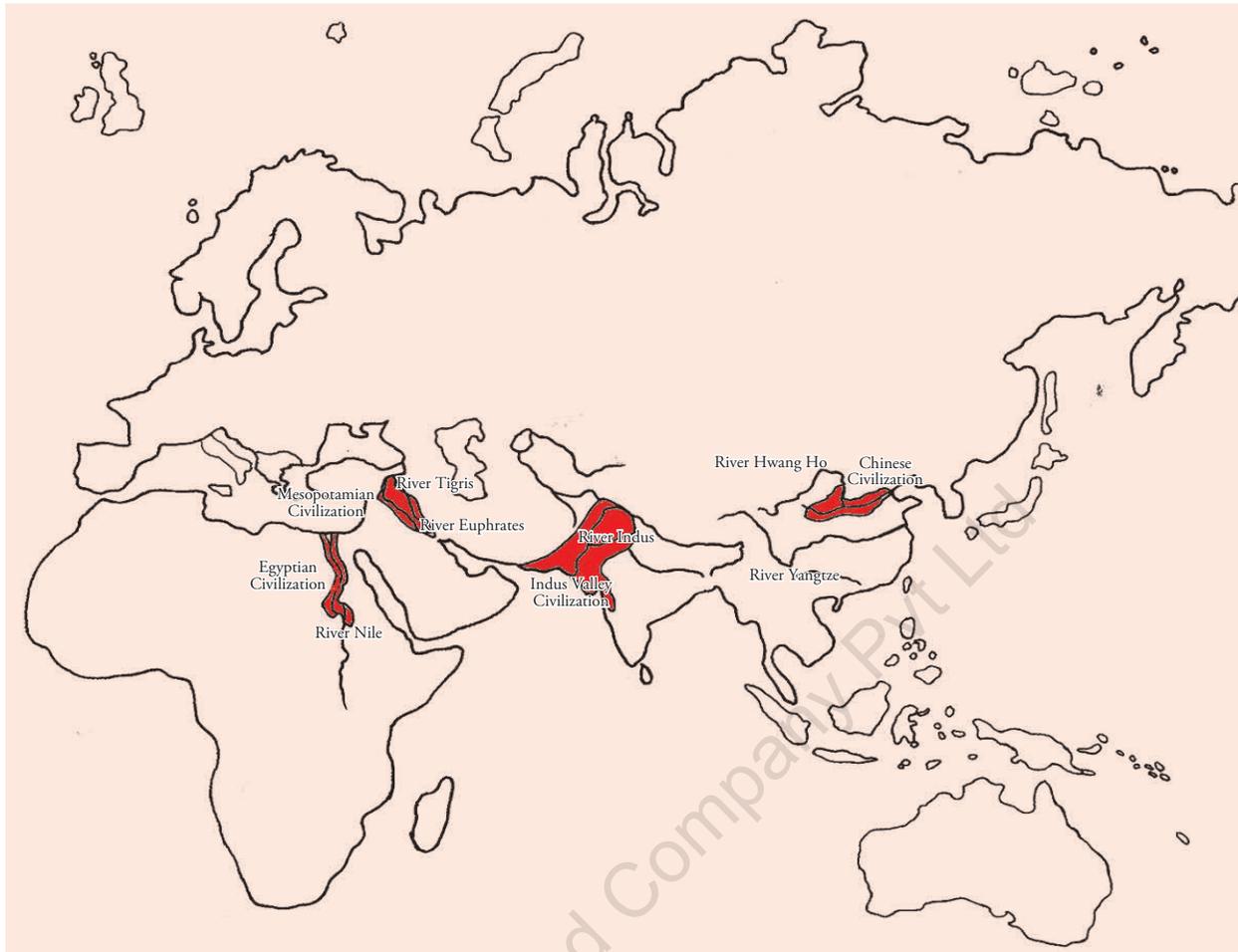
The Chalcolithic Age was followed by the Bronze Age when humans started using tools, weapons and utensils made of bronze extensively. During this age, people started practising agriculture and leading a settled life. They settled down in the river valley areas, because the land in these areas was fertile and water required for cultivation was available. Crops grew in plenty. Besides, clay for brick-making and pottery could also be gathered from river banks. Water also provided an easy mode of transportation both for people and goods.

Human beings settled down in groups. Living in groups made it necessary to have some common rules. New inventions also came about that made human lives easier and more comfortable. In the beginning, people grew their own food, wove their own clothes and made their own pots and pans. Gradually, methods of farming and tools improved. Soon a few people could grow enough food for all. Others were now free to take up other activities like jewellery making, weaving, carpentry, pottery, painting, sculpting, writing or building. This stage of human habitation is called civilization.

Thus, the earliest civilizations developed along the river banks—near the River Nile in Egypt, Euphrates



Seals from Indus valley civilization



*Ancient river valley civilizations*

and Tigris in Iraq, Yangtze Kiang and Hwang Ho in China and Indus in India. These rivers gave birth to what are known as River Valley Civilizations.

## **IRON AGE**

The period when bronze tools and utensils were replaced by iron tools and utensils is called the Iron Age. The earliest use of iron can be traced back to 2000 BCE. The time period of the Iron Age varies around the world. In Europe, Middle East and South Asia, it is believed that the Iron Age began around 1300–1200 BCE. But in China, the use of iron can be dated to around 600 BCE.

The manufacture and use of iron tools and utensils on a large-scale led to the growth and spread of civilization patterns. Iron tools were stronger and more sophisticated. They helped humans to clear dense forests and expand their area of settlement.



In India, the Iron Age corresponds roughly with the coming of the Aryans and the Vedic Age, and then with the age of Mahajanapadas.

### Good to know!

The Ancient Greek Civilization, the age of Athens and Sparta, belonged to the Iron Age.

## The Vedic Age

The Harappan Civilization came to an end around 1500 BCE. The Indus Valley area was brought under the occupation of a new group of people called the Aryans, who, most of the historians believe, came from the Central Asian region.

The arrival of the Aryans marks the beginning of a new era in Indian history. During this period, transformation of the nomadic life to a settled agricultural life took place. Increase in population and subsequent need for more pastoral land prompted the early Aryans to move out of their original homeland in Central Asia. Those who migrated to India came to be known as the Indo-Aryans.

### Early Vedic Age

The Vedic Age can be divided into two periods—Early Vedic Age and Later Vedic Age. The Early Vedic Age lasted from about 1500 BCE to 1000 BCE when the *Rig Veda* was composed. The Later Vedic Age continued from about 1000 BCE to 600 BCE when the other three *Vedas* were composed.

In the beginning, the Aryans settled in the region of the seven rivers or *Sapta Sindhu*—the Indus, Ravi, Beas, Jhelum, Chenab, Sutlej and Saraswati (now a dried river) that flow in modern day Afghanistan, Pakistan and Punjab in India. They called this region *Brahmavarta*.

### Stop to Answer

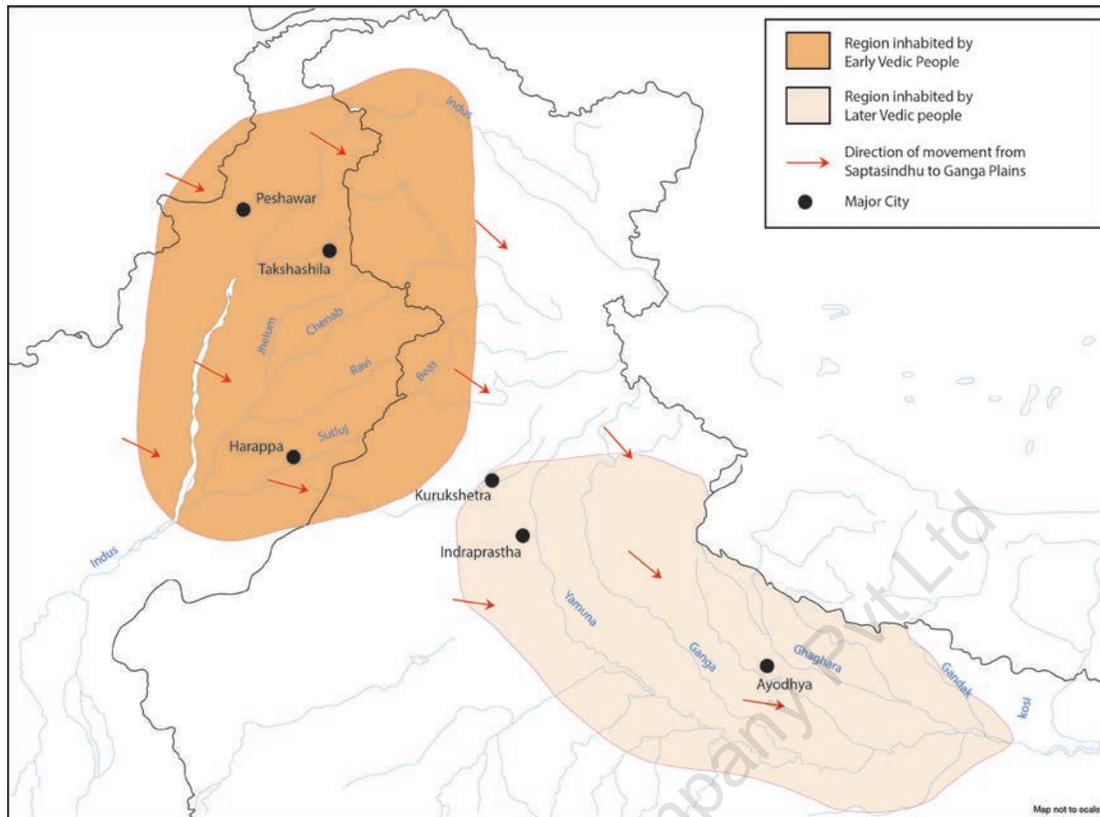
- Find out, what were the advantages of iron over copper and bronze.

To occupy the land, the Aryans had to fight with the native people whom they called *dasas* or *dasyus*.

### Later Vedic Age

The Later Vedic Age is also known as the Epic Age of Indian history. During this period, the Aryans pushed forward from the *Brahmavarta* region along the course of the rivers Ganga and Yamuna and gradually occupied the whole of Northern India. They cleared the forests and founded new settlements. The use of iron-axe helped them to clear the dense forests of the Gangetic Plains. They gave this region the name *Aryavarta*, the land of the Aryans.





Aryan settlements in Early and Later Vedic Ages

## Features of the Iron Age

It is believed that the Iron Age witnessed the growth of small village and town settlements in the Gangetic Valley. The large cities of the Indus Valley had declined. Man was cultivating rice, wheat, barley and domesticating cattle, sheep, pig and horses. People manufactured and wore ornaments made of terracotta, stone and glass. They also made human figurines of terracotta.



Painted grey ware pottery

This period also saw significant development in pottery style. The Painted Grey Ware pottery (PGW) and the Northern Black Polished Ware are two pottery styles generally associated with the Iron Age.

## The Mahajanapadas

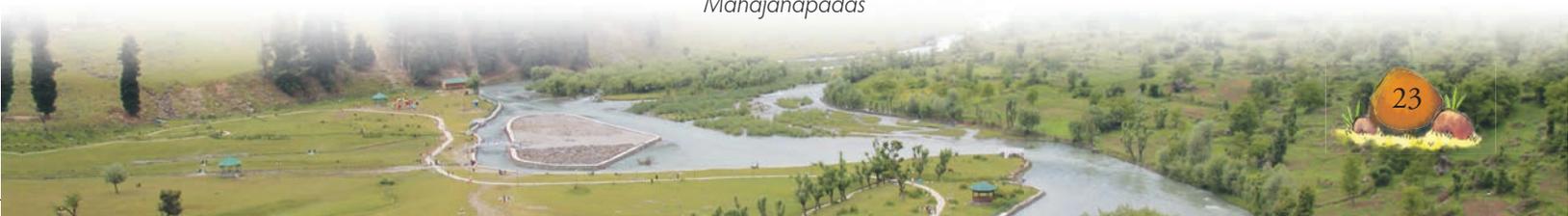
By the end of the Later Vedic Age, small kingdoms or janapadas had developed. From the sixth century BCE, rulers of these janapadas extended their territories by conquering neighbouring



areas. The larger kingdoms were known as mahajanapadas. In an early Buddhist text, we find a list of 16 great mahajanapadas that occupied territories from the Kabul valley to the banks of Godavari river. These kingdoms had strong armies. The kings collected taxes from the people to maintain the army as well as to build roads, canals, etc. Taxes could be paid in cash or kind.



Mahajanapadas



Most of the mahajanapadas were ruled by hereditary rulers, some were republics, ruled by an assembly elected by the people. The mahajanapada Vajji was a republic.

The mahajanapadas were constantly fighting with each other to gain more territories. This led to four mahajanapadas becoming very powerful. They were—Avanti, Vatsa, Kosala and Magadha. Ultimately, Magadha emerged as the most powerful mahajanapada with a vast area under its control.



### New Words

- Civilization** : the process by which a society or place reaches an advanced stage of social development and organisation
- Extensively** : on a large scale
- Sophisticated** : developed to a high degree of complexity

### Recap

- During the Bronze Age, man practised agriculture and led a settled life.
- The earliest civilizations developed along the river banks—near the river Nile in Egypt, Euphrates and Tigris in Iraq, Yangtze Kiang and Hwang Ho in China and Indus in India.
- The Iron Age roughly extends from 1200 BCE to 600 BCE. It was marked by increasing use of iron weapons, tools and utensils.
- The Painted Grey Ware and Northern Black Polished Ware were the styles of pottery belonging to the Iron Age.
- The Aryans who moved out of their original homeland in Central Asia and migrated to India came to be known as Indo-Aryans.
- The Aryans at first settled in the region of the seven rivers or *Sapta Sindhu*—the Indus, Ravi, Beas, Jhelum, Chenab, Sutlej and Saraswati.
- The Early Vedic Age lasted from about 1500 BCE to 1000 BCE when the *Rig Veda* was composed.
- The period between 1000 BCE and 600 BCE is known as the Later Vedic Age or the Epic Age of Indian history.
- Magadha was one of the most powerful mahajanapada.

