

# Preface

Children always have the curiosity to know more about their surroundings. They have much more learning capacity than that of adults. Keeping this fact in mind, they must be provided right guidance and right books.

The present series “**Social Science**” has meticulously been designed for classes 1-5 to develop an understanding of subjects, hone skills and inculcate values. This series is based on CCE (Continuous and Comprehensive Evaluation) pattern conforming to the guidelines recommended in the latest National Curriculum Framework schools.

This series includes the following features:

- ✿ Lucid and graded language keeping in mind the aptitude of the students.
- ✿ A child-friendly layout with vivid, authentic, colourful and eye-catching illustrations.
- ✿ **Do You know?** given in each lesson contains interesting facts.
- ✿ **Key Words** section contains the meanings of difficult words.
- ✿ **Let's Wrap Up** section contains the main points of the chapter.
- ✿ **Exercises** (have been given after the chapter) to test what the children have learnt after reading the chapter.
- ✿ **Discuss** section will motivate student to learn through discussions.
- ✿ **HOTS** (Higher Order Thinking Skills) has been given in each chapter to arouse children's curiosity.
- ✿ **Activity Zone** and **Life Skills** will help hone the co-scholastic abilities of the children.
- ✿ **Teacher's Corner** provides guidance to the teacher wherever necessary.

Though we have made every effort to make the series error-free, any suggestions for further improvement will be given due consideration in the next editions.

– Publisher

## DETAILED CONTENTS

S. No.	Chapter Name	Do You Know?	Key Words	Let's Wrap Up	Exercises	Discuss	HOTS	Activity Zone	Life Skills	Map Work	Teacher's Corner
1.	Continents and Oceans	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; MCQs; True/False; Matching; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	To give exact location of the place	To assist the teachers
2.	Latitudes and Longitudes	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; MCQs; True/False; Matching; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
3.	Movements of the Earth	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; MCQs; True/False; Matching; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
4.	Temperature Zones of the World	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; MCQs; True/False; Matching; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
5.	The Equatorial Forest Region	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; MCQs; True/False; Matching; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
6.	The Hot Desert	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; MCQs; True/False; Matching; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
7.	The Temperate Zone	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; MCQs; True/False; Matching; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
8.	The Frigid Zone	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; MCQs; True/False; Matching; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
9.	Our Environment	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; MCQs; True/False; Matching; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
10.	Pollution	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; MCQs; True/False; Matching; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers

s. No.	Chapter Name	Do You Know?	Key Words	Let's Wrap Up	Exercises	Discuss	HOTS	Activity Zone	Life Skills	Map Work	Teacher's Corner
11.	How to Conserve Our Environment	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; Question-Answer; MCQs; True/False; Matching; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
12.	Communication and Modern Techniques	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; Question-Answer; MCQs; True/False; Matching	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
13.	Natural Disasters	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; Question-Answer; MCQs; True/False; Matching	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
14.	Heritage	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; Question-Answer; MCQs; True/False; Matching	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
15.	Advent of the British	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; Question-Answer; MCQs; True/False; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers
16.	The Gandhian Phase of Freedom Movement (1919-1947)	To provide important information about the chapter	Difficult words	Summary of the chapter	Fill in the blanks; Short Question-Answer; Question-Answer; MCQs; True/False; Rearranging letters	To learn while discussing	Questions based on thinking skills of the children	To hone the co-scholastic abilities of the children	To equip the children to deal with situations in real life	—	To assist the teachers

Revision Test Paper - 1

Model Test Paper - 1

Revision Test Paper - 2

Model Test Paper - 2



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# 1

## Continents and Oceans

If you look at a globe, you will find large part of the Earth's surface covered with water. It occupies almost 71 per cent of the Earth, whereas land occupies only 29 per cent. It means about three parts of our planet's surface contain water and one part is land.

Continents are big **landmasses** on the Earth's surface. There are seven continents. They are Asia, Africa, Antarctica, Australia, Europe, North America and South America. These continents are separated from each other by vast expanses of water, called **oceans**.



Globe

### CONTINENTS



A world map



Mt. Everest



The Suez Canal as seen from space

**Asia** is the largest of the seven continents. It covers about one-third of the land area of the Earth. It has oceans on three sides—the Arctic Ocean in the North, the Indian Ocean in the South and the Pacific Ocean in the East. Several types of landforms are found here. Some of the highest mountain peaks of the world are located in this continent. Mt. Everest, the highest mountain peak in the world, is located here. China and India, two most populous countries of the world, are situated in Asia. India and its neighbouring countries together are called the **Indian Subcontinent**, as they have many common features.

**Africa** is the second largest continent in the world. It is surrounded by water on all sides—the Mediterranean Sea on the North, the Atlantic Ocean on the West and South and the Indian Ocean and the Red Sea on the East. It is a

triangular continent. A variety of landforms are found here owing to its size and extent. The world's longest river, the **Nile** and the largest desert, the **Sahara**, are also located here. The **Suez Canal** connects the Mediterranean Sea to the Red Sea. This canal in Egypt is man-made. It allows two-way water transport between Europe and Asia without going around Africa.



The Isthmus of Panama

**North America** is the third largest continent in the world. It was discovered by Christopher Columbus. The highest point in the continent is Mt. McKinley in Alaska. The Rockies stretch along the western part and the Appalachian Mountains along the eastern part. The whole continent of North America lies in the northern hemisphere, though some parts lie in the Arctic Circle. This continent contains some wealthiest and technologically advanced nations in the world. The USA and Canada are also a part of this continent.



The Amazon Rainforests

The fourth largest continent is **South America**. North America and South America are connected



by the **Isthmus of Panama**. The Andes Mountains stretch from North to South in western part of South America. The great **Amazon Rainforests**, the thickest forests in the world, are found here.

**Antarctica** is the fifth largest continent in the world. It does not have any population except some wildlife such as whales, penguins and seals. This continent remains frozen throughout the year, fanned by stormy winds. It is also called the **white continent** because of its huge ice cover. This is the coldest part of the world.

Europe is the sixth largest continent in size, and contains many technologically advanced nations. It is situated in the West of Asia. Europe and Asia are sometimes together called **Eurasia**. It is located entirely in the northern hemisphere.

**Australia** is the smallest continent which is also a country. It is surrounded by water on all sides and is located entirely in the southern hemisphere. It is an island country. Australia, New Zealand and several other islands are collectively called **Australasia**. The **Great Australian Desert** and the **Great Barrier Reef** are two well-known features of this continent.



The Great Barrier Reef

## OCEANS

The seven continents of the world are separated from each other by large expanses of water called **Oceans**. The oceans of the world are connected to each other. The water in the oceans is salty. There are five oceans—Pacific, Atlantic, Indian, Arctic and Antarctic or Southern Ocean.



The Mariana Trench

The largest and deepest ocean in the world is the **Pacific Ocean**. It covers more of the Earth's surface than all the dry land together. Its shape is almost circular. It separates American continents from Asia and Australia. **Mariana Trench**, the deepest trench in the world with a depth of 10.911 km, lies in this ocean.



The Mid-Atlantic Ocean

The **Atlantic Ocean** is the second largest ocean in the world. It separates North and South America from Europe and Africa. It is an S-



shaped ocean. **Mid-Atlantic Ridge** is a special feature of this ocean. This ridge has many high peaks which form islands in the ocean.

The **Indian Ocean** is the third largest ocean in the world. It is the only ocean named after a country. It connects the continents of Africa, Australia and Asia. The Arabian Sea and the Bay of Bengal are the two important parts of the Indian Ocean.

The continent of Antarctica is surrounded by the **Antarctic** or **Southern Ocean**. The southern parts of the Pacific, the Atlantic and the Indian Ocean merge together to form this ocean. It is located in the southern hemisphere.

The **Arctic Ocean** is the smallest ocean in this world. As it lies mostly within the Arctic Circle, it is covered with ice throughout the year. It contains the North Pole. It is the northernmost point of the Earth. Its surrounding area is frozen all the time.

### Do You Know?

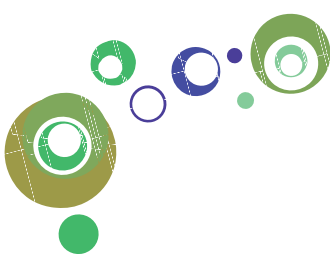
Millions of years ago there was only a single super-continent called Pangaea. With the passage of time, it split into pieces, which began to drift away from each other. The spaces between the pieces started filling up with water. That was how the continents and oceans were formed.



continent	:	the main landmasses of the Earth
landmass	:	a large area of land
ocean	:	the expanse of salt water covering about three-fourths part of the Earth's surface
white continent	:	another name of Antarctica, since it is covered with ice throughout the year
trench	:	a long narrow hole in the ocean floor

### Let's Wrap Up

- ✦ 71 per cent of the Earth is occupied by water and 29 per cent by land.
- ✦ There are seven continents. Asia is the largest and Australia is the smallest continent.
- ✦ These are five oceans which separate the continents.
- ✦ The Pacific is the largest and deepest ocean, while the smallest being the Arctic.
- ✦ Europe and Asia are together known as Eurasia.
- ✦ India is the only country whose name has been given to an ocean, whereas Australia is the only country which is also a continent.



# Exercises

## A. Fill in the blanks with the words given in the box.

seven    Suez Canal    Arctic    oceans    Africa

- ..... is the second largest continent in the world.
- There are ..... continents in the world.
- The continents are separated by large .....
- ..... connects the Mediterranean Sea to the Red Sea.
- North Pole is located in ..... Ocean.

## B. Write short answers for the following questions.

- Which is the most populated continent?
- Name two most populated countries of the world.
- What is Eurasia?

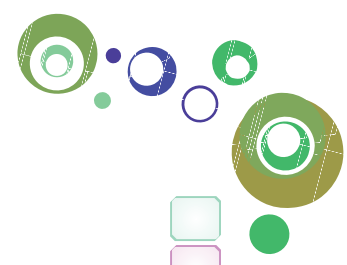
## C. Answer the following questions.

- Write the name of the continents.
- Describe the term 'white continent'.
- What do you mean by 'Pangaea'?

## D. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

- Major landmasses are called.....  
a. Continents     b. Oceans   
c. Plains     d. Mountains
- Which is the third largest continent?  
a. North America     b. Asia   
c. Africa     d. Europe
- The world's largest desert is.....  
a. Sahara     b. Kalahari   
c. Thar     d. Australian
- The Great Barrier Reef is found in.....  
a. South America     b. North America   
c. Australia     d. Asia
- How many oceans are there in the world?  
a. Five     b. Seven   
c. Eight     d. Ten



**E. Write 'T' for true and 'F' for false statements.**

1. The Pacific Ocean is S-shaped.
2. The Arctic Ocean surrounds the continent of Antarctica.
3. North and South America are connected by the Isthmus of Panama.
4. Amazon Rainforests are the thickest forests in the world.
5. The Great Australian Desert is the largest desert in the world.

**F. Match the columns.**

**Column A**

1. Mt.McKinley
2. China
3. Mariana Trench
4. Mt. Everest
5. Nile

**Column B**

- a. Asia
- b. Africa
- c. Highest population
- d. North America
- e. Pacific

**G. Rearrange the letters in brackets to form the correct word.**

1. This is also known as the white continent :  
..... (NATACRCATI)
2. This is the largest continent in the world :  
..... (ISAA)
3. This is the world's deepest trench :  
..... (ARAMINA)
4. This is the smallest ocean in the world :  
..... (CITACR)
5. This is the largest ocean in the world :  
..... (CIFPICA)



**Discuss** What are the causes of the salinity of seawater?



**HOTS** Why is Africa sometimes called the 'cradle of humanity'?



**Activity Zone**

Trace out the diagram of a globe on a tracing paper. Paste it on a cardboard. Colour the continents in different colours.



## Life Skills

Arrange a globe and try to locate different continents and oceans on it.



Mark the following on the given map of the world:

- |                          |                           |                |
|--------------------------|---------------------------|----------------|
| 1. The Rockies           | 2. The Nile River         | 3. The Andes   |
| 4. The Isthmus of Panama | 5. The Great Barrier Reef | 6. Mt. Everest |



### Teacher's Corner

Tell the children that the Himalayan glaciers contain about one tenth of all the fresh water available in the world.