## EXERCISE

### A. Write true or false.

1. The rivers helped in transporting goods and people to different places. ....



2. The mahajanapadas developed in the Bronze Age. ....
3. Iron tools and weapons helped man to clear dense forests. ....
4. Aryans at first settled in the region of the five rivers. ....
5. The Painted Grey Ware pottery belonged to the Neolithic Age. ....

**B. Fill in the blanks.**

1. The river valley civilizations developed in the .....
2. The original homeland of the Aryans was in .....
3. The Vedic Age is divided into ..... and .....
4. *Rig Veda* was composed during the .....
5. .... mahajanapadas developed in the sixth century BCE.

**C. Answer the following questions.**

1. Why did the earliest civilizations develop along river banks?
2. How did the use of iron help in the growth of civilizations?
3. Describe the Early Vedic and the Later Vedic Age.
4. Discuss some features of the Iron Age.
5. Write a brief note about the mahajanapadas.

**D. Picture study**

1. What is this style of pottery called?
2. To which age does this kind of pottery belong?



**E. Project work**

1. How did the use of iron help in the growth and spread of civilization? Have a class discussion.
2. Make a PowerPoint presentation on the four Stone Ages and the Iron Age, highlighting their main features.



### Key Concepts

- Invention of the wheel and beginning of transport
- Reaching distant places
- Trade and voyages
- Modern means of transport

Movement from one place to another has played a major role in the evolution of humankind. It has undergone successes and trials as it has evolved through time.

### TRANSPORT THROUGH THE AGES

Early humans travelled by foot. With gradual settlement at one place and practice of agriculture, humans discovered other ways to travel that were easier and more convenient. They domesticated animals like donkeys, bulls, horses to carry heavy loads. Gradually they invented carts to carry loads. Earlier, carts were pulled by humans. Later on, animals were used to pull carts. Humans also used the flow of water in the rivers and seas to row rafts and boats. Eventually, they learnt to use the force of the wind, and made sailboats.



Wheel

The invention of wheel revolutionised the way humans lived and made transportation easy. Invention of the wheel is estimated to have taken place in the Neolithic Age. A log or a stone rolling downhill may have given them the idea for the wheel. The early humans tied together logs of wood, and fitted them with various different kinds of wheels in their attempt to make a wheel cart. The wheel made human life faster and smoother. It helped in moving heavy loads easily. This also led to making of pottery which was used for cooking and storing food and later for spinning thread for making clothes. Wheels also gave the impetus for making simple machines and gears.

Travelling by boats or ships was the most common way of covering longer distances. People travelled to discover new lands and to trade their goods. This brought about a series of voyages

that were undertaken by explorers like Bartholomew Diaz, Christopher Columbus, Vasco da Gama, Ferdin and Magellan. In fact it was Magellan who first sailed round the world crossing the Atlantic and Pacific Oceans to come back to where the expedition started. Magellan's voyage also established the fact that the Earth is round in shape.

The humankind has constantly tried to innovate and develop new and better ways of travelling and reducing the travel time between places. Invention of the steam engine was a major milestone. This helped trade and commerce to flourish.

## MODERN TRANSPORT SYSTEMS

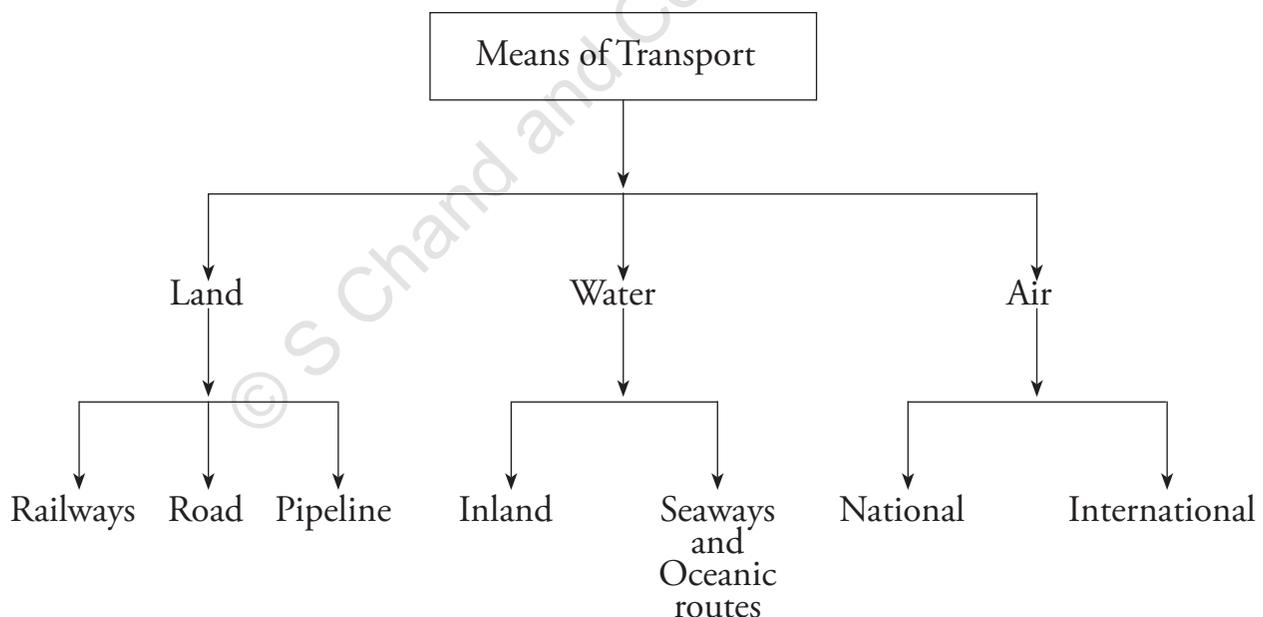
In modern times, we use different means of transport to travel to different places. These means of transport carry people as well as goods. We choose different means of transport on the basis of the distance we would travel, the time available and the money we can spend.

There are three main types of transport:

1. Land transport
2. Water transport
3. Air transport

### Good to know!

In 1886, a German inventor Karl Benz came up with the idea of motor run wagons.



## Land Transport

Scooters, cars, buses and trains are vehicles that travel on land and are called land transport. Land transport is categorised as rail transport and road transport. Pipeline transport is used as



a mode of transportation of goods or materials such as crude and refined petroleum, natural gas, etc.

## Rail Transport

Trains are one of the fastest means of travel on land. In India, the railway system is the main artery of the country's inland transport. The first rail in India was started in 1853 between Mumbai and Thane over a distance of 34 km. Since then, Indian railway system has grown steadily to become one of the largest in Asia and the fourth largest in the world.

Railways are very important because:

- They help to carry goods over long distances.
- Railways carry passengers from one place to another.
- They link major and large cities.
- They are used to carry manufactured goods from the industry to the market.



*Railway Station*

In big cities like Delhi, Kolkata, Chennai, Bengaluru and Hyderabad, there are metro trains. They are superfast trains that help people travel across the city in very little time. Few other cities are also trying to build a network of metro rail to help reduce the travel time and also decongest the roads.

## Road Transport

Road transport system connects villages, towns and big cities with each other. Roads play a very important role in the transportation of goods and passengers over short and medium distances. Road transport is more flexible than rail transport. Buses and trucks can be stopped anywhere and at any time on the road for loading and unloading passengers and goods whereas trains stop only at particular stations.



*National Highway*

## Classification of roads

On the basis of their importance, maintenance and administration, Indian roads can be divided into five categories:

1. National highways
2. State highways
3. District roadways
4. Village roads
5. Border roads

### Stop to Answer

- Find out which state has the longest coastline.

## Water Transport

It is the oldest and cheapest mode of transport. It is also fuel efficient. They are most suitable for carrying heavy and bulky goods. Vehicles like boats, ferries and ships travel on water. There are motor boats that use engines to move fast and there are sail boats that use the wind to sail the boats. There are passenger ships and cargo ships. Passenger ships carry people from one place to another. These days, people travel on cruise ships to enjoy their vacation. Goods that are huge and heavy are sent by cargo ships. The place where the boats or ships are boarded is called a port. Goods are also loaded and unloaded here. Cities that have waterfronts are called port cities like Visakhapatnam and Kolkata.



Cargo ship

Water transport can be broadly divided into two groups:

### Inland water transport

Inland water transport includes natural modes such as navigable rivers and artificial modes such as canals. The two great rivers of India—the Ganga and the Brahmaputra and their tributaries still carry the largest part of river traffic in the country.

### Oceanic routes

India has a vast coastline. Shipping provides transport facilities in this vast coastal tract. The entire coastline is studded with 12 major ports and 185 minor and intermediate ports. About 95 percent of the goods in overseas trade is transported by the seaways. Coastal shipping also carries domestic traffic.



## Air Transport

This is the fastest mode of travel. It saves time but it is expensive. Aeroplanes and helicopters are the common means of air transport. There are big airbuses and large aircrafts that carry many passengers and goods. There are cargo planes too that carry only goods. Helicopters are useful in travelling short distances. They also help in rescue operations in flood affected areas and people trapped in the jungles or mountains.



Aircraft

Air transport is essential for a vast country like India where distances are large, and the topography and climatic conditions are so diverse. It is also important to connect with other countries. Vast dimensions of India have enabled the country to set up a large number of airports in different parts. Airports are supervised by the Airport Authority of India (AAI) since 1 April 1995.

Transport system is largely based on technological innovation. As advances in technology continues, so does travel and exploration mainly to reduce travel time and also to make travel more convenient.



### New Words

<b>Passenger</b>	:	traveller other than the driver of a vehicle
<b>Cargo</b>	:	goods carried on a ship, aircraft, or motor vehicle
<b>Rescue</b>	:	save people from a dangerous or difficult situation
<b>Impetus</b>	:	to motivate or boost

### Recap

- Earlier, carts were pulled by humans. Later on, animals were used to pull carts.
- The invention of wheel revolutionised the way of humans lived.
- Travelling by boats or ships was the most common way of covering longer distances.
- There are three main types of transport—land transport, water transport, air transport.
- Land transport is categorised as rail transport and road transport.
- Road transport system establishes easy contact among villages, towns and big cities.
- Water transport can be broadly divided into two groups—inland water transport and oceanic routes.
- Aeroplanes and helicopters are the common means of air transport.

## EXERCISE

### A. Choose the correct answer.

1. The invention of wheel/cart revolutionised the way of human living and made transportation easy.
2. The voyage of Vasco da Gama/Ferdinand Magellan established that the Earth is round in shape.
3. Land/Water transport is categorised as rail transport and road transport.
4. Inland/Oceanic water transport includes natural modes such as navigable rivers and artificial modes such as canals.
5. Big aircrafts/Helicopters are used to transport a large number of people to long distances.

### B. Write true or false.

1. Early humans travelled by car. ....
2. Invention of the wheel is estimated to have taken place in the Neolithic Age. ....
3. In India, the railway system is the main artery of the country's inland transport. ....
4. Water transport is the fastest mode of transport. ....
5. Helicopters help in rescue operations in flood affected areas. ....

### C. Answer the following questions.

1. Write briefly about the evolution of transport through the ages.
2. Write a short note on land transport.
3. Why are airways important for us?
4. Classify Indian roads.
5. What are the advantages of water transport?

### D. Picture study

1. Identify the means of transport in the given picture.
2. When was it first used in India?



### E. Project work

Make a PowerPoint presentation on the famous voyage of Magellan around the world.



### Key Concepts

- Need for writing
- Use of pigeons
- Invention of telephone and telegraph
- Printing press
- Computers
- Satellites

## WHAT IS COMMUNICATION?

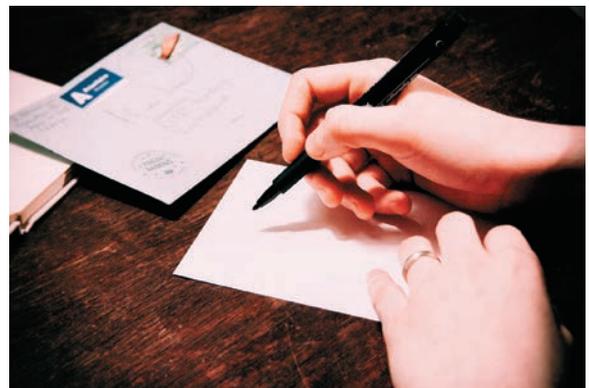
Communication is the process of using words, images, signs or gestures to express or exchange an idea or information to someone else. When words are used for communicating, it is known as verbal communication and when gestures or expressions are used, without the use of words, then it is known as non-verbal communication.

## Methods of Communication

There are numerous methods of communication. Verbal communication may be both written and spoken and non-verbal communication can be through signs and actions. Let us discuss the various methods of communication across the ages.

## Early Communication Systems

- **Letters:** Earlier people used to communicate through notes and letters. Before the use of motor transportation system on land, letters used to be delivered by animal riders for longer distances and foot messengers, called runners, for shorter ones. Some countries like Persia and Greece in ancient times used pigeons to deliver letters. Letters, packages and money, used to be



*A letter*

sent by post even a few decades ago. After the transportation system was developed, mails began to be sent by trucks on roads, ships by sea, and now for faster deliveries, by air.

- **Telegraph:** Electric telegraph was introduced in India in 1851 by the British East India Company. Its function was to transmit and record messages over a wireless line through electrical signals without actually transferring a physical object. This was the first technology that allowed people to send and receive messages across continents and oceans almost instantly. People no longer had to worry that their message may be damaged or lost. The technology of communicating through such electrical messages was called telegraphy and the message itself was called a telegram.

- **Printing Press:** In 1455 CE, Guttenberg introduced the first printing press with movable letters in Germany. Caxton established the first printing press in England in 1477 CE. The process of printing literature was greatly aided by the invention of the printing press. Earlier manuscripts had to be copied by hand. With the invention of the printing press, everyone had access to books which were produced in large numbers.

## Modern Communication Systems

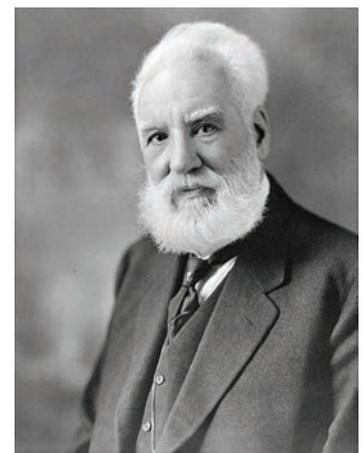
- **Telephone:** Though the telephone was invented by Alexander Graham Bell in 1878, commercial telephones became operational through cables only after 1956. The first telephone cables were commercially used to connect both sides of the Atlantic. Communication from then on became not only faster and cheaper, but also safer. Today, landline cable telephones are gradually becoming obsolete.
- **Mobile Phones:** Mobile phones were developed from the wireless technology. This technology was used in the radio signals to communicate instead of cables, and was used in walkie-talkies. Today mobile phones are the most common means of telecommunication and are seen in every household.

### Good to know!

India sent its last telegram on 15 July 2013, 163 years after its first telegram was sent under British rule from Calcutta to Diamond Harbour.



*Telegraph machine*



*Alexander Graham Bell*



- **SMS:** SMS or short messaging service is a feature in mobile phones that allows users to send text messages to each other through the wireless signals in them. Before the popularity of the Internet, SMS used to be the most common and cheap means of sending and receiving messages.

## Computer

A computer is one of the greatest inventions of modern technology. The first computer was invented by Charles Babbage in 1838. It works using its hardware and software. Other accessories of the computer are keyboard, mouse, printer and CPU. It can store large data in its memory. It is widely used in offices, banks, educational institutes, etc.

- **E-mail:** E-mail or electronic mail requires the Internet facility. E-mail is the electronic version of letters, and its function is the same as that of the letters. People can send both long or short letters to others, attach other documents and pictures with their mail as they would have with letters, and even send the same mail to more than one person without having to type it all over again. E-mails have become so popular today that most official work around the world is done through them.

## Mass communication

Mass communication helps us send messages to a large number of people. Some examples of mass media are newspaper, radio, television, Internet blogs and online social media. We get local and international news through mass media. We can also share ideas, voice our opinions and enjoy entertainment articles or programmes.

## Satellites

Arthur C. Clarke is the inventor of communication satellites. A communication satellite is an artificial satellite which is placed in orbit round the Earth in order to relay television, radio and telephone signals. It creates a communication channel between a source transmitter and a receiver at different locations on Earth. There are over 2,000 communication satellites in the Earth's orbit used by both private and government organisations.

## IMPACT OF GLOBALISATION

Globalisation and the use of Internet has led to a larger reach for the scientific development and innovation of various technologies. The countries around the world are now connected by the Internet and share their knowledge in technological advancement. Social networks and widespread Internet access across the globe following globalisation, has made communication



easier and more convenient as people from all over the world can communicate and stay updated.

## USE OF MODERN COMMUNICATION SYSTEMS

### In the Business World

In the business world, modern communication systems are used in both international and domestic trading. Faster and secure means of communication and sharing knowledge and technology help companies to conduct better and efficient business. Today, several companies even conduct job interviews over video calls.

### In the Field of Education

Communication systems have also enabled progress in the field of education. Students can now stay up to date with everything that is happening around the world through the Internet. Students can also travel the world and look for opportunities to study abroad. All this information is being made available to the people through modern technology.

### In Household Needs

In household needs, news, television, e-mail enable people to not only stay updated about what is going on around the world but also help get work done faster. Payments, banking, booking tickets for theatre and travel can all be done securely through the Internet. This helps people get their work done faster. Communication systems also help families staying in different parts of the world stay in touch with each other.

#### Stop to Answer

- How do modern communication systems help in the field of education?

## GROWTH OF INFORMATION TECHNOLOGY IN INDIA

The speedy growth of Information Technology or IT in India in 1995–96 in the field of electronics and software has led to tremendous advancement in the field of information. It has raised the standards of development in the country to international levels. During the 1990s, there was double the amount of growth in information technology goods and services sector in India as compared to the USA. The Indian IT companies then began to export their services worldwide. Bengaluru is the leading IT exporter in the country and is known as the Silicon Valley of India. The other major IT hubs of the country include—Hyderabad, Chennai, Mumbai, Delhi and Pune.



## TELECOM REVOLUTION AND SMARTPHONES

The telecom revolution grew alongside the massive spread of the Internet facilities across the country. Smartphone technology allowed mobile phones to access the Internet. Government initiatives such as Digital India, Smart City and Make in India have hastened the process and encouraged incredible mass participation and empowerment through the use of modern technologies. The world today is thus connected through the use of smart phones which make sharing knowledge and information much easier.



### New Words

<b>Transmit</b>	:	to send information in the form of electrical signals
<b>Telecommunication</b>	:	communication through the technology used in telephones
<b>Innovation</b>	:	introduction of something new
<b>Communication</b>	:	process of exchanging ideas with others through speaking, writing or any other medium
<b>Runner</b>	:	people who travelled long distances on foot or on animals, carrying mail in ancient times

### Recap

- Communication is the process of using words, images, signs, or gestures to express or exchange an idea or information to someone else. It can be verbal or non-verbal.
- Earlier means of communication include letters and telegrams while modern methods are the telephone, mobile phones, SMS and e-mail.
- Globalisation resulted in expanding the use of modern means of communication to different sectors, such as business, education and personal use.
- The growth of the IT sector in India had been most rapid during the 1990s and today Bengaluru is the largest exporter of IT services in the country.

## EXERCISE

### A. Write true or false.

1. Telegram was the physical transmission of messages by paper from one person to another. ....
2. Landlines and walkie-talkies have almost been replaced by mobile phones and smart phones. ....

3. Social networks are a result of globalisation. ....
4. The world today can barely function without the Internet as a means of communication as it is used in business, education and our daily lives. ....
5. The telecom revolution was a result of government initiatives in India. ....

**B. Fill in the blanks.**

1. .... is the electronic version of letters.
2. Talking over the phone is an example of ..... communication.
3. The technology of communicating through electronic messages is called .....
4. The telephone was invented by ..... in 1878.
5. Bengaluru is called the ..... of India.

**C. Answer the following questions.**

1. What is communication?
2. How were letters delivered before the development of the transportation system?
3. How is SMS helpful for communication?
4. How does the modern technology benefit us in our household needs?
5. Name some government initiatives which were a result of the telecom revolution.
6. Describe the two different forms of communication with examples.
7. Discuss any four modern methods of communication.
8. What are some of the uses of modern communication systems?
9. What are the two major outcomes of the modernisation of the communication system in India?
10. Write a short note on telegraphy.

**D. Picture study**

1. Identify the object in the picture.
2. Who invented it?
3. When did it become operational?



**E. Project work**

Draw a timeline depicting the evolution of communication from pigeons to satellites.



### Key Concepts

- The Indian Constitution—Its formation, nature, need and guiding principles
- Fundamental Rights and Duties

When the British came to power, they ruled India with a set of rules and a structure of government where the people of India did not have much freedom. When India became independent on 15 August 1947, the leaders of independent India realised that they would need a set of rules that will represent all the citizens of India. The task of making a Constitution for India fell upon the Constituent Assembly headed by Dr B R Ambedkar.



*Dr B R Ambedkar*

The Constitution of India came into effect on 26 January 1950. We celebrate that day as the Republic Day of India. The Constitution of India is a document that establishes political values. It is the supreme law of India. It is used by the executive, legislature and the judiciary.

It borrowed features from many Constitutions of the world like the UK, the USA, Australia, Russia, Germany, Japan, Canada and Ireland.

The features of the Indian Constitution are:

- The Indian Constitution is the longest written Constitution of the world. It has 395 articles.
- It is a federal Constitution, it has two forms of government; one at the state level and the other at the national level.
- It is partly rigid and partly flexible; there are some articles that can be changed easily, however there are many articles that can only be changed by a complicated and difficult process.

#### Good to know!

Britain is an unusual country because its Constitution is not written down. All the laws come from tradition and practice.

- It has a parliamentary form of government and not a presidential form of government like the USA. In the parliamentary form of government, the government gets its support directly or indirectly from the Parliament. In a presidential form of government, the head of the state is separate from the Parliament.

## INDIAN CITIZENSHIP

Citizenship means that you are a member of a country and you enjoy certain rights because you belong to that country. There are two types of citizenship. The first is citizenship by birth. It means that if you are born in a certain country then depending on your place of birth you become a citizen of that country. The second is citizenship by naturalisation. It means a person who is not a citizen of a country can become a citizen of that country if desired. The person has to apply to the government and the government can decide whether to give citizenship or not.

### Stop to Answer

- Name the two forms of citizenship.
- State two features of the Indian Constitution.

According to the Constitution of India, any of the following people are citizens of India

- who are born in India
- either of whose parents was born in India

Foreigners can also become citizens of India if they want. That will be called citizenship by naturalisation. If you are married to an Indian citizen and living in India for seven years then you can apply and get citizenship. If you are living in India for 12 years then you can also get citizenship.

The Indian Constitution provides for single citizenship unlike the USA which allows dual citizenship. Dual citizenship means you are both a citizen of the state you are born in and also another country. However, according to the Indian Constitution if you are born in India you are a citizen of India.

## Fundamental Rights

Fundamental Rights are the basic human rights. These rights are written in Part III of the Constitution. They are to be followed irrespective of caste, religion, place of birth and gender. Consisting of articles 12 to 35 these rights protect our freedom. The Fundamental Rights are:

- **Right to Equality:** Under this right everyone is equal in the eyes of the law. The state will not discriminate someone on the basis of their caste, place of birth, religion and gender.



- **Right to Freedom:** This law allows the people to speak against anything that they feel is wrong. They can point out the mistakes that the government is making and criticise them without any fear.
- **Right to Freedom of Religion:** Every citizen can follow the religion of their choice. They can spread and talk about their religion, organise festivals and cultural programmes.
- **Right against Exploitation:** Children, women and poor people are often exploited and treated badly. They have to suffer through many problems. This right protects them from anyone who treats them unfairly or unjustly.
- **Cultural and Educational Rights:** There are many people in India who do not have access to education. This right tries to help these people. Education is the right of every citizen and they should get it. Similarly there are many groups who do not want to leave the forests or villages. These rights also help them to stay where they are.
- **Right to Constitutional Remedies:** Every Indian citizen has the right to go to the court and ask for justice in case their life is in danger or their property is destroyed. Similarly, if the government or anyone else stops them from enjoying their rights, then also they can go to the court.

Ordinary rights can be changed by the law making bodies of the country. However, Fundamental Rights can only be changed by changing the entire Constitution. The government cannot stop its citizens from enjoying these rights and if they do stop, then the citizens can go to the court against the government.

The Constitution represents the people of the country and therefore it is a very important part of our government, society and states.



### Stop to Answer

- How are Fundamental Rights different from ordinary rights?

## Fundamental Duties

The Constitution of India gives some Fundamental Rights to the citizens of the country. These rights are different from the ordinary rights. Ordinary rights are protected by ordinary laws. However, the Constitution of India protects the Fundamental Rights of the people. If the citizens are enjoying these rights then they also have certain Fundamental Duties towards their country. These duties are:

- To follow the Constitution.

### Good to know!

The United Nations provides a list of human rights for citizens all over the world. The countries try to protect these human rights.



- To protect the unity of our country.
- To learn about the independence movement and to remember how we became free.
- To protect our country from attacks and to also fight for our country if there is a need.
- To spread love and accept everyone and live in peace.
- To understand and respect our culture and traditions.
- To make our country cleaner, better and safer.
- To develop new ideas and knowledge. We should also help in bringing changes that will benefit us.
- To protect national monuments and buildings and not to destroy public property.
- We should work hard, help others and try to improve our country.

The Fundamental Duties help us to understand our role in the society and how we can be responsible citizens. The Fundamental Duties are written in Part IV-A of our Constitution.



### New Words

<b>Constitution</b>	:	a set of political principles by which a state or government runs
<b>Caste</b>	:	a system of dividing the Hindu society into different sections
<b>Gender</b>	:	the physical condition of being a male or female
<b>Exploitation</b>	:	the act of using someone in a wrong way just to get personal benefits
<b>Remedies</b>	:	to set right something that is wrong or not perfect

### Recap

- India became independent from British rule on 15 August 1947.
- The Constitution of India came into effect on 26 January 1950, which is celebrated as the Republic Day.
- The Constitution is the supreme law of India. It borrowed features from many Constitutions of the world like the UK, the USA, Australia, Russia, Germany, Japan, Canada and Ireland.
- The Constitution of India provides citizenship by birth and single citizenship to the people.
- The Constitution provides us with certain Fundamental Rights which are very important for our freedom. These rights come with the responsibility of certain duties called the Fundamental Duties which every citizen of the country should try to follow.
- The Fundamental Rights provide us with Right to Equality, Right to Freedom, Right to Freedom of Religion, Right against Exploitation, Cultural and Educational Rights and Right to Constitutional Remedies.



## EXERCISE

### A. Choose the correct answer.

1. India got independence from .....  
a. Mughal rule                      b. British rule                      c. American rule
2. .... is the supreme law of India.  
a. Constitution                      b. Parliament                      c. Supreme Court
3. 26 January is celebrated as .....  
a. Independence Day      b. Republic Day      c. United Nations Day
4. Indian Constitution has .....  
a. single citizenship      b. dual citizenship      c. multiple citizenship
5. Fundamental Rights are written in .....  
a. Part II                      b. Part IV                      c. Part III

### B. Write true or false.

1. The Constituent Assembly made the Constitution of India. ....
2. The Constitution of India came into effect in 1947. ....
3. India has a presidential form of government. ....
4. Fundamental Rights are protected by the Constitution of India. ....
5. Foreigners have to stay in India for nine years in order to get citizenship. ....

### C. Fill in the blanks.

1. Indian Constitution is the ..... written Constitution in the world.
2. The Indian Constitution borrowed features from ....., ....., ..... and many other countries.
3. .... has an unwritten Constitution.
4. USA has a ..... form of government.
5. The Indian Constitution came into effect on .....