# 2

# Latitudes and Longitudes

## GLOBE

A globe is a miniature model of the Earth. Its shape is like an orange. It is spherical but is slightly flattened at the top and at the bottom. If we look at a globe we can see a number of countries and important places marked on it. But if you are asked to find a specific place, say Delhi, how will you do it? It is a bit difficult to locate such a place on globe. Moreover, if the place is not very important, it may not be marked on the globe at all. So how will you locate it?



A globe's shape is like that of an orange.

## USING AN ATLAS

Open your atlas and flip through its pages. At the end of it you will find a section called **Index**. It contains the names of places marked on the different pages of the atlas in an alphabetical order with particular numbers written alongside. These numbers tell you the location of a certain place and have North (N)/South (S) or East (E)/West (W) written alongside them.

INDEX OF COUNTRIES			
Longitude	Latitude	City, State	Country
19°24'N	99°07'W	Mexico City	Mexico
29°32'N	98°28'W	San Antonio, Texas	United State
19°03'N	98°12'W	Puebla, Puebla	Mexico
30°16'N	97°46'W	Austin, Texas	United State
35°28'N	97°32'W	Oklahoma City, Oklahoma	United State
37°41'N	97°20'W	Wichita, Kansas	United State
49°54'N	97°08'W	Winnipeg, Manitoba	Canada
32°46'N	96°48'W	Dallas, Texas	United State
19°11'N	96°08'W	Veracruz, Veracruz	Mexico
29°45'N	95°22'W	Houston, Texas	United State
39°06'N	94°07'W	Kansas City, Missouri	United State
44°58'N	93°15'W	Minneapolis, Minnesota	United State
14°50'N	91°31'W	Quetzaltenango	Guatemala
14°38'N	90°33'W	Guatemala City	Guatemala
38°37'N	90°11'W	St. Louis, Missouri	United State
29°58'N	90°04'W	New Orleans, Louisiana	United State

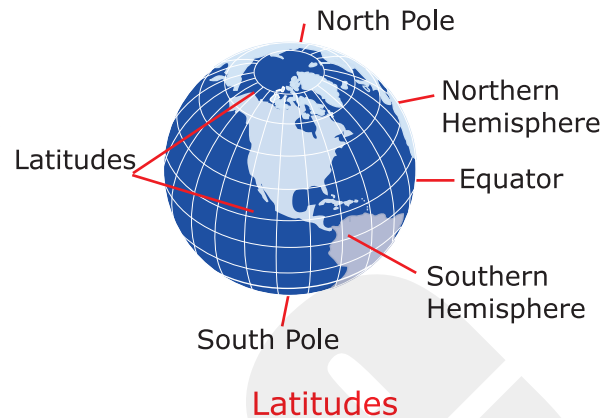
An index page

## LOCATING PLACES

If you look at the globe keenly, you find a number of lines on it. These are imaginary lines of two types—**latitudes** and **longitudes**. It becomes easier to locate a place by drawing such imaginary lines on globes. The point on the North where they merge is called the **North Pole**, while on the south it is called the **South Pole**.

## LATITUDES

An **equator** is an imaginary line drawn halfway between the North Pole and the South Pole. It divides the world into two-halves (equal parts) or hemispheres, called the northern hemisphere and southern hemisphere. The hemisphere between the equator and the North Pole is called the **northern hemisphere** and the hemisphere between the equator and the South Pole is called the **southern hemisphere**. The imaginary lines drawn parallel to the equator are called **parallels of latitudes**. These lines are given numbers starting with equator, which is at  $0^\circ$ . The numbers of all the other lines are followed by N or S, which tells whether the line is in the northern hemisphere or southern hemisphere. There are 90 latitudes drawn to the north of the equator and 90 latitudes to the south of the equator. Thus, including the equator ( $0^\circ$ ) there are a total of 181 lines of latitude.



Apart from the equator, there are other four important latitudes:

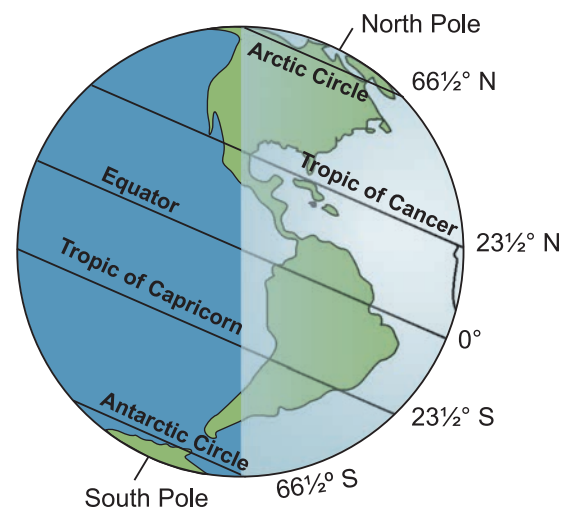
- (i) Tropic of Cancer –  $23\frac{1}{2}^\circ$  N
- (ii) Tropic of Capricorn –  $23\frac{1}{2}^\circ$  S
- (iii) Arctic Circle –  $66\frac{1}{2}^\circ$  N
- (iv) Antarctic Circle –  $66\frac{1}{2}^\circ$  S



Roald Amundsen was the first person to reach the South Pole in Antarctica.

### Some important features of latitudes

1. Latitudes are parallel to each other and are known as parallels of latitudes.
2. The equator is the largest latitude. As you move from the equator to the North or South, you will find the lines decreasing in size and finally becoming a dot at the poles.
3. There are 181 latitudes in total.
4. The equator is the most important latitude and is also called the **Great Circle**.



Important Latitudes



## LONGITUDES

Other than the latitudes, there are another set of vertical lines running from North to South on the globe. These lines are called **meridians of longitude**. The term 'meridian' means mid-day. Thus, a meridian of longitude joins places that have the same mid-day time.

The longitudes are also numbered just as the latitudes. There are 360 lines of longitudes. The longitudes passing through the observatory at Greenwich near London is the **prime** or **main meridian**.

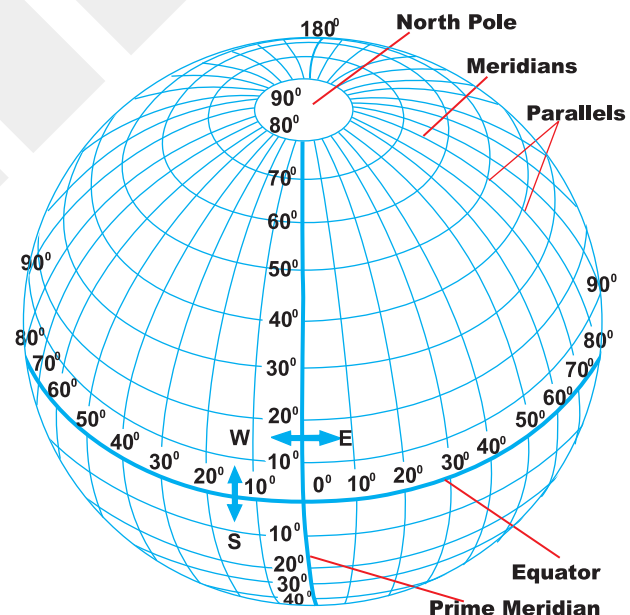
It is numbered  $0^\circ$ . All other longitudes are numbered starting from the prime meridian. Their numbers are followed by E or W, indicating East or West. The prime meridian divides the Earth into two hemispheres like the equator. The area between  $0^\circ$  and  $180^\circ$  E is called the **eastern hemispheres**, and the one between  $0^\circ$  and  $180^\circ$  W is known as the **western hemisphere**. Note that  $180^\circ$  E and  $180^\circ$  W is the same meridian or longitude and is called the **International Date Line**.

### Some important characteristics of longitudes

1. The longitudes are not parallel to each other. They meet at the two poles of the globe.
2. The longitudes have the farthest gaps between them. These gaps decrease gradually towards the poles where they converge.

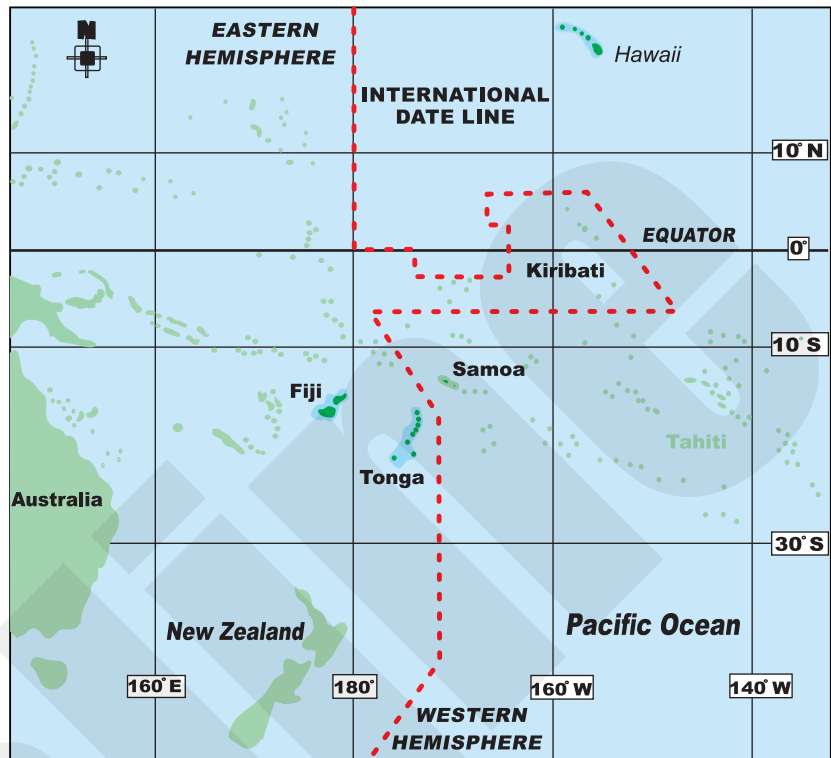
## GRID AND TIME

The latitudes and longitudes together form a network of lines called a **grid**. The point at which a longitude and latitude intersect each other helps us locate a place.



The Earth's grid

Longitudes are quite helpful in calculating the time of a place. We know that the Earth completes one rotation in about 24 hours or 1,440 minutes, that is, it takes 4 minutes (1440/360) to rotate one degree. It means that the time difference between two consecutive longitudes is 4 minutes. The 180° meridian is also known as the **International Date Line**. The moment we cross to the East of it we gain or add a day. Similarly, if we cross to the West of it, we lose or subtract a day. The International Date Line is not a straight line. It has been drawn in an irregular manner to avoid cutting through a land area and causing confusion regarding date.



The International Date Line

### Do You Know?

The term 'meridian' is derived from the Latin word 'Meridianus' which has two parts— 'meri' (meaning 'middle') and 'diem' (meaning 'day').

### Key Words

- North Pole : the northernmost point on the Earth
- imaginary lines : lines not really existing
- meridians : imaginary lines drawn on the globe that run from North to South
- parallel : running side by side, with the same distance at every point
- grid : a network formed due to criss-crossing of latitudes and longitudes



## Let's Wrap Up

- ✦ Latitudes are the imaginary lines on the globe running from East to West.
- ✦ The most important latitude is the equator which divides the earth into northern and southern hemispheres.
- ✦ Latitudes are parallel to each other and decrease in size as you go northwards or southwards.
- ✦ Longitudes run from North to South and meet at the poles.
- ✦ The most important longitude is the prime meridian. It passes through Greenwich and divides the world into eastern and western hemispheres.
- ✦ Longitudes are not parallel.
- ✦ The gap between the longitudes is the greatest at the equator and decreases gradually towards the poles.
- ✦ Longitudes are helpful in determining the time of a place.
- ✦ The network of longitudes and latitudes together helps us locate places.



### A. Fill in the blanks with the words given in the box.

orange    equator    Arctic Circle    Longitudes    Greenwich

1. .... are imaginary lines running from North to South.
2. The Prime Meridian passes through ..... near London.
3. The shape of the Earth is like an .....
4. The hemisphere between the ..... and the North Pole is called the northern hemisphere.
5. The ..... is at  $66\frac{1}{2}^{\circ}$  N.