### D. Answer the following questions.

1. Who can become citizens of India by birth?
2. What is a federal form of government?
3. What does dual citizenship mean?
4. Which Fundamental Right enables us to choose our own religion?

5. How is parliamentary form of government different from presidential form of government?
6. What do you mean by the Right to Equality?
7. What do the Right to Freedom and Cultural and Educational Rights state?

### E. Picture study

1. Who is this person?
2. What was his contribution to our country?



### F. Project work

1. Name the leaders of the following countries and find out which type of government each country has, whether they have a parliamentary form of government, Presidential form of government or monarchy: UK, USA, Russia, Canada, Japan, Australia, Nigeria, Brazil, France and Germany.
2. Organise a discussion in class on the 'Fundamental Rights and Duties' as prescribed by the Constitution of India.

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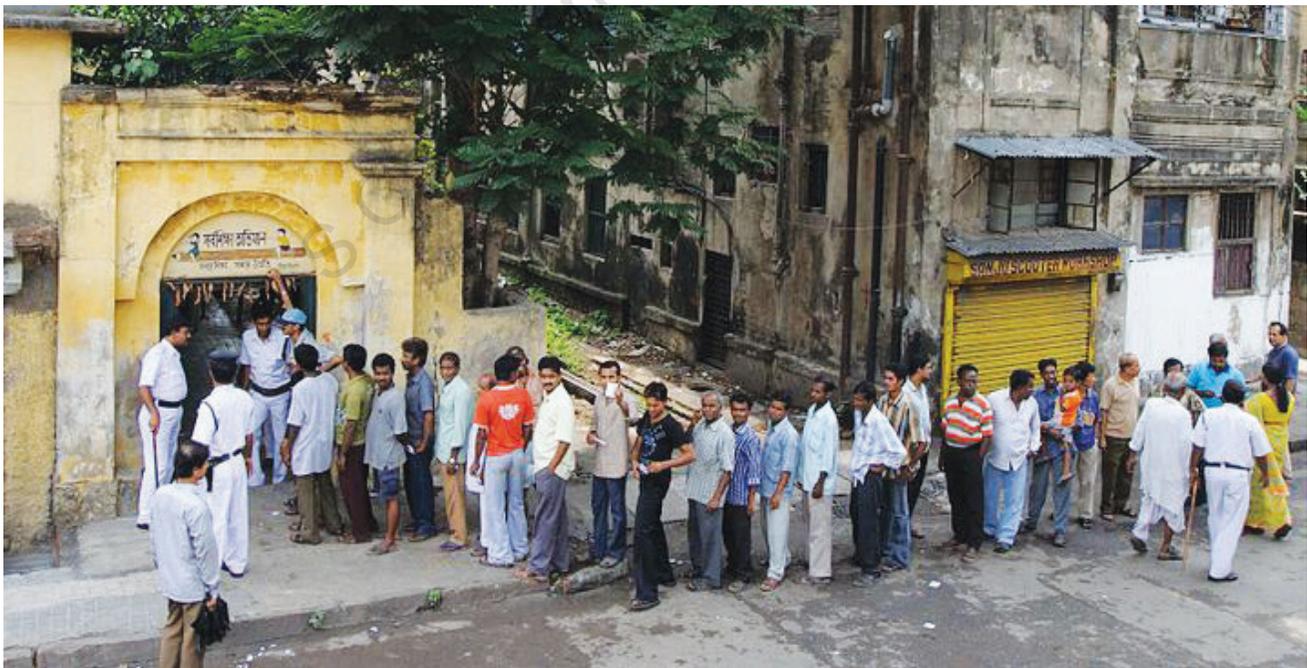


### Key Concepts

- Basic features of the democratic form of government
- Importance of elections
- Responsibilities of a citizen in a democratic polity

## ELECTING A LEADER

India is the largest democracy in the world. A democratic country is one in which the citizens elect their leaders to run the country. In a democratic country, the people choose their leaders from among themselves and they elect the leader to run the country for themselves. We, in India, also elect our leaders from amongst us and let them form a government to run our country for us. The process by which we elect our leaders is called elections. We have elections to choose our leaders both for the state and our country.



Queue outside a polling booth in India

## PROCESS OF ELECTION

The process of electing leaders for a large country like India is not easy. There are several steps that need to be followed by us to elect our leaders carefully and smoothly. Some of these steps are:

- We choose our leaders from within the members of the political parties in India. There are many such political parties in India. Each political party has a representative who represents the party and contests the elections for the post of a leader.
- Candidates from different parties contest to be elected as a leader. They fill up the official forms for the election.
- The candidates then organise campaigns and meetings with the common people to explain why they should be elected as the leader. They try to explain to the public that they fit the role of the leader better than the others. They talk about their contributions to the society as active citizens of the country and also put forward the agenda on which they plan to work on if they are elected.
- The political parties help promote their candidates by putting up posters, organising rallies and calling out their slogans. This process of promoting a candidate to the people is called canvassing.
- Each political party has its own independent symbol. The symbol helps the people to easily identify the party and the candidate who represents the party. It thus becomes easier for the people to vote and elect their leader.
- On the day of election, people go to the polling booths and cast their votes. Polling booths are demarcated places where polling officers and other officials help the people to cast their votes.
- All citizens of the age of 18 and above are given identity cards that enable them to cast their votes. These identity cards are called Voter's ID card. It is mandatory to carry these cards as proof of one's age and eligibility to cast vote. Once the identity of the voter is verified, he/she is allowed to cast his/her vote.



Election rally

### Stop to Answer

- What are elections?
- Who are eligible to vote in elections?
- What is canvassing?

- EVMs or electronic voting machines are used nowadays to cast votes. The voters can cast their vote just by pressing a button. The machine carries the symbols of the political parties and the names of the candidates. The voter has to press the button against a symbol to cast a vote. EVMs have made the process of counting of votes much simpler.
- The voter has to cast his/her vote in secrecy. No one should be able to see your vote. This process is called the secret ballot vote. This is done to ensure that no one can put you under pressure or influence you to change your decision of whom to elect.
- Before casting one's vote the election officer marks the index finger of the voter with black indelible ink. This is done to ensure that no one can cast their vote more than once.
- After the process of voting is completed, the process of counting starts.
- Results are declared after the counting is tallied and collated. The candidate who gets the highest votes is elected as the leader.
- The party with the maximum number of seats forms the government. The party that comes second forms the opposition in the government.



Electronic Voting Machine

## VOTING SYSTEM

In India, we elect our leaders by voting. People who have the right to participate in voting are called voters. All the citizens of India who are 18 years and above are given the right to vote.

In India, we elect our leaders every five years. Hence, elections are also held every five years. Once appointed, the leaders run the country or the state for the next five years. India is a country with a huge population. Careful planning and thorough organisation are required for the elections to be held. The Constitution of India has, thus, formed a separate body to organise and monitor elections. This body is known as the Election Commission of India. The Election Commission plans the dates, selects the venues, provides all details, holds the elections, collates the data and declares the result. This body is responsible for ensuring that the elections are carried out in a fair and peaceful manner.

### Good to know!

The Election Commission of India was established on 25 January 1950. This day is now celebrated as National Voters' Day.

## IMPORTANCE OF VOTING

It is very important to vote and choose leaders who are capable to run the country or state on our behalf. We must all exercise our right to vote. This right allows us to choose our leaders. It also helps us to have a say in how our county, state and city should be governed. By choosing our leaders, we make them answerable to us. If a leader does not stand up to our expectations or does not work properly, he/she will not be chosen the next time.

We, as citizens of our country, are responsible for the growth and prosperity of the country. We must, thus, choose our leaders carefully. It is important to exercise our voting rights and ensure that the right person is elected to be the leader of the country or the state. We must not let anyone or anything influence our decisions. Elections ensure that the power to run a country still lies in the hands of its citizens.



### New Words

<b>Election</b>	:	the process of electing a leader by voting
<b>Agenda</b>	:	a plan of action
<b>Canvassing</b>	:	the act of supporting and promoting a candidate by a political party
<b>Indelible</b>	:	an ink mark that cannot be easily removed
<b>Candidate</b>	:	one who stands in an election to get into public office
<b>Voter ID card</b>	:	a card proving one's identity and helping one to cast vote in elections
<b>Opposition</b>	:	political party that did not win majority seats to form the government and now acts as a balance to the government by questioning its decisions and policies

### Recap

- India is the largest democratic country in the world. All Indian citizens of the age of 18 and above are given the right to vote.
- Elections are held every five years. The Election Commission of India is responsible for planning and organising elections in India.
- We choose our leaders from different political parties. Each political party is represented by a candidate who contests the elections.
- The party that gets the majority of the votes is elected to form the government.
- Our right to vote must be exercised carefully to elect the right leader to run our country.



## EXERCISE

### A. Write true or false.

1. India is a democratic country. ....
2. In a democracy the citizens have the power to elect their leaders. ....
3. Elections in India are held every four years. ....
4. There is one political party in India. ....
5. All people aged 18 or above have the right to vote. ....

### B. Fill in the blanks.

1. In a ..... country leaders are chosen by the process of elections.
2. .... of a country choose the leaders of the country.
3. In India, we choose our leaders by .....
4. .... Machines are used to cast votes in India.
5. Every political party has an independent .....

### C. Name the following.

1. Largest democracy .....
2. Process of electing leaders .....
3. A body that conducts elections .....
4. The process of promoting a candidate in elections .....
5. Voting machine .....

### D. Match the words of column A to the words of column B.

- | Column A           | Column B                        |
|--------------------|---------------------------------|
| 1. Voting machines | a. free and fair                |
| 2. Candidate       | b. EVMs                         |
| 3. Right to vote   | c. the party which comes second |
| 4. Opposition      | d. political parties            |
| 5. Elections       | e. 18 years and above           |



## E. Answer the following questions.

1. What is a democracy?
2. How often are elections held in India?
3. Why do political parties have symbols?
4. What happens after the results of the election are announced?
5. What is a Voter's ID card?
6. What are elections?
7. Why is voting important?
8. Describe the role of the Election Commission of India.

## F. Picture study

1. Can you identify the machine?
2. What is it used for?



## G. Project work

1. Hold a mini election in your class to select the monitor. Divide the class into groups like political parties. Then select your candidate from among your group. Once the candidate is selected, help in canvassing. Then fix a day for voting. Ensure that votes are cast in secrecy. After the votes are cast, calculate the votes and declare the winner.
2. Have a class discussion on the hierarchical structure in school to explain the structure of the Government of India.

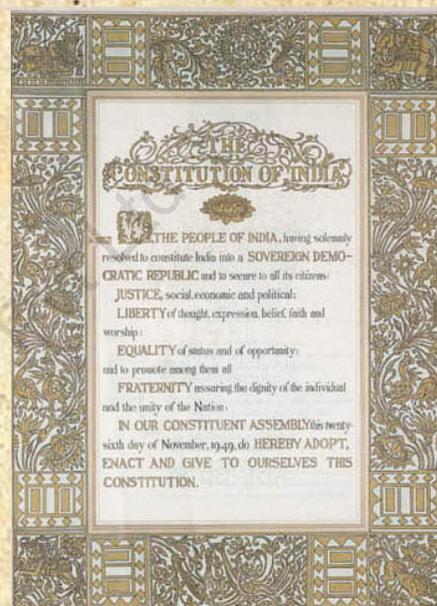




**The Constitution of India:** India became an independent country on 15 August 1947. Every independent country has a set of laws that help in governing the nation and this fundamental body of rules and regulations is known as the Constitution.

Right after India became independent, plans were underway to draft a Constitution for the country. Finally on 26 November 1949, the Constituent Assembly adopted the Constitution, which came into effect on 26 January 1950.

**Preamble to Indian Constitution:** The Indian Constitution has a preamble which serves as an introduction to what the entire document talks about. The preamble to the Indian Constitution states that it is a sovereign, secular, socialist and democratic republic.



*The Preamble of the Indian Constitution*



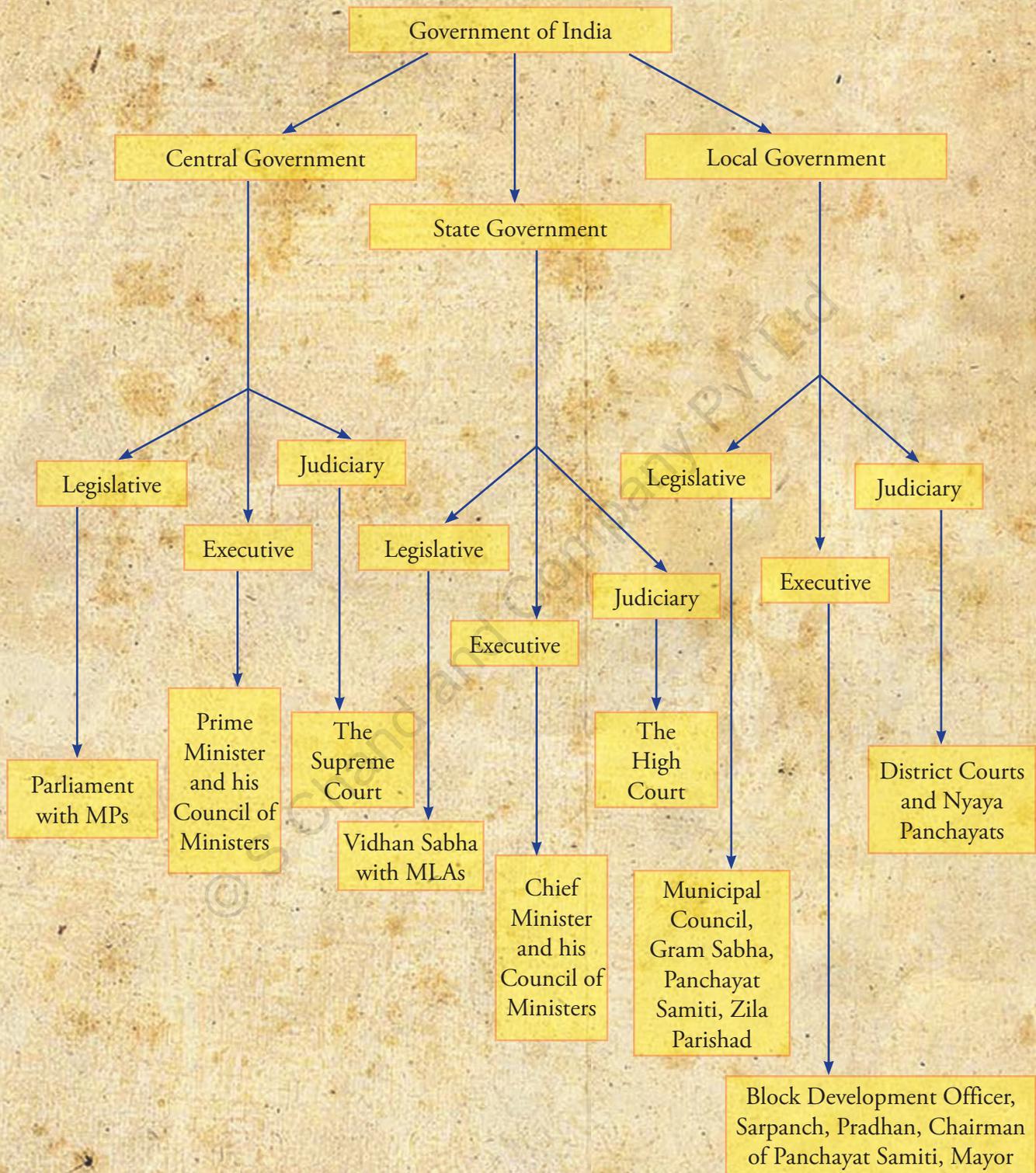
*Dr B. R. Ambedkar at a conference*

A country becomes a republic when people choose an elected representative to run the country, rather than staying under the reign of a monarch. So, officially on 15 August 1947, when the power was transferred from the British government to the people of India, she had become independent.