### B. Write short answers for the following questions.

1. What divides the world into northern hemisphere and southern hemisphere?
2. What is the Prime Meridian?
3. How many longitudes are there?



**C. Answer the following questions.**

1. What do you mean by 'grid'? What is its significance?
2. State the importance of the International Date Line.
3. Differentiate between latitudes and longitudes.

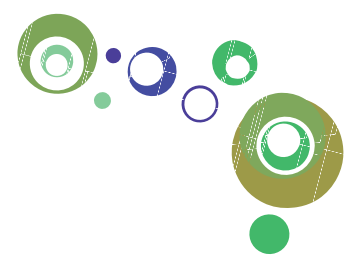
**D. Multiple Choice Questions (MCQs)**

**Tick (✓) the correct option.**

1. The measure of the equator is.....  
a.  $66\frac{1}{2}^{\circ}$  S  b.  $66\frac{1}{2}^{\circ}$  N   
c.  $23\frac{1}{2}^{\circ}$  S  d.  $0^{\circ}$
2. How many longitudes are there?  
a. 181  b. 360   
c. 120  d. 361
3. Which of these helps to calculate time?  
a. Latitude  b. Longitude   
c. Equator  d. Prime Meridian
4. How many latitudes are there?  
a. 180  b. 181   
c. 360  d. 361
5. At the end of an atlas, we find .....  
a. Contents  b. Index   
c. Appendix  d. Maps

**E. Write 'T' for true and 'F' for false statements.**

1. Tropic of Cancer is an important latitude.
2. By drawing imaginary lines criss-crossing each other on globes, it is difficult to locate a place.
3. The Earth is a sphere which is slightly flattened at the top and at the bottom.
4. Tropic of Capricorn is an important longitude.



**F. Match the columns.**

**Column A**

1. Latitudes
2. Meridians
3. Antarctic Circle
4. Tropic of Cancer
5. Globe

**Column B**

- a. Means mid-day
- b. Replica of the Earth
- c. 23½° N
- d. 66½° S
- e. Imaginary lines from west to east

**G. Rearrange the letters in brackets to form the correct word.**

1. This means mid-day : ..... (NAIDIMRE)
2. It means 'main' : ..... (EMPIR)
3. This is the most important latitude : ..... (ARUOEQT)
4. This means half a sphere : .....  
(EREPHSIHME)
5. An imaginary line running from west to east :



**Discuss**

How do latitudes and longitudes help us?



**HOTS**

Why the time difference between India and England is 5:30 hrs?



**Activity Zone**

Make a globe of a big spherical ball. Show the Equator and other four lines of latitude by drawing lines in difference colours.



**Life Skills**

Arrange a map of your city. Mark the places you know. Also mark some important landmarks of your city with the help of your teacher.



**Teacher's Corner**

Bring a globe in the classroom and ask the children to locate the capital cities of different countries.

# 3

## Movements of the Earth

We are aware that the two movements of the Earth take place simultaneously. These two movements are rotation and revolution. The Earth rotates or spins on its axis once in 24 hours from West to East. This movement is called **Rotation**. Besides it the Earth also moves or revolves around the sun in its specific orbit. This is called **Revolution**. It takes  $365\frac{1}{4}$  days to make a revolution.



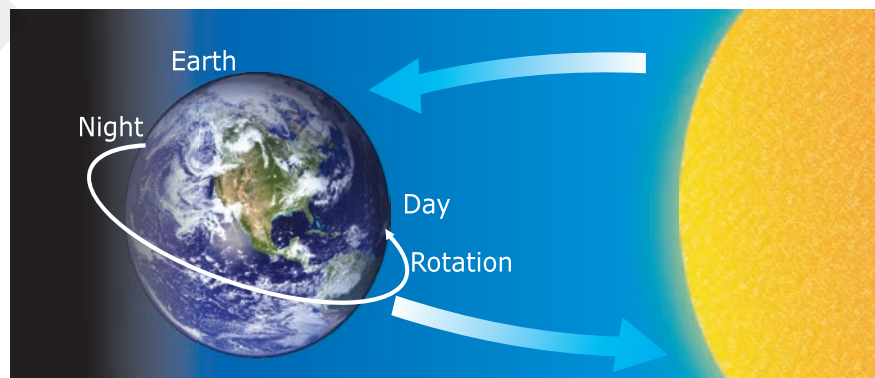
The Earth spins from west to east on its axis.

### ROTATION AND ITS EFFECTS

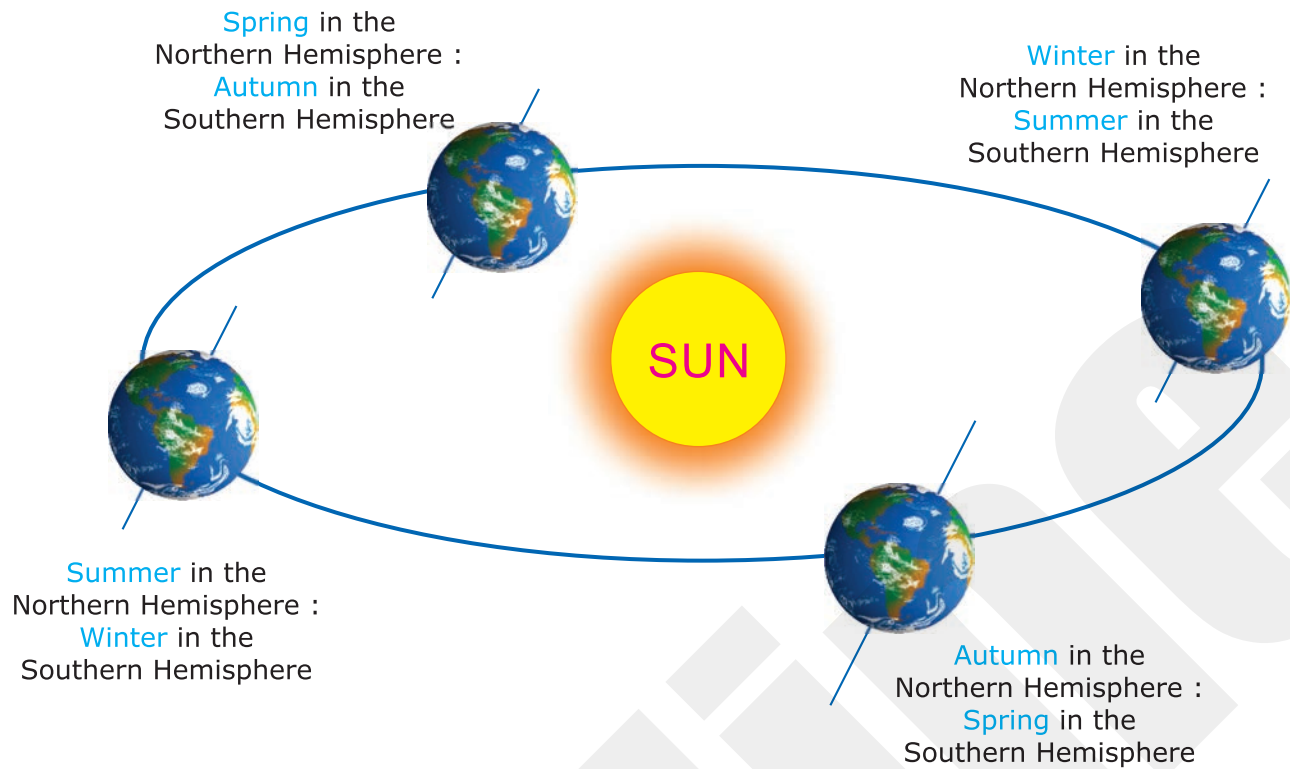
We know that the Earth rotates on its axis. The axis is an imaginary line which passes through the centre of the Earth from the North Pole to the South Pole. It is tilted at an angle of  $66\frac{1}{2}$  to the plane of the Earth's orbit. If we place a bangle vertically on a plane surface and spin it, we will observe a line running through the centre. This imaginary line is the **axis**.

The rotation of the Earth causes day and night. During rotation, the part of the Earth facing the sun witnesses day and the other facing away from the sun has night. It also affects the direction of the flow of ocean currents and the direction of winds. It also generates **tides**, a rhythmic rise and fall of ocean water twice a day.

Places in the East see the sun first and the time there is ahead of places in the West. Thus Japan, which lies in the extreme East of the eastern hemisphere, is called the **Land of the Rising Sun**.



Only the side facing the sun has day



The revolution of the Earth around the sun causes seasons.

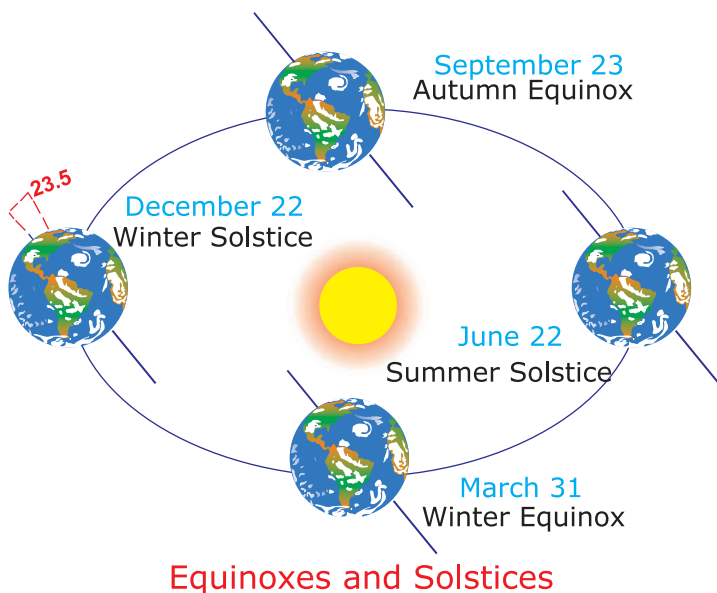
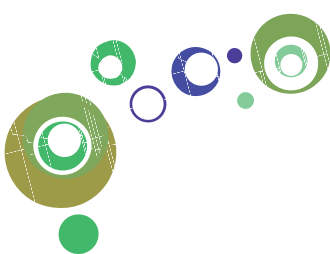
## REVOLUTION AND ITS EFFECTS

While rotating on its axis, the Earth also revolves constantly around the sun. This revolution goes on a fixed elliptical path or route at a speed of 30 km per second. This fixed path is called the **orbit**. Similarly, all other planets revolve around the sun in their own particular orbits. The time taken to complete one revolution varies, depending on their distance from the sun.

The Earth takes  $365\frac{1}{4}$  days to revolve around the sun. But we know that a year has only 365 days. Then what happens to the remaining  $\frac{1}{4}$  or quarter day? This quarter day is accumulated for four years after which it becomes a full day. This full day is added to the month of February in that particular year, making February of 29 days. Such a year is known as the **leap year**. The year 2012 was a leap year. Can you guess the next two leap years?

## SEASONS

The most important effect of revolution is that it causes seasons. Seasons also occur because of the tilt of the Earth's axis. The Earth is tilted at an angle of  $23\frac{1}{2}^\circ$  to its plane of rotation.



When a part of the Earth leans towards the sun, the other part leans away from the sun. The part leaning towards the sun experiences the summer while the one leaning away experiences the winter.

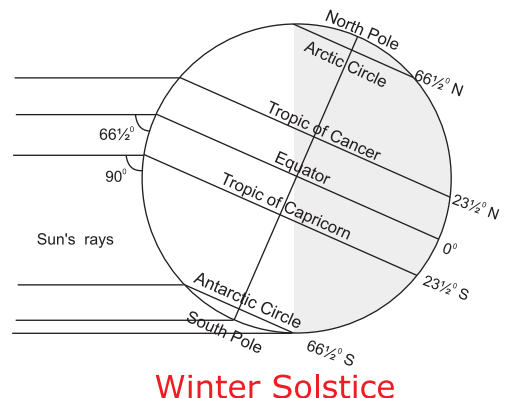
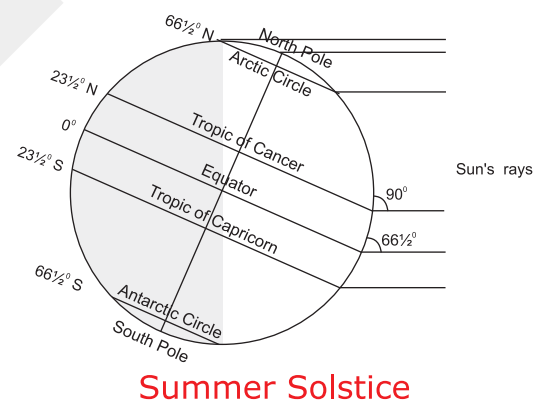
We experience four main seasons on our planet. They are **summer**, **winter**, **spring** and **autumn**. When the northern hemisphere witnesses summer, the southern hemisphere witnesses winter and vice versa.

The sun shines twice a year directly overhead the equator during equinoxes and once on each tropic during the **solstices**. 'Equi' means equal and 'nox' means night. Therefore, **equinox** means 'equal day and equal night'. 'Sol' means 'sun' and '**solstice**' means 'the sun is standing still.'

On 21 March and 23 September the Sun is directly overhead the equator. The Earth experiences spring or vernal equinox and autumnal equinox on these two days, respectively.

On 21 June, the northern hemisphere is tilted towards the sun. At this time, the sun's rays fall directly on the Tropic of Cancer in the northern hemisphere. This is known as **summer solstice**. The number of hours of daylight keeps increasing towards the North and beyond the Arctic Circle, there is six months of continuous daylight. All the places in the northern hemisphere have their longest day on 21 June.

The sun shines directly over the Tropic of Capricorn in the southern hemisphere on 22 December. The tilt of the Earth's axis brings the southern hemisphere closer to the sun making it summer. Hence, the northern hemisphere witnesses **winter solstice** during this time. This is also the shortest day in the northern hemisphere.





### Do You Know?

The moon moves around the Earth and spends a little over 27 days to complete one such revolution.



- axis : an imaginary line through the centre of an object around which the object may turn or spin
- equinox : the two days in a year when the sun shines vertically over the equator, and day and night are of equal duration throughout the world
- orbit : a path followed by a celestial body round another body
- solstice : the two occasions in a year when the sun is farthest North or South of the equator

### Let's Wrap Up

- ✦ Rotation and Revolution are the two movements of the Earth.
- ✦ Rotation takes place when the Earth spins on its axis from West to East once in 24 hours causing day and night.
- ✦ When the Earth goes around the sun in its orbit in 365¼ days, it is called Revolution.
- ✦ Seasons are caused owing to the axial tilt of the Earth and its revolution around the sun.
- ✦ There are four main seasons—summer, winter, spring and autumn.
- ✦ Parts of the Earth beyond the Arctic Circle witness six months of continuous daylight.



#### A. Fill in the blanks with the words given in the box.

Japan    revolution    day and night    summer    June

1. The ..... of the Earth's axis causes seasons.
2. On 21 ....., the northern hemisphere is tilted towards the sun.
3. The country which is known as the Land of the Rising Sun is .....

4. The rotation of the Earth causes .....
5. When the northern hemisphere experiences winter, the southern hemisphere will have .....

**B. Write short answers for the following questions.**

1. What are the two important movements of the Earth?
2. Name four main seasons.
3. What is leap year?

**C. Answer the following questions.**

1. How are the seasons caused?
2. What are the spring and autumn equinoxes?
3. Explain the position of the Earth during summer solstice with the help of a diagram.

**D. Multiple Choice Questions (MCQs)**

Tick (✓) the correct option.

1. How many days does the Earth take to revolve around the sun?
 

a. 365	<input type="checkbox"/>	b. 365¼	<input type="checkbox"/>
c. 355	<input type="checkbox"/>	d. 366	<input type="checkbox"/>
2. How many days are there in a leap year?
 

a. 364	<input type="checkbox"/>	b. 365	<input type="checkbox"/>
c. 366	<input type="checkbox"/>	d. 367	<input type="checkbox"/>
3. Spring is followed by.....
 

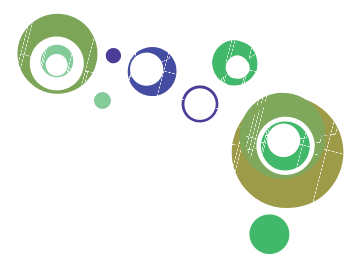
a. Summer	<input type="checkbox"/>	b. Winter	<input type="checkbox"/>
c. Rain	<input type="checkbox"/>	d. Autumn	<input type="checkbox"/>
4. The Earth experience Spring or Vernal equinox on 21.....
 

a. March	<input type="checkbox"/>	b. May	<input type="checkbox"/>
c. June	<input type="checkbox"/>	d. September	<input type="checkbox"/>
5. The fixed path on which the Earth revolves is called .....
 

a. Axis	<input type="checkbox"/>	b. Orbit	<input type="checkbox"/>
c. Arctic	<input type="checkbox"/>	d. Equinox	<input type="checkbox"/>

**E. Write 'T' for true and 'F' for false statements.**

1. Rotation causes day and night.
2. Rotation does not influence the direction of the winds.
3. Rotation and Revolution are the two simultaneous movements of the sun.
4. Rotation also causes tides and influences the direction of the flow of ocean currents.
5. The Earth tilts at an angle of 23½° to its plane of rotation.



**F. Match the columns.**

**Column A**

- 1. Japan
- 2. Axis
- 3. 23 September
- 4. Tides
- 5. 22 December

**Column B**

- a. Winter Solstice
- b. Land of the Rising Sun
- c. Rise and fall of ocean water
- d. Imaginary line of rotation
- e. Autumnal Equinox

**G. Rearrange the letters in brackets to form the correct word.**

- 1. The path taken by the Earth to move around the sun :  
..... (ITOBR)
- 2. It occurs once in four years : ..... (EAPL)
- 3. This is the movement of the Earth on its axis :  
..... (NAOITRTO)
- 4. The imaginary line passing through the centre of the Earth from  
North Pole to South Pole : ..... (SAIX)
- 5. It means the sun standing still : .....(EICTSOSL)



**Discuss** Why is there so much variation in temperature between the summer and winter seasons?



**HOTS** What would have happened, had the Earth's axis not been tilted?



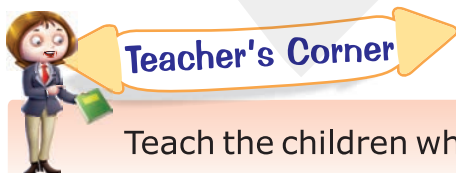
**Activity Zone**

Draw a diagram showing the sun and the Earth during the summer solstice in the southern hemisphere.



**Life Skills**

We have not learnt to utilise the solar energy properly. Discuss with your classmate different ways to use it.



**Teacher's Corner**

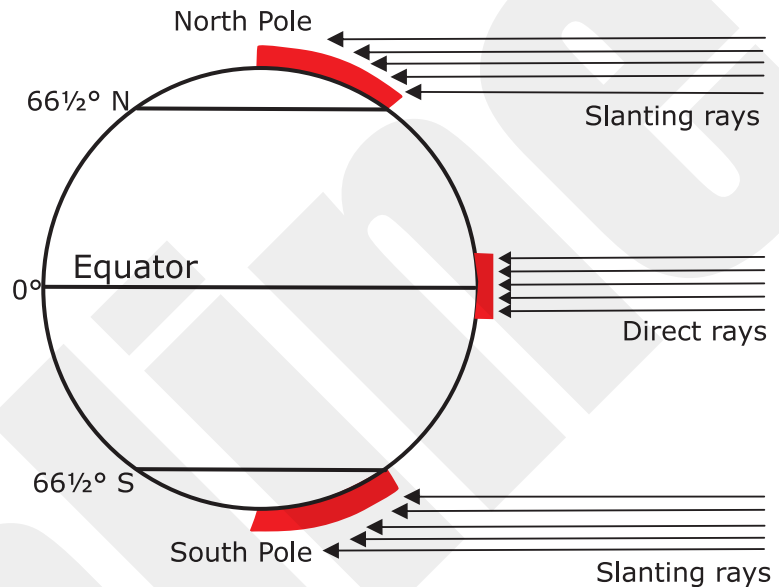
Teach the children why year 2100 will not be leap year.

# 4

## Temperature Zones of the World

You might have heard the word 'climate' many times. Have you ever thought what the climate is? The climate of a place is the average weather conditions over a long period of time.

The climate of a place may be wet or dry, hot or cold, depending on the weather conditions over at least 30 years. It affects plants and animals, lifestyle of people, their food habits, clothing, housing and many cultural aspects.



The effect of latitude on temperature

### FACTORS AFFECTING CLIMATE

#### Latitude or distance of a place from the equator

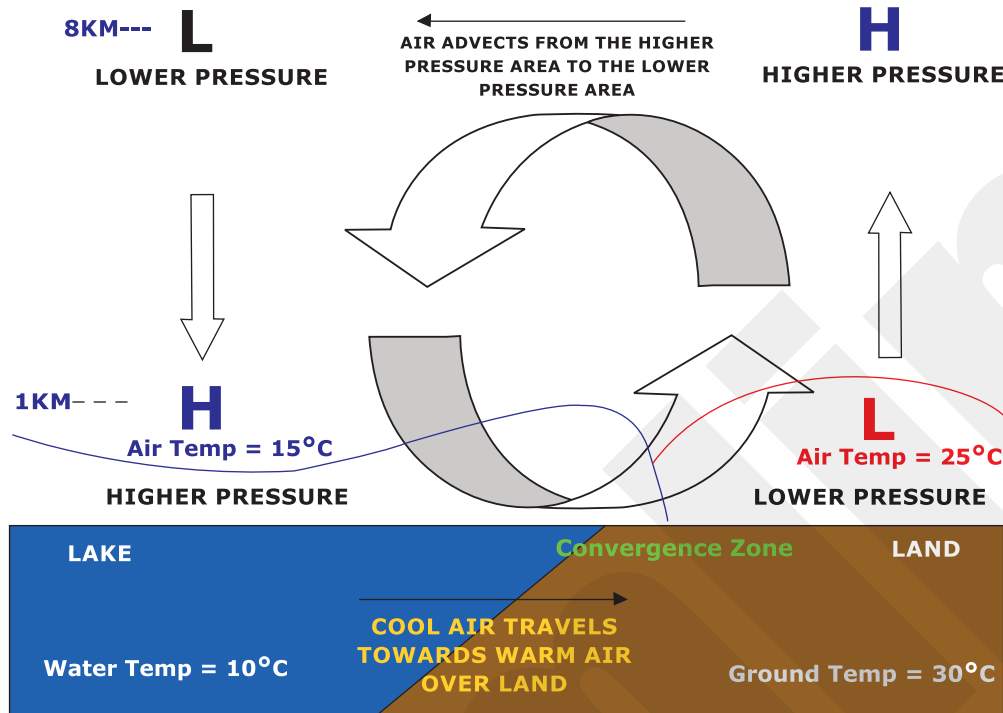
The places which are close to the equator get direct rays of the sun and hence are hotter than the places at higher latitudes. The places near the poles receive slanting rays of the sun. They have to travel a longer distance making them less hot.

Have you ever observed that direct rays generate more heat than slanting rays. We can perform a simple experiment. Let us light a torch directly on the floor. The circle of light is bright and concentrated. But after slanting the torch we see that the light is scattered over a larger area and is not as much concentrated as earlier. This is how latitude affects the temperature of a place.



## Altitude

Altitude of a place refers to its height above the sea level. We know that the higher we move the cooler it becomes. Thus, the places at higher altitudes are cooler than those at lower altitudes. This is why Shimla is cooler than Chandigarh.



Land and sea breezes

### Do You Know?

Millions of years ago, the Earth was mostly covered by thick layers of ice. That stage is referred to as Ice Age.

## Distance from the sea

Places around the sea are neither very hot nor very cold, i.e., they have moderate climate. But the places far from the sea have extreme climates—very hot in summer and very cold in winter. In summer, land heats up faster and in turn heats up the air above it. This warm air rises up making room for cooler air from above the sea to flow in. In winter, the sea remains warm because it loses heat slowly, while the land becomes cool. This is how sea breezes maintain moderate climates in the nearby areas.