**Drafting Committee and Constituent Assembly:**

On 29 August 1947, a Drafting Committee was formed by the Constituent Assembly which appointed Dr B. R. Ambedkar as its Chairman. The Drafting Committee consisted of N. Gopalswami, Alladi Krishnaswami Ayya, K. M. Munshi, Saijio Mola Saadulla, N. Madhava Rao, and D. P. Khaitan. Few features of the Indian Constitution were borrowed from Constitutions of other countries like the United States of America, United Kingdom, Ireland, Japan, Canada, etc. Today, the Indian Constitution is said to be one of the best in the world since it has been amended only a few times since its adoption around 69 years ago!

# Federal Structure of the Indian Government



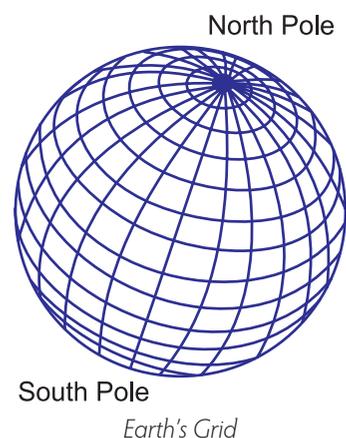
## Key Concepts

- Latitudes (introduction, characteristics, important latitudes)
- Longitudes (introduction, characteristics)

We know that the shape of the Earth is spherical and is best represented by a globe. Since it is spherical in shape, it has no edge, no corner, no sides, top or bottom. Hence, it is very difficult to locate a place on the Earth. To solve this problem, a network of imaginary lines and points are used. This network is called the Earth's Grid. The Earth turns around an imaginary line that passes through its centre. This line is called the axis of the Earth.

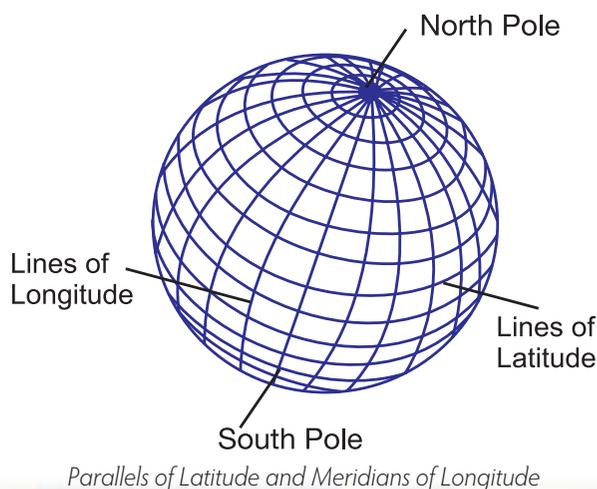
## EARTH'S AXIS

- The axis is tilted at an angle of  $23\frac{1}{2}^{\circ}$ .
- The northern end is known as the North Pole ( $90^{\circ}\text{N}$ ) and southern end is known as the South Pole ( $90^{\circ}\text{S}$ ).
- The Earth spins or rotates on its axis from West to East. It completes one rotation in a day (approximately 24 hours).



## LATITUDES AND LONGITUDES

If you study the globe carefully, you will notice some lines on it. They are the imaginary horizontal lines called latitudes and the imaginary vertical lines called the longitudes. Some of the lines run from West to East, and some from North to South respectively. These lines help us to determine the exact location of a place and time.



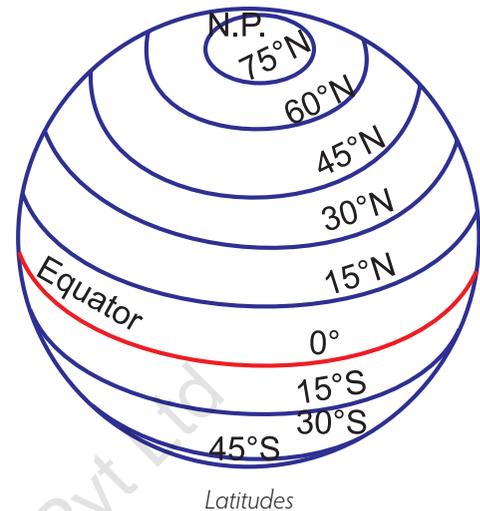
## Lines of Latitude

Lines of latitude are the imaginary horizontal lines running around the Earth in an East-West direction.

The latitude of a place determines the North or South position of the place, measured as an angle whose apex is at the centre of the Earth.

The main features of the lines of latitude are:

- The lines are equidistant from each other. Each line of latitude forms a complete circle.
- The Equator is the longest line of latitude that passes through the centre of the Earth. As we move away from the Equator the lines become shorter. At the poles, they are reduced to point or dots. We call them North Pole and South Pole.
- Latitudes are measured from the equator in angles. They are expressed in degrees and minutes.
- They run parallel to each other so they are also known as parallels of latitudes. There are five most important parallels of latitude.



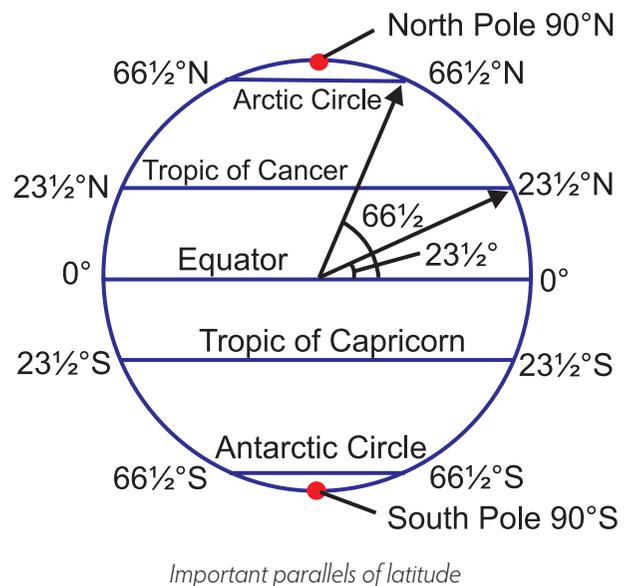
### Good to know!

There are 181 lines of latitude. 90 to the north, 90 to the south of equator and the equator itself ( $90+90+1=181$ ).

## Important Parallels of Latitude

Some of the most significant parallels of latitude are:

1. **Equator:** It is taken as 0 degree ( $0^\circ$ ), since it covers the maximum circumference of the Earth. It is the longest latitude and known as the Great Circle. It divides the Earth into two equal halves. The half of the Earth lying to the North of the Equator is called the Northern Hemisphere while the part which lies to the South of the equator is called the Southern Hemisphere.



- 2. Tropic of Cancer:** This is the  $23\frac{1}{2}^{\circ}\text{N}$  parallel of latitude in the Northern Hemisphere. This line marks the northern-most limit of the overhead Sun.
- 3. Tropic of Capricorn:** This is the  $23\frac{1}{2}^{\circ}\text{S}$  parallel of latitude in the Southern Hemisphere. This line marks the southern-most limit of the overhead Sun.
- 4. Arctic Circle:** The  $66\frac{1}{2}^{\circ}\text{N}$  parallel of latitude is the Arctic Circle. On 21 June, the region experiences 24 hours of daylight.
- 5. Antarctic Circle:** The  $66\frac{1}{2}^{\circ}\text{S}$  parallel of latitude is the Antarctic Circle. On 22 December, the region experiences 24 hours of daylight.

## Heat Zones of the Earth

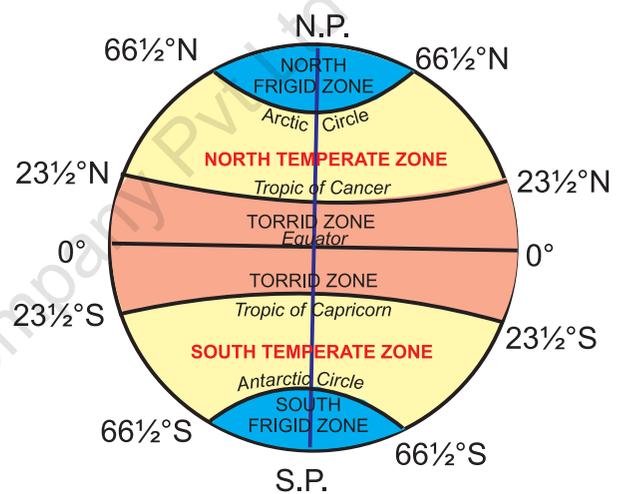
On the basis of latitudes, we can divide the world into three heat zones. As we move away from the Equator towards the poles, the temperature decreases because of the angle of the Sun's rays and the distance from the Sun.

The three heat zones are:

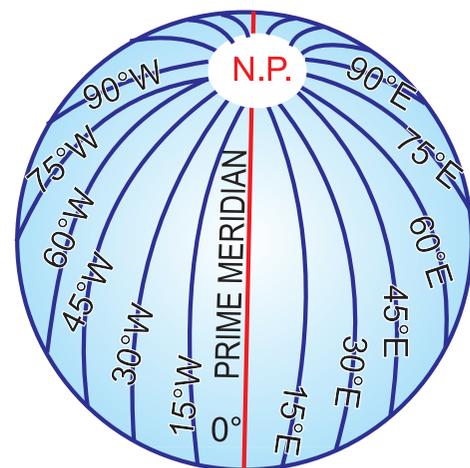
- 1. Torrid Zone:** This zone lies between  $23\frac{1}{2}^{\circ}\text{N}$  and  $23\frac{1}{2}^{\circ}\text{S}$ . The temperature is high throughout the year.
- 2. Temperate Zone:** The North Temperate Zone lies between  $23\frac{1}{2}^{\circ}\text{N}$  and  $66\frac{1}{2}^{\circ}\text{N}$ , and the South Temperate Zone lies between  $23\frac{1}{2}^{\circ}\text{S}$  and  $66\frac{1}{2}^{\circ}\text{S}$ . These zones are neither too cold nor too hot.
- 3. Frigid Zone:** This zone lies beyond  $66\frac{1}{2}^{\circ}\text{N}$  and  $66\frac{1}{2}^{\circ}\text{S}$ , up to the poles. These zones are extremely cold.

## Lines of Longitude

Longitudes are the series of imaginary semicircles that run from the North Pole to the South Pole. These semicircles or lines are also called lines of longitude or meridians. The word 'meridian' means 'mid-day' or 'noon'. A meridian is a line joining all places which have noon at the same time.



Important parallels of latitude and heat zones of the Earth



Longitudes

The main features of the lines of longitude are:

- All lines run from North Pole to South Pole and meet at the poles (North Pole and South Pole).
- All the longitudes are measured in degrees East or West of Prime Meridian.
- The Prime Meridian or the 0° longitude passes through the Royal Observatory at Greenwich near London and is called the Greenwich Meridian.
- There are 360 lines of longitude in all—180 meridians to the East and 180 meridians to the West of the Prime Meridian.
- The 180th longitude is not marked E or W. It is simply called the 180° longitude. This line is also called the International Date Line. It is also known as antimeridian.
- Lines of longitude are also used to calculate time of a particular place.

### Good to know!

As the Earth rotates on its axis, all the places in both the hemispheres which are along the same longitude will have the same time of the day.

### The International Date Line

The International Date Line is an imaginary line of longitude on the Earth's surface located at about 180° East or West of Greenwich Meridian.

It runs from North Pole to the South Pole and demarcates the change of one calendar day to the next. It passes through Russia, Fiji and Antarctica. However, a major part of it passes through the open waters of the Pacific Ocean.

### Stop to Answer

- What do you think is Indian Standard Time?
- How is it related to the Greenwich Meridian?

### Difference between Latitudes and Longitudes

Latitudes	Longitudes
1. These lines are drawn from East to West.	1. These lines are drawn from North to South.
2. These are parallel and equidistant.	2. These lines meet at the poles and thus, are not parallel.
3. These are circles of different sizes, the Equator is the biggest circle.	3. These lines are semicircles of equal size.
4. There are 181 lines of latitude.	4. There are 360 lines of longitude.
5. The Equator is at 0° parallel of latitude.	5. The Prime Meridian is at 0° line of longitude.