## Humidity

Humidity refers to the amount of moisture in the air of a place. The distance from the sea also affects humidity.

Places located near the sea have higher humidity as very extensive evaporation takes place from the nearby sea. Therefore, coastal areas such as Kolkata, Chennai, Mumbai etc. have higher humidity than the land-locked places such as Bhopal, Chandigarh, Delhi etc. When humidity is higher, people **perspire** or **sweat** more.

## Winds

Winds also influence the climate of a place. A wind may either be hot or cool, depending on the place of its origin. Winds coming from the sea carry moisture and are cool, while those from the desert are hot.

### Do You Know?

The scientific study of climate is called climatology.

## THE TEMPERATURE OR HEAT ZONES

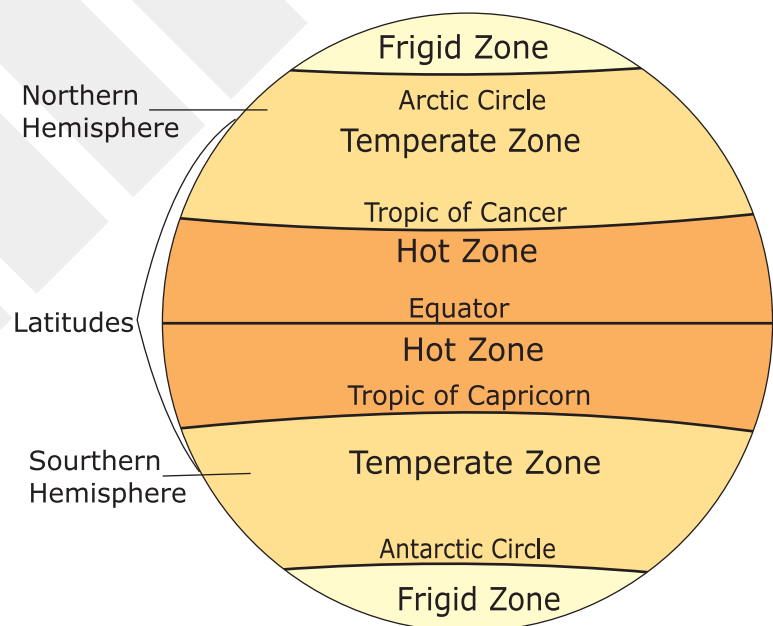
The temperature or heat zones are determined by the amount of sunlight received by that place. The shape of the Earth is very significant in this regard. The Earth is spherical and so its surface is curved throughout.

This is why the sunrays have to travel a greater distance and in a slanting manner to reach the higher latitudes.

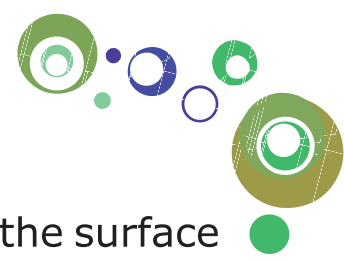
The Earth has been divided into three **heat zones**, depending on the amount of heat received by a particular area :

1. The torrid zone or hot zone
2. The temperate zone
3. The frigid zone

The important latitudes are useful in determining and marking these zones.



The heat zones of the Earth



## 1. The Torrid Zone

Also called the **hot zone**, the torrid zone is the hottest zone on the surface of the Earth because it gets the direct rays of the sun. This zone stretches from the Tropic of Cancer ( $23\frac{1}{2}^{\circ}$  N) to the Tropic of Capricorn ( $23\frac{1}{2}^{\circ}$  S). Since this zone stretches over both the hemispheres, it is divided into **north torrid zone** and **south torrid zone**. It has a tropical climate as it receives the sunrays throughout the year. It is always hot and wet since high temperature causes lots of evaporation and rainfall. There is hardly any winter season here. However, as you move away from the equator the seasons appear more distinct.

## 2. The Temperate Zone

The temperate zone lies between the torrid and frigid zone. As it appears from the name, the places in this zone are neither too hot nor too cold. On the basis of its location, this zone too is divided into two separate parts. The **north temperate zone** is situated between the Tropic of Cancer ( $23\frac{1}{2}^{\circ}$  N) to the Arctic Circle ( $66\frac{1}{2}^{\circ}$  N), whereas the **south temperate zone** extends from the Tropic of Capricorn ( $23\frac{1}{2}^{\circ}$  S) and the Antarctic Circle ( $66\frac{1}{2}^{\circ}$  S). This zone gets slightly slanting sunrays and hence is cooler than the torrid zone. The summer and winter seasons are very distinct in this zone. The days are longer in summer months and nights are longer in winter months of the temperate zone.

## 3. The Frigid Zone

The frigid zone lies beyond the Arctic and Antarctic Circles. It also has two parts, one in northern hemisphere and the other in southern hemisphere. The **north frigid zone** extends from the Arctic Circle ( $66\frac{1}{2}^{\circ}$  N) to the North Pole ( $90^{\circ}$  N) while the **south frigid zone** extends from the Antarctic Circle ( $66\frac{1}{2}^{\circ}$  S) to the South Pole ( $90^{\circ}$  S). The frigid zones are extremely cold all the time since the sunrays are very much slanted.

We have read earlier that during the summer the regions beyond the Arctic Circle have daylight for six months while during the winter they have darkness for six months. This is because of the tilt of the axis. People face lots of difficulties in frigid zone. Some of the places here have permanent ice cover on the ground.



**Key Words**

heat or temperature zone : the Earth is divided into three zones on the basis of prevalent temperature

torrid : the zone receiving direct sunrays and hence comparatively hot

frigid : the coldest zone of the Earth

temperate : the zone with moderate temperature, i.e., neither too hot nor too cold

**Let's Wrap Up**



- ✦ The climate of a place is the average weather conditions over a longer period of time.
- ✦ The five basic factors influencing the climate of a place are latitude, altitude, distance from the sea, humidity and winds.
- ✦ The most important factor that delineates the temperate zones of the surface is latitude, i.e., distance from the equator.
- ✦ There are three temperature or heat zones : torrid, temperate and frigid.
- ✦ The torrid zones lie within the tropics and are very hot.
- ✦ The temperate zones have a moderate climate.
- ✦ The coldest zone is called the frigid zone.

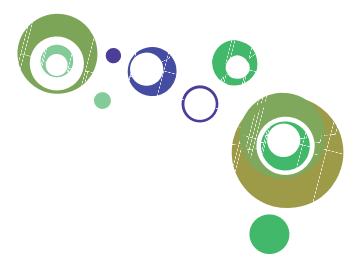


**Exercises**

**A. Fill in the blanks with the words given in the box.**

coldest      distance      tropics      higher      direct

1. The torrid zone extends within the .....
2. The frigid zone is the ..... zone.
3. Places near the equator receive ..... rays of the sun.
4. Coastal areas experience ..... humidity.
5. Climate is affected by the.....from the equator.



**B. Write short answers for the following questions.**

1. What do you mean by altitude?
2. What is the extent of temperate zone?
3. On what basis has the Earth been divided into heat zones?

**C. Answer the following questions.**

1. Describe the torrid zone.
2. Why is life difficult in the frigid zone?
3. Which factors influence the climate of a place?

**D. Multiple Choice Questions (MCQs)**

**Tick (✓) the correct option.**

1. In the temperate zone, summer days are .....  
a. shorter  b. longer   
c. equal  d. cold
2. How many heat zones are there?  
a. two  b. three   
c. four  d. five
3. In which zone it is neither too hot nor too cold?  
a. Torrid  b. Temperate   
c. Frigid  d. None of these
4. As you move higher, the rays of the sun become .....  
a. direct  b. indirect   
c. slanting  d. smaller
5. Coldest zone is called the .....  
a. torrid  b. frigid   
c. temperate  d. none of these

**E. Write 'T' for true and 'F' for false statements.**

1. Altitude refers to the height of a place above the ground.
2. Latitude does not affect the temperature of a place.
3. Climate affects food, clothing and housing of people.
4. When humidity is higher, we perspire more.
5. In summer, the sea remains colder than the land.



**F. Match the columns.**

**Column A**

1. Altitude
2. Humidity
3. Torrid zone
4. Temperate zone
5. Frigid zone

**Column B**

- a. Hot zone
- b. Neither too hot nor too cold
- c. Extreme cold
- d. Height above the sea level
- e. Moisture in the air

**G. Rearrange the letters in brackets to form the correct word.**

1. This affects the climate of a place : .....(ITYDHIMU)
2. This is the hottest zone : .....(RDTIRO)
3. It has equal day and night : .....(RTOAEUQ)
4. This is the coldest zone : .....(RDGIFI)
5. The places near this get very slanting rays of the sun :  
..... (SEPLO)



**Discuss**

Why is the frigid zone thinly populated?



**HOTS**

Why is there six months of day followed by six months of night in the frigid zone?



**Activity Zone**

Draw a diagram to show the sunrays falling directly on the equator.



**Life Skills**

Prepare a temperature list of your city with the help of daily newspaper for one month. Make a final report at the end of the month.



**Teacher's Corner**

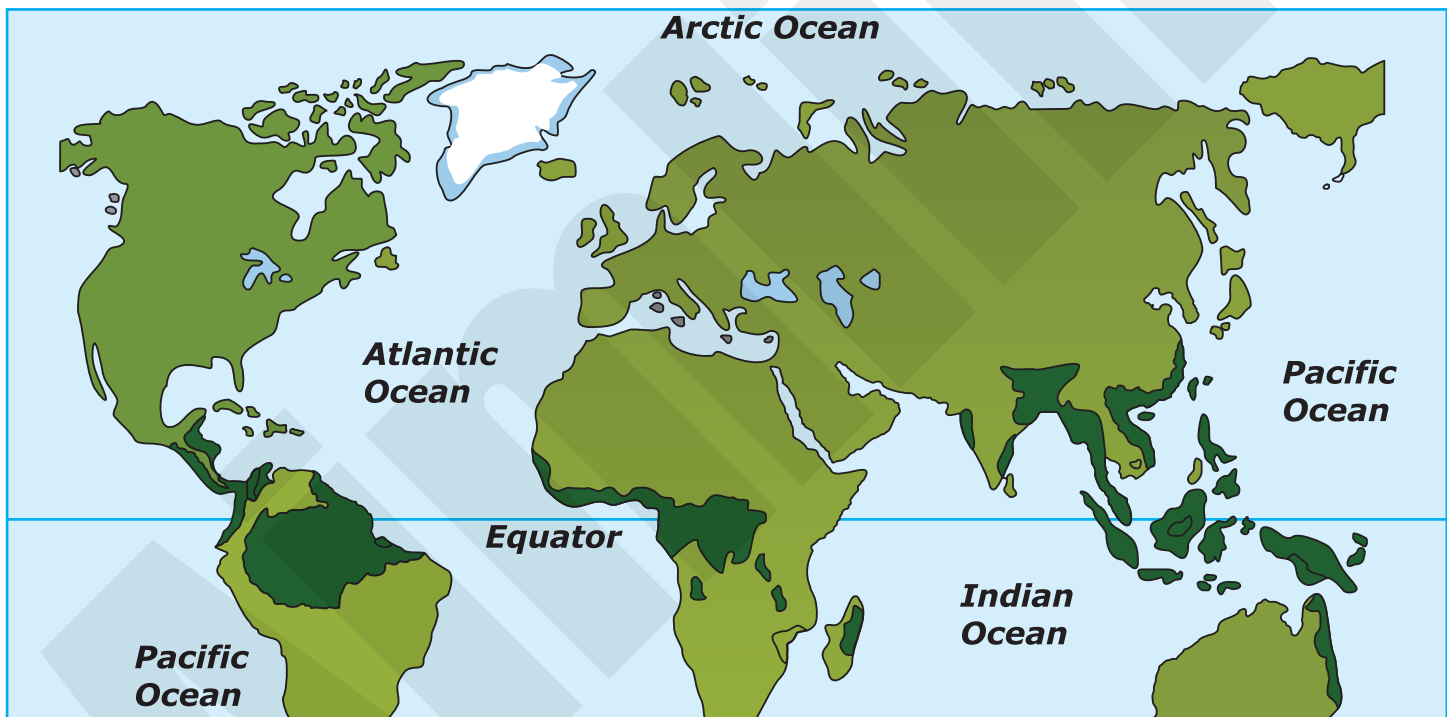
Tell the children why the summer days in Delhi and Kolkata are different.

# 5

## The Equatorial Forest Region



The equatorial forest region lies on both sides of the equator. It falls in the torrid zone and is very hot and wet. When you look at the map carefully, you will find that the continents that fall in this region are South America, Africa and South-East Asia. The countries of South America falling in this region are Colombia, Brazil and Ecuador. The African countries of Ivory Coast, Ghana, Liberia, Nigeria, Congo and Guinea lie in this region. South-East Asian countries such as Indonesia, Malaysia and some parts of India fall in this region.



### CLIMATE

#### Rainforests of the world

This region receives direct sunrays almost throughout the year and has days and nights of equal duration. It has a very high level of humidity as there is extensive evaporation of water from the rivers, ponds, seas and plants. This results into the formation of clouds which rise slowly and around 4 o'clock in the afternoon rainfall takes place accompanied by **thunderstorm**. This kind of rainfall is typical to the equatorial region

and is known as tropical thunderstorm. This region does not have any winter season.

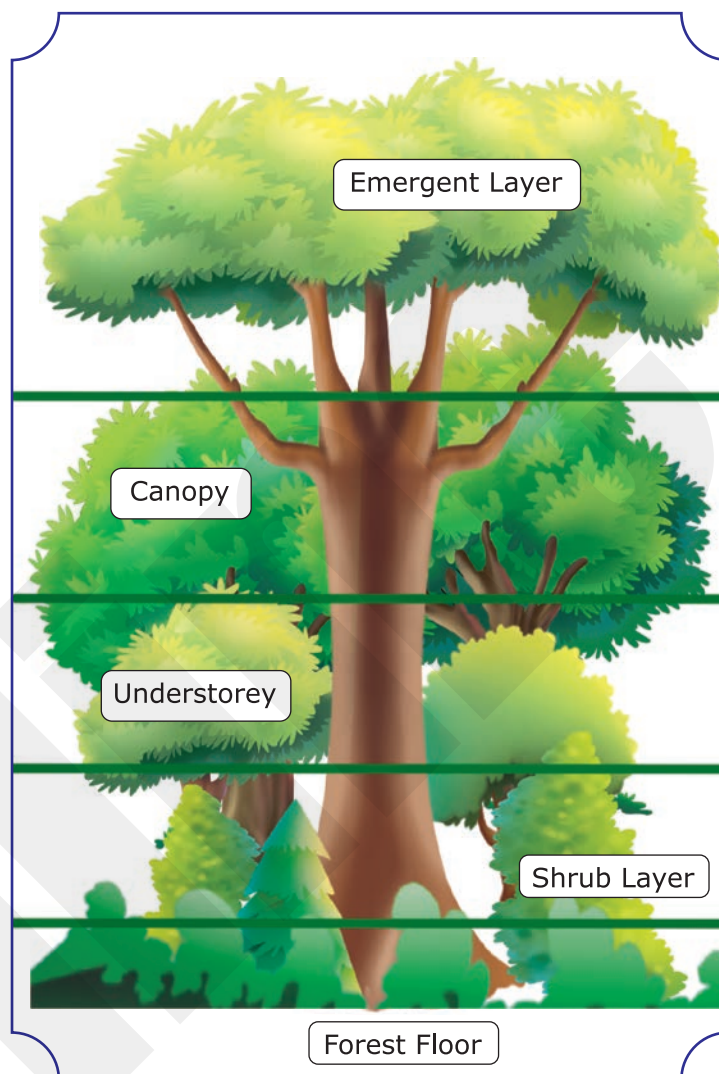
### PLANT LIFE

This region has rainfall throughout the year. As a result, there is **luxuriant** growth of trees. Their periods of growing, **fruit bearing** and **shedding** of leaves are different and varied. So, all of the trees do not shed their leaves at the same time. Hence, this type of forest is called **evergreen**.

A unique feature of this region is that the forests are found in several layers. The trees at the lowest layer are part of the **forest floor**. The next layer is made of smaller trees or shrubs and therefore is referred to as the **shrub layer**. The third layer is formed by the ferns, creepers, orchids and grass and is called the **understorey**. This forest comprises vines and creepers which climb the tall trees to get the sunlight that may not penetrate the forest as obstructed by the last layer, that is the thick **canopy**, the topmost layer.

### WILDLIFE

The equatorial forest region provides a natural habitat for a variety of animals, birds and amphibians. Several animals and birds such as monkeys, flying squirrels, flying foxes, chimpanzees etc. live on trees. They live in different layers of the forest. The water-bodies have



The layers of the equatorial forest region



A flying fox



snakes, turtles, alligators and crocodiles. The well-known anaconda snakes live in the **Amazon Basin** in South America. A great variety of fish are also found here. Birds and insects of various types and colours such as humming birds, toucans, macaws, parrots etc, are also found here.



A toucan

**Do You Know?**

Some rainforest monkeys are omnivorous, eating both animals and plants.

**HUMAN LIFE**

The dense forests of this region do not attract human settlements. However, a few tribes can be seen here. They lead a very tough life. Malaria is a common disease in this region. Some of the tribes are nomadic. They spend their life hunting and gathering. Pygmies of the Congo, Kubus of Sumatra and Semangs of Malaysia are examples of such tribal people. The Dayaks of Borneo, the Bantus of Zaire and the Amazon Indians form the farming communities. They generally practise **shifting cultivation**. It involves clearing a piece of land by burning, growing of crops for two to three years and then moving to a new place.



The Pygmies of the Congo Basin

**Plantation agriculture** was brought here by the Europeans who came to South-East Asian countries and Africa for trade. Under this system, crops are grown on a large scale for commercial purposes. The crops include tea, coffee, rubber and cocoa.





### Key Words

fruit bearing	: fruit giving
habitat	: the natural living environment of an animal or a plant
luxuriant	: growing thickly and strongly
plantation agriculture	: a system of cultivation in which crops are grown on a large scale for commercial purposes
shedding	: falling down of old leaves allowing new ones to grow
shifting cultivation	: it involves clearing of a piece of land by burning to grow crops for two to three years after which this land is abandoned as its productivity diminishes
thunderstorm	: a storm with thunder, lightning and very heavy rain



### Let's Wrap Up

- ✦ The equatorial region lies in the torrid zone and extends over both sides of the equator.
- ✦ It has a hot and wet climate. There is rainfall with thunderstorms every evening.
- ✦ There are numerous types of plants with different growing and shedding times.
- ✦ Trees in equatorial forests grow in different layers.
- ✦ These forests are full of bright and colourful animals.
- ✦ The tribes of the region practise food gathering, hunting and shifting agriculture.

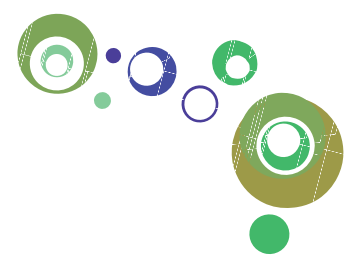


### Exercises

#### A. Fill in the blanks with the words given in the box.

shifting canopy Semangs winter torrid

1. The equatorial forest region does not have ..... season.
2. The farmers of equatorial region generally practise ..... cultivation.
3. The tallest trees of the rainforests form a .....
4. A nomadic tribe of the equatorial forest region is the ..... of Malaysia.
5. The equatorial forest lies in the ..... zone.



**B. Write short answers for the following questions.**

1. Name the different tribes living in the equatorial forest.
2. Name the crops grown on the plantation farms.
3. Which animals are found in the equatorial forest region?

**C. Answer the following questions.**

1. Discuss the location of the equatorial forest region.
2. Why do you think the climate is hot and wet in the equatorial forest region?
3. Describe in brief the structure of the equatorial forest.

**D. Multiple Choice Questions (MCQs)**

**Tick (✓) the correct option.**

1. The equatorial forest region gets which type of sunrays?  
a. direct  b. indirect   
c. lowest  d. slanted
2. How many layers of trees are there in the equatorial forest region?  
a. four  b. five   
c. six  d. seven
3. Which tribes are found in the Congo Basin?  
a. Pygmies  b. Kubus   
c. Dayaks  d. Gonds
4. Which zone falls in the equatorial region?  
a. Torrid  b. Temperate   
c. Frigid  d. None of these
5. The natural environment of an animal or plant is .....  
a. forest  b. rainforest   
c. habitat  d. shed

**E. Write 'T' for true and 'F' for false statements.**

1. The equatorial region is not very humid.
2. In the waterbodies of the equatorial region, crocodiles, alligators, snakes and turtles are found.
3. The equatorial region is found only on the north side of the equator.
4. The equatorial region has days and nights of equal duration throughout the year.
5. Summer and winter appear alternatively in the equatorial region.



**F. Match the columns.**

**Column A**

1. Pygmies
2. Dayaks
3. Plantation crops
4. Canopy
5. Anaconda

**Column B**

- a. Tea and rubber
- b. Amazon Basin
- c. Congo
- d. Topmost layer
- e. Borneo

**G. Rearrange the letters in brackets to form the correct word.**

1. Crops grown on a large scale : ..... (NOITANPTAL)
2. These people introduced plantation agriculture :  
..... (SNPAEOEUR)
3. A famous species of snakes is found in the Amazon Basin :  
..... (DANOACAN)
4. Kubus tribes are found here : ..... (RMSUATA)
5. This is also called 4 o'clock rain :  
..... (DUHTENRTOSRM IRPATOCL)



**Discuss** Why do the sunlight cannot reach the forest floor in the equatorial forest region?



**HOTS** Which dangerous insect present in the rainforests causes sleeping sickness?



**Activity Zone**

Find out the details about the rainforests of Africa. Make a list of the trees found there and also the animals which have made it their home. Make a chart and show it to your class teacher.



**Life Skills**

The rainforests are fast disappearing. Discuss in the classroom its effects on flora and fauna of the region.



**Teacher's Corner**

Discuss in the class about the plantation crops of India.

# 6

## The Hot Desert

Do you know what is a desert? It is an area which gets scanty rainfall or no rainfall at all. The ground is generally covered with thick and shifting mounds of dust.

There are various types of deserts. Those found between 15° to 30° N and S of the equator are **hot deserts**. They are located near the Tropic of Cancer and the Tropic of Capricorn, i.e., in both northern and southern hemispheres. The sun beats down from a cloudless sky here. Some




Hot Desert

examples of hot deserts are : The Sahara and the Kalahari in Africa, the Great Australian Desert in Australia, the Thar Desert in India and Pakistan and the Mexican Desert in Mexico.

Also, there are **temperate deserts** like the Gobi Desert. **Cold deserts** lie between the poles and the Arctic and Antarctic Circles, such as the Tundra Desert in Russia. The cool deserts of



The deserts of the world



Central Asia experience a very extreme climate — very hot summers and very cold winters — as they are at higher latitudes and far away from the sea. Deserts are formed because they fall under the wind belt that bring dry winds from the inland rather than the rain bearing winds from the sea. They are also the result of deforestation of the place. When infertile soil is left behind, the top soil gets blown away. All deserts are found on the western sides of the continents. This chapter covers hot deserts only.



The Sahara Desert

### CLIMATE

There are no clouds in the deserts. So during the day time deserts get heated quickly. Similarly in the night, as the sky is clear, deserts cool down very fast. Thus, the weather in the desert regions experiences extremities. Actually, the temperatures of hot deserts are amongst the highest in the world. During the day it is generally very hot and temperature may soar up to as high as  $50^{\circ}\text{C}$ , while

at the night the temperature drops down rapidly even to  $10^{\circ}\text{C}$ . Another feature of the deserts is that there is very little rainfall. In some deserts like the [Atacama](#) it has not been raining for many years.

### PLANT LIFE

There is scarce vegetation in the deserts. The plants and trees found here are adapted to face the extreme climate and scarcity of water. They have long roots that go deep down to get water. Leaves transform into thorns or wear thick waxy coatings to prevent loss of water. In some cases leaves take the form of spines to protect themselves from animals.