## New Words

<b>Axis</b>	:	an imaginary straight line joining the two poles on which the Earth rotates
<b>Poles</b>	:	the two points on the Earth through which the axis passes
<b>Parallels of latitude</b>	:	these are imaginary circles running parallel to the Equator
<b>Meridians of longitude</b>	:	these are imaginary semicircles running from North Pole to South Pole
<b>Grid system</b>	:	the network of intersecting parallels and meridians
<b>Equidistant</b>	:	equal distance

## Recap

- The Equator divides the Earth into two equal hemispheres.
- Other important lines of latitudes are Tropic of Cancer, Tropic of Capricorn, Arctic Circle and Antarctic Circle.
- The latitudes divide the Earth into three major heat zones.
- The 0° longitude is called Prime Meridian.
- The 180° meridian is called International Date Line.
- Latitudes and longitudes are helpful in determining the exact location of a place and the time.

## EXERCISE

### A. Write true or false.

1. Length of all the parallels of latitude is equal. ....
2. All meridians are full circles. ....
3. Places on the same meridian will have noon at same time. ....
4. Temperature decreases as we go away from the Equator. ....
5. The parallel of latitude at 66½°S is called the Arctic Circle. ....
6. There are total 360 meridians of longitude on Earth. ....

### B. Fill in the blanks.

1. The ..... divides the Earth into Northern and Southern Hemispheres.
2. A set of lines running parallel to the Equator are called .....



3. The network of imaginary lines that criss-cross the Earth's surface is called .....
4. The  $23\frac{1}{2}^{\circ}\text{N}$  is known as .....
5. .... region of the Earth is very cold.
6. The ..... divides the Earth into Eastern and Western Hemispheres.

**C. Name them.**

1. This latitude is also known as 'Great Circle' .....
2. The horizontal lines drawn from East to West .....
3. The vertical imaginary lines drawn from North to South .....
4. This is the southernmost limit of the overhead Sun .....
5. The northern end of the axis of the Earth .....
6. The longitude of  $0^{\circ}$  value .....

**D. Answer the following in 2–3 sentences.**

1. What do you mean by parallels of latitudes?
2. What do you know about meridians of longitude?
3. Name the three heat zones of the Earth.
4. What is Equator?
5. What does the word 'meridian' mean?
6. What are Northern and Southern Hemispheres?
7. What are Eastern and Western Hemispheres?

**E. Answer the following in 4–5 sentences.**

1. Define the four important parallels of latitude.
2. What is the International Date Line?
3. Write two important features of lines of latitude.
4. How are latitudes and longitudes helpful?

**F. Answer the following in 6–8 sentences.**

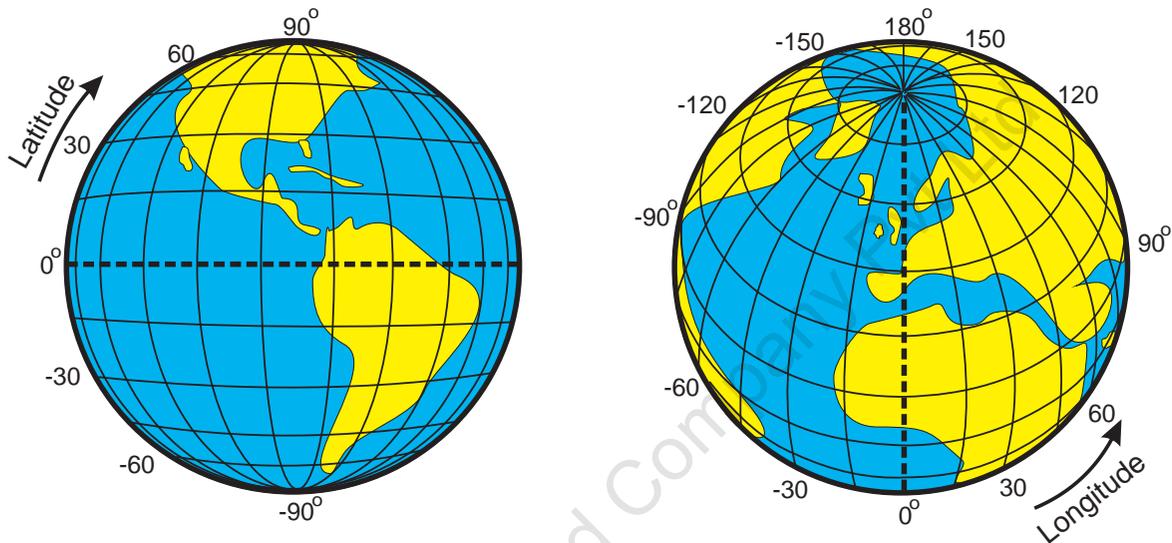
1. How have been the latitudes and longitudes determined on the globe?
2. Explain the different special parallels of latitude of the Earth's surface.
3. Describe the heat zones of the Earth with the help of an appropriate diagram.
4. Distinguish between parallels of latitude and meridians of longitude.



## G. Picture study

Mark the following in the given pictures-

1. Equator
2. Prime meridian
3. Frigid zone
4. Torrid zone
5. North Pole and South Pole



## H. Project work

1. On an outline map of the world mark the important latitudes.
2. Draw the diagram of heat zones of the world and colour them.

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### Key Concepts

- The Crust
- The Mantle
- The Core
- The Moon
- Phases of the Moon
- Man on the Moon
- Solar and Lunar Eclipse

We live on planet Earth. On the surface of the Earth, there are landforms and water bodies. There are different types of landforms, such as mountains, plains, valleys and plateaus. About three-fourth of the Earth's surface is covered with water. We find water in various water bodies such as oceans, seas, rivers, lakes and ponds.

## STRUCTURE OF THE EARTH

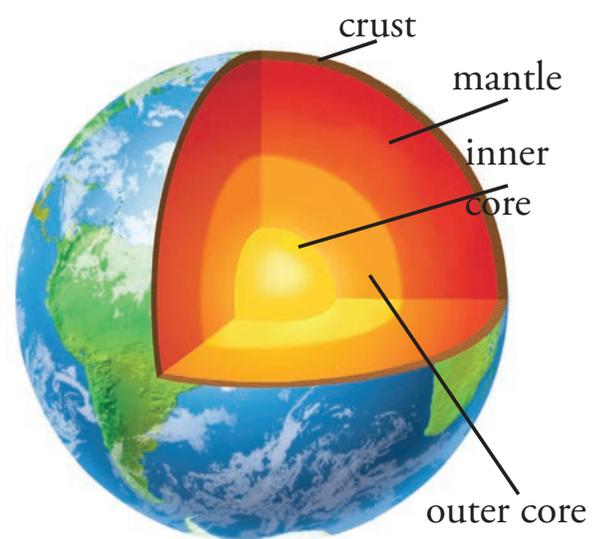
The Earth is made of three layers—the crust, the mantle and the core.

### The Crust

We live on the outermost layer of the Earth. It is made up of solid rocks, soil and sand. It is called the crust. It can be about 5 km thick under the oceans and up to 70 km thick under the surface of the land.

### The Mantle

The mantle is a very thick layer under the crust. It is about 3000 km thick. It is made up of solid rock. The mantle contains iron and magnesium.



Layers of the Earth



## The Core

The core is divided into outer core and inner core. The Earth's core is very hot. So iron and nickel present there exist in a liquid form. The outer core creates the magnetic field of the Earth, which extends up to outer space and protects it from harmful solar winds.

The inner core is hotter than the outer core. The temperature can reach up to 5000°C. As there is a lot of pressure on the inner core, it exists in a solid state, even in very high temperatures. The inner core mainly consists of iron.

### Good to know!

Movements in the Earth's crust create waves called seismic waves. Often, seismic waves cause earthquakes. These travel to the Earth's surface and cause damage to life and property. Scientists study the seismic waves to understand the intensity of an earthquake.

## THE MOON

The Moon is the Earth's natural satellite. The Moon revolves around the Earth. It takes about 29 and a half days to complete one revolution of the Earth. It takes almost the same time to complete one rotation on its axis. As a result, the same side of the Moon always faces the Earth.

The Moon does not have light or heat of its own, it reflects the light of the Sun. It is 3,84,400 km away from the Earth. Though the Moon is much smaller than the Sun, it appears to be of the same size because it is much nearer to us than the Sun.

The surface of the Moon is full of small and big cavities called craters. These craters are visible if we look at the Moon through a telescope. These craters were created when large rock pieces and asteroids hit the Moon millions of years ago. The surface of the Moon also has mountains and huge seas of lava.

The Moon does not have an atmosphere. It is very hot during the day and very cold at night. From the Earth, we can see only one side of the Moon at a time, the other side is turned away from us.

As there is no air or water on the Moon, life cannot exist there. As there is no air, no sound can be heard. The Moon is thus, a bleak and silent place.



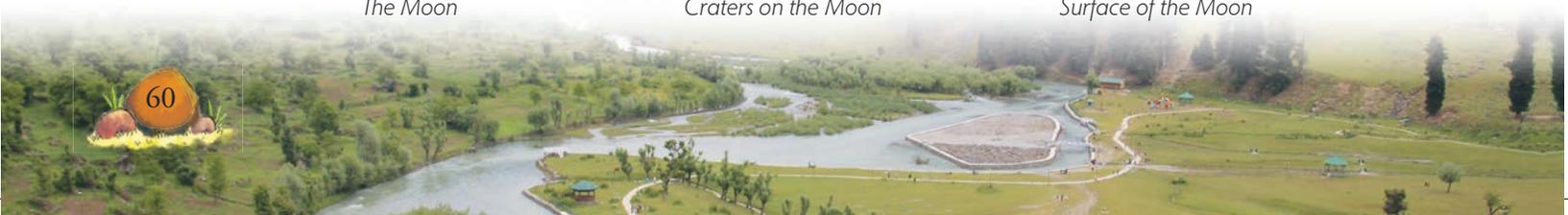
*The Moon*



*Craters on the Moon*

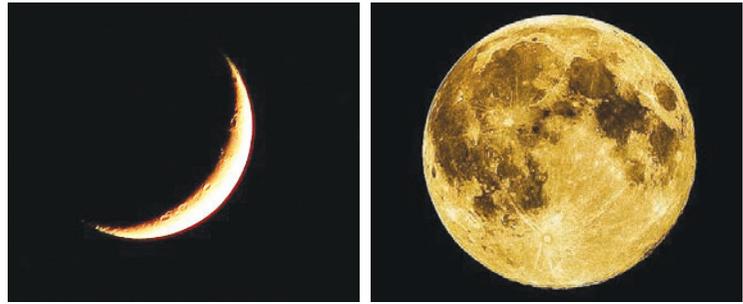


*Surface of the Moon*



## Phases of the Moon

If you look at the sky every night, you will see that the shape of the Moon changes. These shapes are called phases. As the Moon revolves around the Earth, we can see only some parts of the Moon. The parts that we cannot see seem dark. Thus the Moon appears to change its shape everyday.



*Crescent Moon*

*Full Moon*

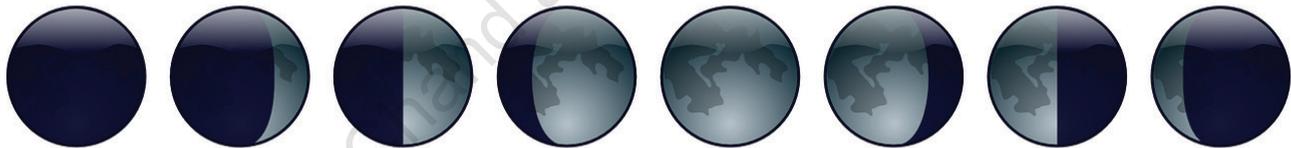
The phases of the Moon follow a set pattern. On certain nights, we cannot see the Moon at all. This is called new moon.

Then the Moon appears to start growing and becomes a crescent. It grows larger till it becomes a complete round. This is the Full moon. From full moon, the Moon again starts getting smaller till it disappears completely on a new moon night. This entire cycle takes about 29 and a half days.

There are eight phases of the Moon. The growing shape of the Moon after a new moon is called waxing or growing moon. A waxing moon becomes full moon, and then it starts getting smaller again. This is called waning moon.

### Good to know!

High tides and low tides are caused due to the gravitational pull of the Moon.



*Phases of the Moon*

## Humans on the Moon

American astronaut Neil Armstrong was the first human to set foot on the Moon. He, along with astronauts, Buzz Aldrin and Michael Collins were part of the Apollo 11 spacecraft that was sent to the Moon in 1969. When he stepped on the Moon, Armstrong spoke these famous words—“That’s one small step for man, one giant leap for mankind”.



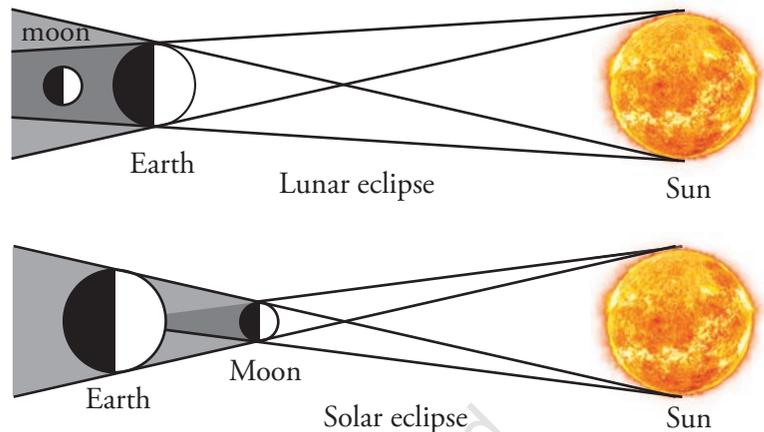
*Neil Armstrong on the Moon*



## ECLIPSE

The Earth revolves round the Sun while the Moon revolves round the Earth. The Earth and the Moon follow specific paths to revolve. These paths are called orbits.

Sometimes, the Sun, the Moon and the Earth come in a straight line. As a result, one blocks the view of another and eclipses occur. There are two types of eclipses—solar eclipse and lunar eclipse.



*Partial solar eclipse*



*Total solar eclipse*

### Solar Eclipse

When the Moon comes between the Earth and the Sun, it blocks the view of the Sun from Earth and a solar eclipse occurs. When the Sun is completely hidden by the Moon, a total solar eclipse occurs. When the Sun is partially hidden by the Moon, a partial solar eclipse occurs.

### Lunar Eclipse

We know that the Moon does not have light of its own; it reflects the light of the Sun. A lunar eclipse occurs when the Earth comes in between the Sun and the Moon. When the Earth comes in between, the Sun's rays do not reach the surface of the Moon.

When the Moon is totally hidden, it is total lunar eclipse. When the Moon is partially hidden, it is partial lunar eclipse.



*Partial lunar eclipse*

#### Good to know!

While the Moon is a natural satellite of the Earth, many artificial satellites are also revolving around the Earth. These have been sent for the purpose of scientific research. The first artificial satellite was sent to space in 1957 by Russia (formerly USSR). It was named Sputnik.



## New Words

<b>Crater</b>	:	a large bowl-shaped hole
<b>Bleak</b>	:	empty space exposed to cold, heat and wind
<b>Crescent</b>	:	the curved shape of the Moon
<b>Eclipse</b>	:	total or partial hiding of the Moon or the Sun
<b>New moon</b>	:	first phase of the Moon when it is not visible in the sky
<b>Asteroids</b>	:	rocky objects orbiting the Sun, too small to be called planets

## Recap

- The Earth is made up of three layers—the crust, the mantle and the core.
- The outermost layer is the crust, which is made up of solid rocks and soil. We live on this outer layer. The mantle is also made up of solid rocks, iron and magnesium.
- The core is very hot, so much so that it contains iron in a molten form.
- The Moon is a natural satellite of the Earth. It reflects the light of the Sun.
- As the Moon rotates and revolves, we can see only its illuminated parts of the Moon. So, the Moon appears to change its shape every day.
- A lunar eclipse occurs when the Earth comes between the Sun and the Moon and the Sun's rays do not reach the Moon.
- When the Moon comes between the Earth and the Sun, we cannot see the Sun and a solar eclipse occurs.

## EXERCISE

### A. Choose the correct answer.

1. We can see the complete shape of the Moon on a full/new moon night.
2. The outermost layer of the Earth is called mantle/crust.
3. At the core of the Earth, we can find iron/gold.
4. Neil Armstrong was the first human to set foot on the Moon/Sun.
5. There are many craters/waterfalls on the surface of the Moon.

### B. Write true or false.

1. The Moon takes 365 days to complete one revolution of the Earth. ....
2. Crescent is a shape of the Moon. ....



3. The outer core of the Earth creates the magnetic field of the Earth. ....
4. A solar eclipse occurs when the Sun comes between the Earth and the Moon. ....
5. Lunar eclipse is always partial. ....

**C. Write down the differences between**

1. Solar eclipse and lunar eclipse
2. Crust and mantle
3. New moon and full moon
4. Total eclipse and partial eclipse
5. Waxing moon and waning moon

**D. Answer the following questions.**

1. Name the layers of the Earth.
2. Why is the magnetic field of the Earth important?
3. What are the phases of the Moon? How do they occur?
4. Describe the solar eclipse with the help of a diagram.
5. Why do we see only one side of the Moon?

**E. Picture study**

Look at the picture and say what is happening. Describe the phenomena.



**F. Project work**

1. Neil Armstrong was the first human to set foot on the Moon. After him, many other astronauts have landed on the Moon. Find out more about them and their missions. Collect pictures and paste in your scrapbook.
2. Find out the names of all the phases of the Moon. Draw their pictures and label them.



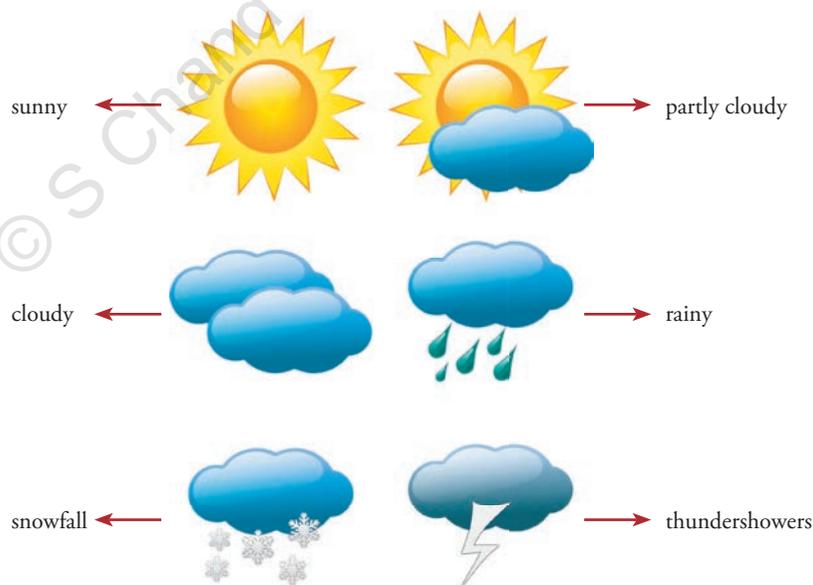
### Key Concepts

- Difference between weather and climate
- Factors that affect the climate of a place

Weather is an ever-changing element of our environment and affects human life a lot. Nowadays, the various sources of media including newspapers, magazines, radio and television not only keep us constantly informed about the present weather conditions, they also provide information in advance, so that people can adjust their schedules accordingly.

### WEATHER

The term 'weather' refers to the state of the atmosphere over a short period of time. It is the atmospheric conditions at any particular place and time. It can be hot, cold, windy, cloudy or humid. In some places it remains the same or changes daily.



*The weather can change very quickly from sunshine to rain*



## CLIMATE

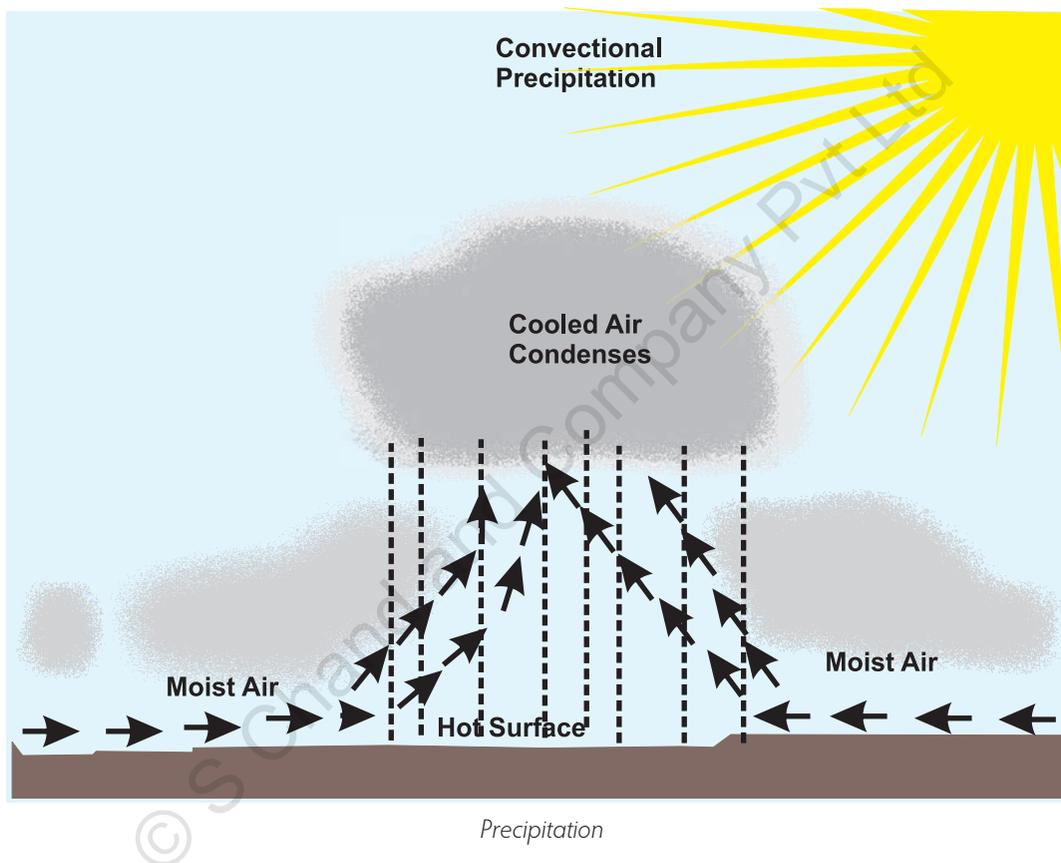
The term 'climate' can be defined as the weather conditions of a large area for a long period of time.

### Good to know!

A postage stamp was issued in the centenary year of the Indian Meteorological Department in 1975.

## The Elements of weather and climate

Temperature and precipitation are the two main elements of weather. Other than these, many elements are observed and measured by weather instruments. The scientific study of weather and climatic conditions is called meteorology.



## Difference between weather and climate

Weather	Climate
<ol style="list-style-type: none"><li>1. It describes the atmospheric conditions for a short period of time.</li><li>2. The description covers a smaller area.</li><li>3. It changes all the time.</li></ol>	<ol style="list-style-type: none"><li>1. It describes the atmospheric conditions for a long period of time.</li><li>2. The description covers a larger area.</li><li>3. It does not change over a long period of time.</li></ol>



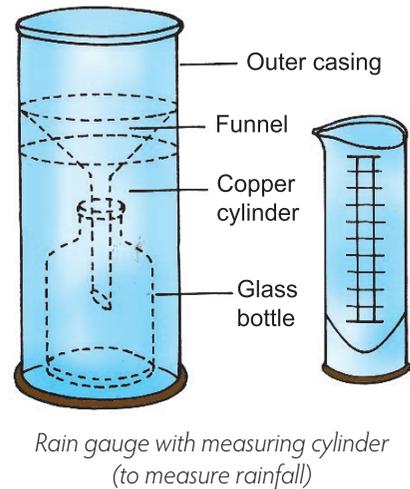
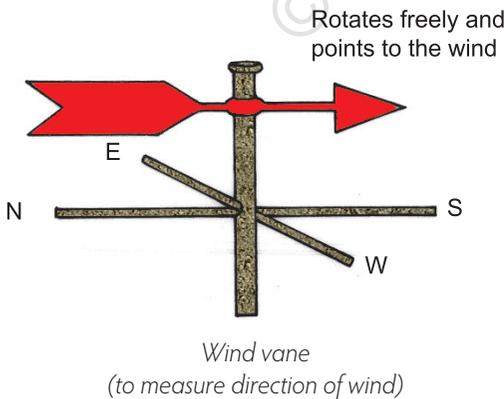
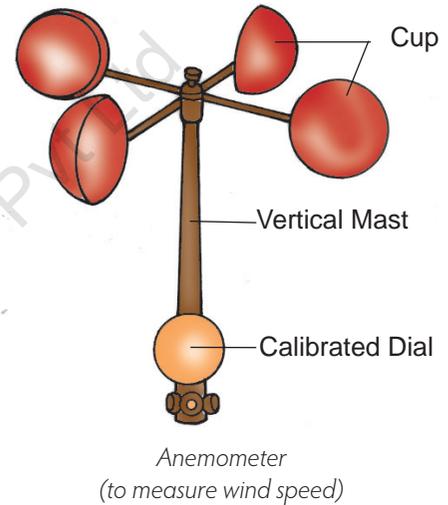
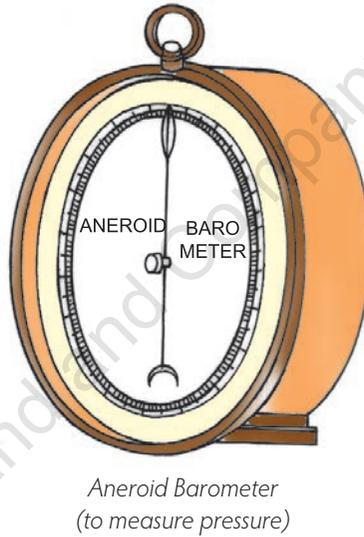
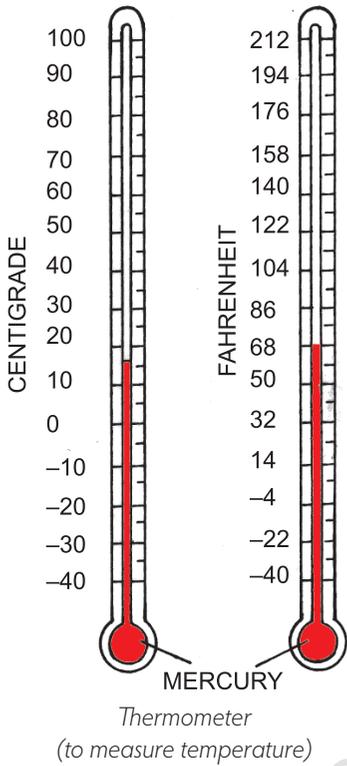
# RECORDING WEATHER AND CLIMATE

Due to the advancement in technology we have modern instruments to record the weather and climatic conditions of a particular place. These instruments are thermometer, barometer, rain gauge, anemometer, wind vane, etc.

**Stop to Answer**

- Name one instrument that we generally keep at home to measure temperature.

Information about the basic elements of weather and climatic data are continuously collected by meteorologists by using instruments and satellites.



Instruments used for measuring temperature and weather



## Need for recording weather

Recording weather is very useful for us. They tell us about the nature of weather and its tendency to change. Experts use this information to predict future weather conditions of a place. This is called weather forecasting. Weather forecasting helps us to plan our day's activities which are dependent on weather. Fishermen, pilots, sailors, mountaineers, builders are dependent on weather forecasts. We shall learn more about weather forecasting in the next chapter.



### New Words

- Forecasts** : prediction of future events (here the weather change)  
**Meteorology** : the study of weather and climatic condition

### Recap

- Weather is the condition of the atmosphere over a short period of time whereas atmospheric conditions over a longer period is called climate.
- The scientific study of weather and climatic conditions is called meteorology.
- Some of the main instruments used for measuring weather are barometer, rain gauge, wind vane, anemometer, etc.