The Atacama Desert



The Baobab Tree



The stems are thick and fleshy and store water for the plants. Generally, shrubs with small leaves and thorny bushes are found in the deserts. Acacia, cactus and baobab are examples of trees found in this region. Also called the **bottle tree**, the baobab tree is found in the Kalahari Desert in Africa and in the Australian Desert. Its trunk is barrel-shaped and becomes hollow inside as it matures. Water is stored in this hollow portion and it is assumed that one such tree trunk can store over 1,000 litres of water.

### Do You Know?

Small patches of land are found here and there in the deserts. These patches consist of water in the form of lakes or springs. These are called oasis. Date palm and other desert trees are found around these oasis. We can see human life concentrated most often around these oasis.

### ANIMAL LIFE

Different types of animals and insects are found in the deserts, such as hyenas, hedgehogs, jerboas, foxes, scorpions and spiders. Some of them sleep during the day under the ground and come out at night to avoid heat. However, the most important and useful animal found here is the camel, fondly termed as the **ship of the desert**. It stores food and water in its hump and thus survives without food and water for several days. It stores food in its hump in the form of fat. It has thick padded feet with long legs which help it walk in the sand. The eyelids of camel protect its eyes during sandstorm. Besides, its small ears and nostrils prevent sand from entering its body. Its tough and strong lips and jaws help it eat and chew thorny bushes and cacti without hurting itself.



Hedgehog



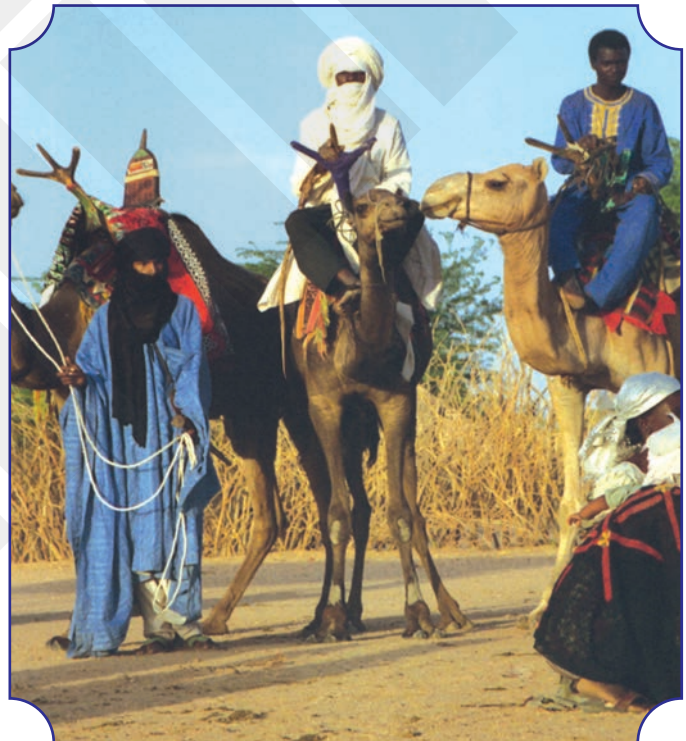
Scorpion

## HUMAN LIFE

It is very difficult for human beings to live in the deserts and their population is very scarce in such areas. The main occupations are animal rearing, farming and trading. Some residents keep camels, goats, horses and sheep, but because of the scarcity of water and food or pasture for the cattle they move from one place to other. They carry their belongings wherever they go. The **Tuareg tribe** of Western Sahara and the **Bedouins** of North Africa and Arabia live like this. The tent of a Bedouin is made of goat or camel skin and thus can easily be carried from place to place in search of better prospects. The camels are used for transport and trading. Merchants or traders move from one place to another with their goods. The main items for trade are rugs, carpets, foodgrains, ropes and dates. Nowadays, the use of camels is slowly diminishing and is being replaced by modern means of transport such as cars and jeeps.

Cultivation is practised in the oasis and near the rivers. Rice, millet and maize are the main crops grown in summer, while winter crops include wheat, barley, beans and lentils. Date palm is the most commonly found tree in the deserts. The fruit of this tree is rich in vitamins and sugar. Its seed is fed to the cattle, while ropes are prepared from stem.

Another important activity is mining. The Sahara Desert is rich in iron ore, copper, petroleum and natural gas. Atacama Desert is famous for its copper and nitrate reserves. Iran, Iraq, Kuwait and Saudi Arabia are very rich in petroleum.



The Tuareg Tribe

### Do You Know?

The Hajj is a pilgrimage to Mecca undertaken by Muslims around the world. It occurs over five days every year, and is the largest pilgrimage in the world.



- Baobab : a tree found in deserts of Africa and Australia, also called bottle tree
- Bedouins : a tribe of North Africa which keeps moving from one place to another
- Tuareg : a tribe of Western Sahara Desert

## Let's Wrap Up

- ✦ There can be hot, temperate and cold deserts. The hot ones are found on western side of continents.
- ✦ The days are very hot and the night are very cold.
- ✦ Deserts receive very little or no rainfall.
- ✦ Mostly shrubs and bushes are found here.
- ✦ The camel is the most important animal, while the date palm is the most important tree.
- ✦ The prime human occupations in the deserts are : animal rearing, trading, cultivation and mining.



### A. Fill in the blanks with the words given in the box.

Atacama   thick   western   Sahara   clouds

1. There are no ..... in the deserts.
2. In the ..... Desert, it has not been raining for many years.
3. The ..... Desert is rich in iron ore, copper, petroleum and natural gas.
4. The stems of desert plants are .....
5. All deserts are found on the ..... side of the continents.

**B. Write short answers for the following questions.**

1. What is a desert?
2. In which continent is the Thar Desert located?
3. What are the chief occupations of the people of the desert?

**C. Answer the following questions.**

1. Describe the climate conditions in the desert.
2. Discuss the economic importance of date palm tree.
3. How have plants adapted themselves to desert life?

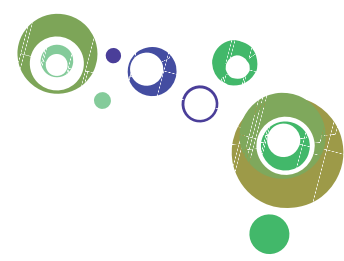
**D. Multiple Choice Questions (MCQs)**

**Tick (✓) the correct option.**

1. Bedouins are found in.....  
a. Arabia  b. Sahara   
c. Kalahari  d. Thar
2. The tent of a Bedouins is made from the skin of .....  
a. goat  b. buffalo   
c. fox  d. lion
3. Copper and Nitrate are found in .....  
a. Atacama  b. Sahara   
c. Arabia  d. Thar
4. The roots of the deserts plants are .....  
a. long  b. short   
c. medium  d. very big
5. The camel stores water in its .....  
a. hump  b. legs   
c. tail  d. stomach

**E. Write 'T' for true and 'F' for false statements.**

1. Tundra Desert in Russia is a cold desert.
2. Deserts are full of vegetations.
3. The camel has small padded feet with short legs which help it walk in the sand.
4. Date palm is rich in vitamins and sugar.
5. The baobab tree is also called the bottle tree.



**F. Match the columns.**

**Column A**

1. Thar Desert
2. Sahara Desert
3. Tundra Desert
4. Kalahari Desert
5. Atacama Desert

**Column B**

- a. Russia
- b. India & Pakistan
- c. Africa
- d. South America
- e. Africa

**G. Rearrange the letters in the brackets to form the correct word.**

1. This is an animal found in desert :  
..... (LCEMA)
2. This is a patch of land in the desert that has water :  
..... (SIOSA)
3. This is a country very rich in petroleum :  
..... (ATKIWU)
4. This is a tribe found in Africa :  
..... (UNIBODE)
5. This tree can store over 1,000 litres of water :  
..... (BBBOAA)



**Discuss**

Why do we find human settlements around Oases?



**HOTS**

Suppose you have to go to a desert for a month. What precautions will you take there?



**Activity Zone**

Collect the pictures of life style of the people of a desert and paste them in your scrapbook.



**Life Skills**

Have you seen the dresses of Arabian Sheikhs? Compare them with the dresses of Indian Muslims.



**Teacher's Corner**

Tell the students about the type of houses found in deserts.

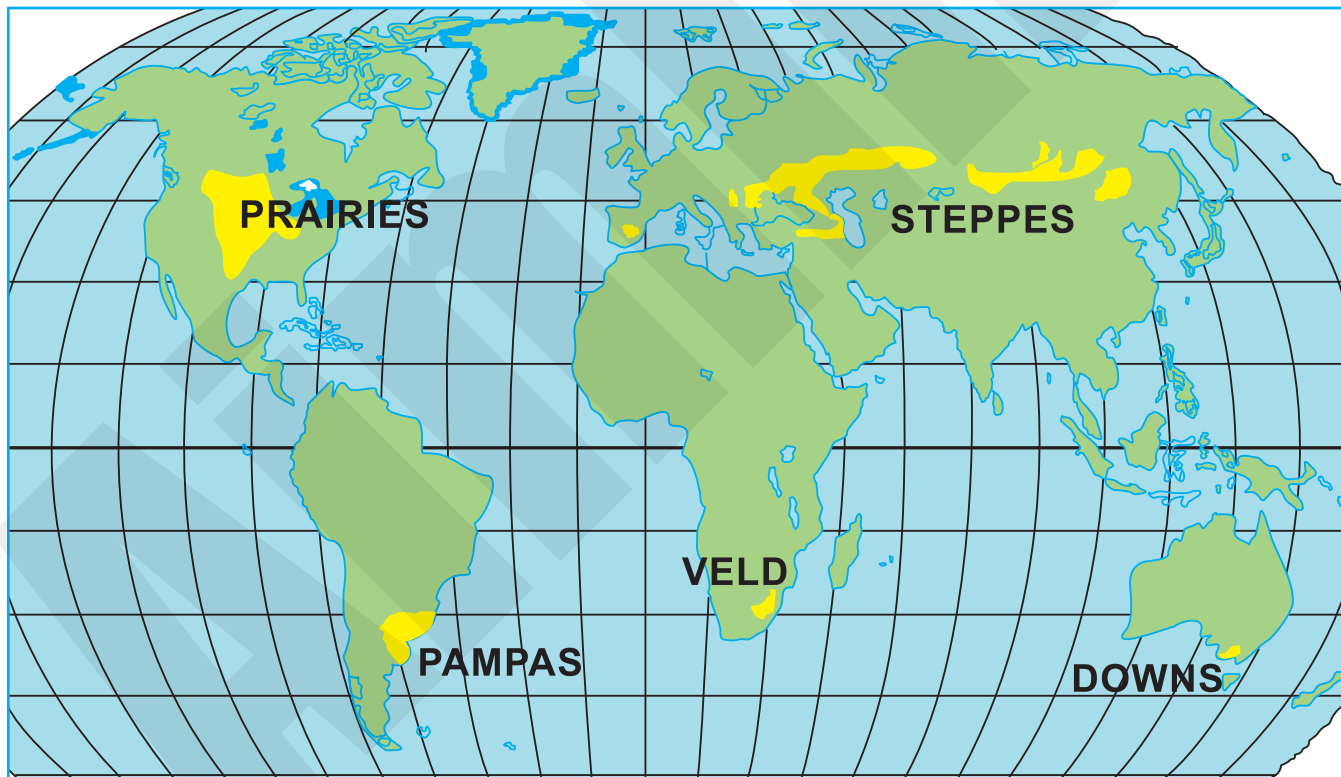
# 7

## The Temperate Zone

The temperate regions are neither too cold nor too hot. These are situated away from the equator between  $40^{\circ}$  N and  $55^{\circ}$  N in the northern hemisphere and between  $40^{\circ}$  S and  $55^{\circ}$  S in the southern hemisphere. The temperate regions are famous for their grasslands. These regions hardly have trees and high mountains. The grasslands are known by different names in different countries or regions.

The different grasslands are :

1. Prairies in North America
2. Steppes in Russia
3. Veld in South Africa
4. Downs in Australia
5. Pampas in South America



Temperate grasslands of the world

### Do You Know?

The Word **Prairie** has originated from a French word meaning meadows or grassland.