## EXERCISE

### A. Choose the correct answer.

1. Weather is the
  - a. atmospheric condition for a long period of time
  - b. the state of the atmosphere over a short period of time
  - c. year to year change in the atmosphere
2. The two elements of weather and climate are
  - a. dew, mist
  - b. temperature and precipitation
  - c. fog, mist
3. Meteorology is the scientific study of
  - a. weather and climatic conditions
  - b. the study of land forms
  - c. the study of waterbodies

4. Rain gauge is the instrument to measure
  - a. rainfall
  - b. temperature
  - c. humidity
5. Direction of the wind is measured by
  - a. thermometer
  - b. anemometer
  - c. wind vane

**B. Write true or false.**

1. Weather remains same over a long period of time. ....
2. Climate is the weather conditions of a place for a longer period of time. ....
3. There is no instrument to forecast weather. ....
4. Informations about weather can also be collected through satellites. ....
5. Weather forecasts are very useful to us. ....

**C. Fill in the blanks.**

1. .... is an ever changing element.
2. .... describes the atmospheric conditions over a long period of time.
3. The main elements of weather and climate are ..... and .....
4. Weather and climate data are collected by .....
5. Thermometer is used to measure .....
6. Wind vane is used to measure the .....

**D. Answer the following questions.**

1. From where can we get information on weather conditions?
2. How are weather and climate different from one another?
3. What are the elements of weather and climate?
4. What is meteorology?
5. Name some instruments used to forecast weather and climate.
6. How can meteorologists continuously collect the information about weather and climate?



7. What is the need for recording weather?
8. How is weather forecasting important for us?

### E. Picture study

Identify the climate of the places where we would wear these dresses.



1. ....
2. ....

### F. Project work

1. Collect newspaper clippings and follow TV reports on weather for a week. Prepare a report and present it in the class.
2. Make a PowerPoint presentation on the atmospheric conditions that affect the weather and climate of a place.



### Key Concepts

- Torrid
- Temperate
- Frigid

Weather is changing all the time. It tells us about the condition of the atmosphere at a particular place and at a particular time. We can describe weather as hot or cold, still or windy, wet or dry.

Weather of a place depends upon the Sun, the surrounding air and water. The Sun's rays heat the ground and this heat is transmitted to the air above it and rises to keep pace with the cool air. This movement of the heat in the air gives us wind. The sunlight that heats the waterbodies also help in the evaporation of water which forms clouds and comes down as rain.

### WEATHER FORECASTING

With advancement of technology, forecasting of weather tells us the kind of weather to expect. Some of the instruments used in weather recording are thermometer, barometer, rain gauge, wind vane, anemometer, etc.

#### Stop to Answer

- Which government agency in India provides the weather forecast?

Through satellites you can see the pictures of the Earth and weather report on television.

Climate is the average weather of a place over a long period of time. It does not change like weather. When we talk about the climate, we speak of a larger area for a longer period.

### FACTORS DETERMINING THE CLIMATE OF A PLACE

Latitude, altitude, winds and distance from the sea are the main elements that determine the climate of a place.



## Latitude

Places close to the Equator have a higher temperature and are warmer or hotter than places away from it.

## Altitude

The temperature of a place decreases with height above sea level. As we move to a higher altitude the air becomes cooler than low lying areas.

## Winds

Winds also modify the temperature of a place. Winds which blow from sea to land are called onshore winds and they carry moisture. The winds which blow from land to sea are called offshore winds. Offshore winds moving from a hot area raise the temperature of a place. Similarly, if these winds blow from a cold area, they lower the temperature.

## Distance from the sea

The sea affects the climate of a place. Land gets heated faster compared to water. Water takes longer to heat up and cool down than land. Near the coastline, winters are warm as water cools slowly keeping the seaside warm. Similarly, during the summer, these places are cool as the water takes much longer to heat than land.

## CLIMATIC ZONES OF THE WORLD

Climatic zones are also called the heat zones and are differentiated on the basis of the temperature and the amount of sunlight received by these regions. In a climatic zone, climate is uniform.

The Earth is divided into three climatic zones. They are—Torridd Zone (very hot), the Temperate Zone (moderate) and the Frigid Zone (very cold).

### The Torridd Zone

The Torridd Zone lies on either side of the Equator between the Tropic of Cancer ( $23\frac{1}{2}^{\circ}\text{N}$ ) and the Tropic of Capricorn ( $23\frac{1}{2}^{\circ}\text{S}$ ). It is the hottest part of the Earth as it receives direct rays of the Sun throughout the year. It is subdivided into North Torridd Zone and South Torridd Zone. The areas near the Equator are called equatorial region and those near the tropics are called tropical regions.

#### Good to know!

The driest place on the Earth is the Atacama Desert which lies in the Torridd Zone.



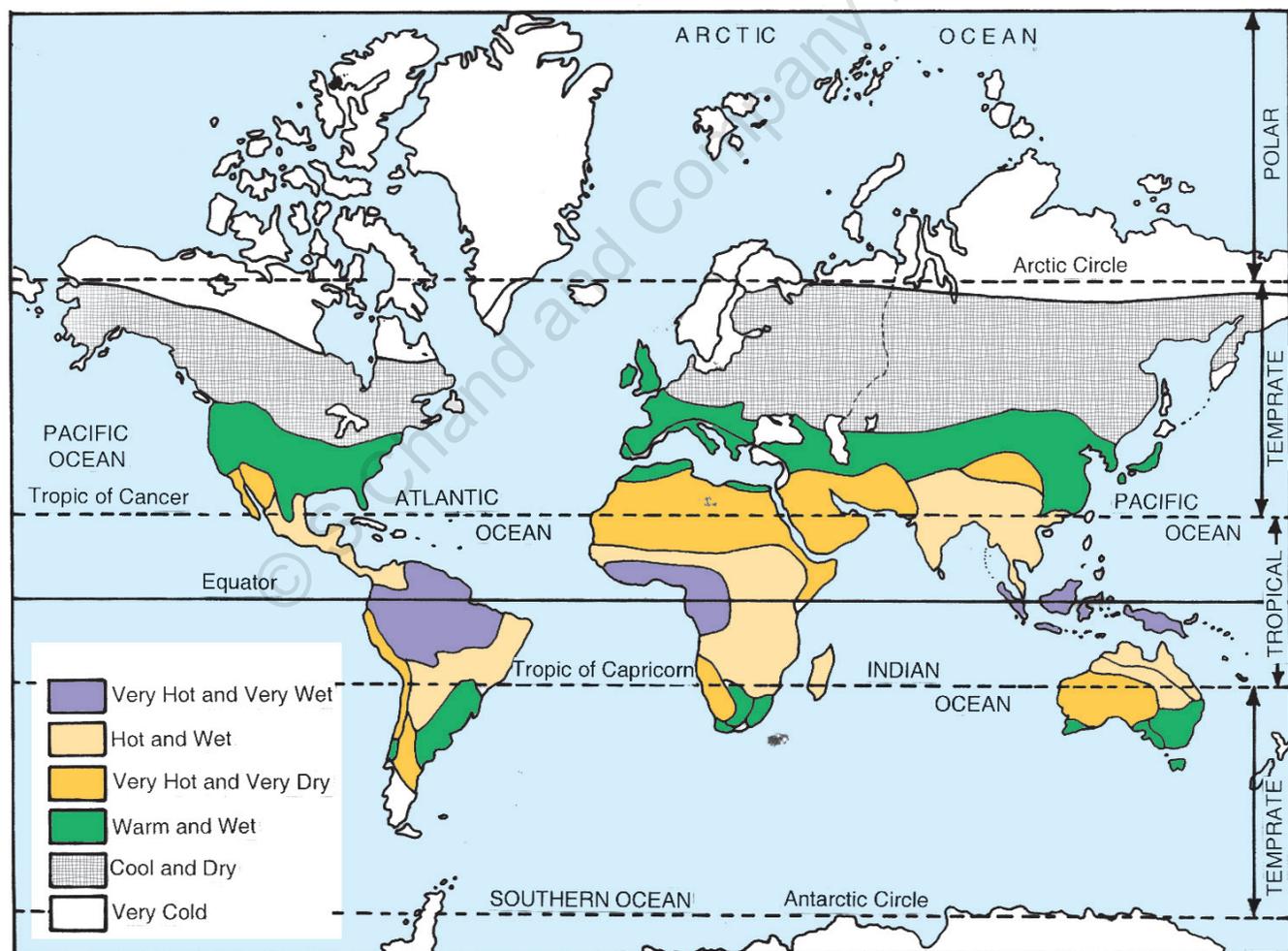
A major part of countries like Africa, India, Southern Asian countries, Australia, Central America, etc. fall in the Torrid Zone.

## The Temperate Zone

The Temperate Zones lie between the Tropic of Cancer ( $23\frac{1}{2}^{\circ}\text{N}$ ) and the Arctic Circle ( $66\frac{1}{2}^{\circ}\text{N}$ ) in the Northern Hemisphere and between the Tropic of Capricorn ( $23\frac{1}{2}^{\circ}\text{S}$ ) and the Antarctic Circle ( $66\frac{1}{2}^{\circ}\text{S}$ ) in the Southern Hemisphere.

The rays of the Sun do not fall vertically on this zone, they are slanting. The slanting rays reduce the temperature and therefore, these areas are neither too hot nor too cold. The climate is moderate.

The North Temperate Zone includes Europe, northern Asia and North America. Southern Australia, New Zealand, southern South America and southern Africa fall in the South Temperate Zone.



Climatic regions of the world



## The Frigid Zone

The Frigid Zones lie between the Arctic Circle ( $66\frac{1}{2}^{\circ}\text{N}$ ) and the North Pole ( $90^{\circ}\text{N}$ ) and the Antarctic Circle ( $66\frac{1}{2}^{\circ}\text{S}$ ) and the South Pole ( $90^{\circ}\text{S}$ ).

These zones are the coldest. As these zones are far away from the Equator, the rays of the Sun are slanting. That is why these areas are covered with snow throughout the year. The Frigid Zones have six months of daylight and six months of night.

The North Frigid Zone (the Arctic region) includes Northern Canada and Alaska, Greenland, northern Europe, northern Russia, and Arctic Iceland.

The South Frigid Zone (the Antarctic region) includes the continent of Antarctica. The next closest mainland is the southern tip of Chile and Argentina, followed by New Zealand.

On the basis of temperature and rainfall, the three zones can be further subdivided into:

- i. very hot and very wet region
- ii. hot and wet region
- iii. very hot and very dry region
- iv. warm and wet region
- v. cold and dry region
- vi. very cold region

Thus, each climatic region is characterised by almost uniform conditions of relief, temperature, rainfall, vegetation and human activities, because the climate affects natural vegetation, fauna and lifestyles of people. Natural vegetation are the trees and plants that grow naturally in a climatic zone. More people live in areas where the relief features, climate and natural vegetation are favourable.

On the basis of climate and natural vegetation, climatic regions can further be subdivided into:

- i. Equatorial region (very hot and very wet)
- ii. Hot deserts (very hot and very dry)
- iii. Temperate grasslands (warm and wet region and/or cool and dry)
- iv. Polar regions (very cold)

## CHANGES IN CLIMATE

It has been observed by the meteorologists that the climate of the world is gradually changing. Temperature all over the world is increasing. This means the Earth is getting warmer than before. If this continues then it will lead to further changes in the amount of rainfall and the natural vegetation of a place. This can cause natural disasters.





## New Words

- Weather** : the atmospheric conditions at a given place and at a given time
- Climate** : average weather conditions for a long period of time
- Climatic zones** : this includes the whole of that area on the Earth that has almost uniform conditions of relief features, temperature, rainfall, soil and vegetation as well as human activities

## Recap

- Weather is the atmospheric condition of a place at a given time.
- Climate is the atmospheric condition over a considerable period of time.
- The three climatic zones are the Torrid Zone, the Temperate Zone and the Frigid Zone.
- The climate of a place depends on its latitude, altitude, winds and distance from the sea.

## EXERCISE

### A. Choose the correct answer.

1. Weather of a place depends upon .....  
a. the Sun                      b. the Moon                      c. the planets
2. Thermometer, barometer, rain gauge, wind vane are the instruments that are used in .....  
a. weather recording      b. marking                      c. writing
3. In the places close to the Equator, the temperature will be .....  
a. low                              b. medium                      c. high
4. Winds which blow from sea to land are called .....  
a. offshore wind              b. water wind                      c. onshore wind
5. The Torrid Zone lies on .....  
a. only north of the Equator  
b. either side of the Equator  
c. only south of the Equator

### B. Fill in the blanks.

1. Each heat zone is a ..... zone.
2. The Torrid Zone lies between ..... and .....



3. .... are the trees and plants that grow naturally in a climatic zone.
4. In a climatic zone, climate is almost ..... throughout the zone.

**C. Name the climatic zones in which the following countries/parts of countries lie.**

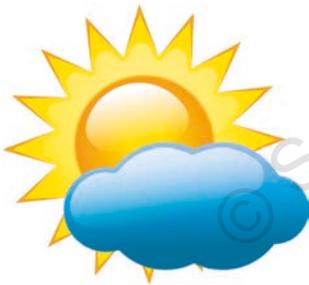
1. New Zealand .....
2. Antarctica .....
3. Africa .....
4. Southern India .....
5. South America .....

**D. Answer the following questions.**

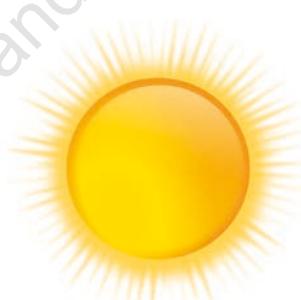
1. What is weather?
2. What do you mean by climate?
3. Name the three climatic zones.
4. What are heat zones?
5. Which zone is called Temperate Zone? Describe the zone.
6. Where does the Frigid Zone lie? Describe the zone.
7. Name the climatic regions on the basis of climate and natural vegetation.

**E. Picture study**

Identify the kind of weather shown by these images.



1. ....



2. ....



3. ....

**F. Project work**

Collect 5-6 pictures of the natural vegetation and the people of the places that fall in the three climatic zones. Paste and label them neatly on a scrapbook.