There are some difference between the grasslands of the northern hemisphere and those of the southern hemisphere. The Prairies and the Steppes which are both in the northern hemisphere are located in higher latitude than the Pampas, the Velds and the Downs which are in the southern hemisphere. Thus, only during the warmer months crops can be grown in the northern hemisphere.

## CLIMATE

There are different climates in the grasslands of the northern hemisphere and those of the southern hemisphere. In the northern hemisphere the grasslands are found in the interior regions of the continents, making the area hot in summer and cold in winter. This is known as the **continental type of climate**. Occasionally, the **Chinook**, a kind of hot winds blows over the Prairies in spring. It causes the snow to melt and makes grazing possible.

But the temperate grassland zone of the southern hemisphere lies near the coasts. So its climate is moderate, that is, it is neither too hot nor too cold here. The climate remains very pleasant throughout the year.

## PLANT LIFE

Those trees are found in these regions which are planted by the farmers. The grass vary in size from region to region. As there is more rainfall in the Prairie region of North America,



The Pampas




The Prairies



The alfalfa plant is also known to have medicinal properties.

### Do You Know?

The hot winds blowing over the Prairies are called Chinook because they come from the land of the Chinook. The land is in the west at the Rocky Mountains.



the grasses found here are mostly taller. On the other hand, since the steppes have continental type of climate, the grasses found here are mostly short. Also, grasses keep changing their colour with the change in season. They are green in spring and brown in summer. In autumn they are dry and in winter they die. However, the roots remain buried in snow and again grow during spring. Alfalfa is the most common grass found here. Cattle feed on it.

## ANIMAL LIFE

There are variety of animals found in the grasslands. Some of the large animals found in the grasslands of the northern hemisphere are bison, grizzly bears and a few fierce animals like wolves. Anacondas and llamas are found in southern hemisphere. Australia is famous for its wallabies, koalas and kangaroos.



Bisons



Anaconda

A number of migratory birds, like the swallow, are also seen. The temperate zone has become the abode for wild animals like wild horses and deer. In winter, several small animals of this region e.g. squirrels and hedgehogs sleep rather than search food. Going in the deep and long winter sleep like this is known as **hibernation**.

## HUMAN LIFE

Farming is quite developed and advanced in these regions. Wheat, barley, oat, rye and flax are some of the crops grown in the Prairies of North America. This area is very fertile, it is also regarded as the '**granary of the world**'. Agriculture is carried out here extensively in a mechanised way. Large and heavy machines are used at different stages of cultivation. Wheat is also grown in



Cowboys rounding up cattle



Canada, Australia and Russia. The machines known as **combine harvesters** are used to harvest the crops.

Cattle rearing or ranching livestock is another important activity in the grasslands. Special grasses like alfalfa and clover are grown for the animals. They are well fed and maintained. Cowboys in the Prairies ride horses and look after the cattle and farms called **ranches**. In South America, the cowboys are called **gauchos** and they round up cattle on enormous farms known as **estancias**. These cowboys are expert horsemen.

At present, Argentina is one of the leading exporters of meat and leather products.

Difference tribes are still found in the grasslands. They practise herding. The **Kirghiz tribe of the Steppes** graze their sheep, oxen, horses and goats. Though they are now also settling down to farm life. The **Hottentots of South Africa** rear cattle, goat and sheep. The American Indians of North America have now lost their separate identity and become a part of the modern society.



A Kirghiz family



- |                    |  |
|--------------------|--|
| grasslands         | : lands or areas covered with grasses as the natural vegetation              |
| chinook            | : a type of hot winds that blow over the Prairie grasslands of North America |
| combine harvesters | : machines used for extensive cultivation on large farms                     |
| estancias          | : large farms in South America   |
| gauchos            | : South American cowboys who look after cattle and farms by riding on horses |



## Let's Wrap Up

- ✦ The temperate grasslands are located in the temperate zone between 40° N and 55° N in the northern hemisphere and between 40° S and 55° S in the southern hemisphere.
- ✦ The grasslands have different names in different countries—the Prairies (North America), the Steppes (Russia), the Downs (Australia), the Velds (South Africa), and the Pampas (South Africa).
- ✦ The climate of the grasslands of the northern hemisphere is continental type while those of the southern hemisphere have moderate type due to nearness to the oceans.
- ✦ There are hardly any trees and high mountains. Grasses are tall in certain regions, while short in others.
- ✦ Human activities or occupations include extensive mechanised farming, nomadic herding and livestock herding.



### A. Fill in the blanks with the words given in the box.

hot      ranches      moderate      Australia      Southern

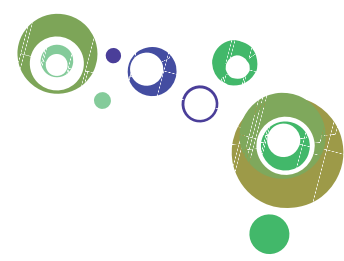
1. The grasslands in the southern hemisphere have a ..... climate.
2. Koalas are found in .....
3. The temperate grassland zone in the ..... hemisphere lies near the coast.
4. The Chinook is a type of ..... wind.
5. In South America, the cowboys are called .....

### B. Write short answers for the following questions.

1. For what are the temperate regions famous?
2. Who are gauchos?
3. Write the name of grasslands found in Australia.

### C. Answer the following questions.

1. Write about the natural vegetation of the temperate regions.
2. How is the climate in the temperate zone?
3. Why are the Prairies called the granary of the world?



### D. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

- Chinook is a type of .....  
a. animal  b. wind   
c. climate  d. plant
- The Kirghiz tribes are found in .....  
a. Velds  b. Pampas   
c. Steppes  d. Downs
- The grasslands of Australia are called .....  
a. Downs  b. Prairies   
c. Pampas  d. Veld
- Which tribes live in South Africa?  
a. Kubus  b. Hottentots   
c. Koalas  d. Mundas
- Which grasses are found in the Steppes?  
a. Short  b. Tall   
c. Medium  d. Very tall

### E. Write 'T' for true and 'F' for false statements.

- The temperate regions are very hot.
- Only during the warmer months crops can be grown in the northern hemisphere.
- The grasslands are known by different names in different countries.
- Chinook a kind of hot winds' blows over the prairies in winter.
- Grasses of steppes keep changing their colour with the change in season.

### F. Match the columns.

#### Column A

- Pampas
- Veld
- Downs
- Prairies
- Steppes

#### Column B

- South Africa
- Australia
- North America
- Russia
- South America



**G. Rearrange the letters in brackets to form the correct word.**

1. Another name for cowboys :  
..... (SOUHGCA)
2. An animal found in the southern hemisphere :  
..... (LMLAA)
3. The grass grown for cattle :  
..... (AFAALFL)
4. Another name for extensive farms :  
..... (SANICAETS)
5. Chinook blows over the Prairies in this season :  
..... (NPSRIG)



**Discuss**

What is hibernation?



**HOTS**

Why are dairy and meat processing factories well developed in the prairies region?



**Activity Zone**

Collect pictures of various tribes that live in various grasslands and paste them in your picture book.



**Life Skills**

Imagine yourself a gaucho working in South America. Describe a day in your life. Think of the dress you would wear, the work you would do and the problems that you would face.



**Teacher's Corner**

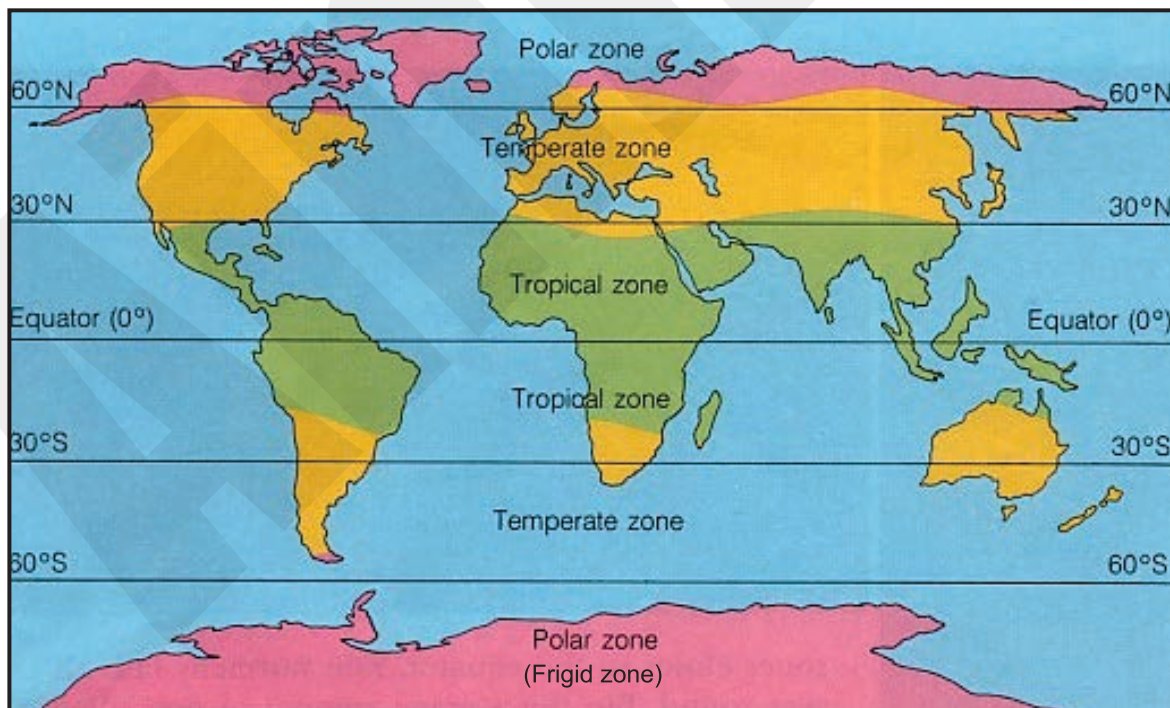
Discuss in the class the difference in the agriculture pattern followed in the Prairies region and India.

# 8

## The Frigid Zone



On the Earth, there are two frigid zones. One is found in the northern hemisphere and the other in the southern hemisphere. The northern frigid zone is located between the North Pole ( $90^{\circ}$  N) and the Arctic Circle ( $66\frac{1}{2}^{\circ}$  N) while the southern frigid zone is found between the South Pole ( $90^{\circ}$  S) and the Antarctic Circle ( $66\frac{1}{2}^{\circ}$  S). Thus, their northern and southern limits are the North Pole and the South Pole respectively. The north and south frigid zones are permanently covered with ice. The coldest place in the world is the continent of Antarctica, which lies in the south frigid zone. It is also called the **frozen continent**. The regions around the Poles are uninhabited due to severe cold and lack of vegetation. The large part of Canada, Alaska, Coastal Greenland, Iceland and Siberia come under this region. Many countries, including India, have sent expeditions to these regions for explorations.



Polar Zone (Frigid zone)

## CLIMATE

Both the frigid zones are located far from the equator and they receive only slanting sunrays even during summer. The slanting rays are so feeble that they are not able to even warm the land. During winter session, the temperatures may drop down to even  $-40^{\circ}\text{C}$ . The summer hardly lasts for two to three months and has temperature rise of  $3^{\circ}\text{C}$  to  $12^{\circ}\text{C}$ . There is a very scanty rainfall, hardly 15–30 cms in a year.



Aurora Australis

Throughout the summer, the snow melts. The ice caps of the Arctic and Antarctic remain intact. In the summer, the Polar regions witness continuous day-light, even at midnight. On the other hand, in the winter these regions are enveloped in continuous darkness, even at noon. During the winter, the snow keeps falling and the soil stays frozen hard. In June, when the north frigid zone gets continuous sunlight, the dark southern one experiences continuous dark nights. There is opposite situation in the month of December. At times the sky is lit up by **Aurora Borealis** in the northern frigid zone and by the **Aurora Australis** in the southern frigid zone. They are naturally occurring bright lights, commonly seen at night in the polar regions. This occurrence is due to the collision of charged particles from the Earth's atmosphere.

## PLANT LIFE



A blueberry shrub

The soil in this region is permanently frozen except in the summer season. Hardly any plants or crops grow and survive here. When the snow melts during the summer, some shrubs like mosses, lichens and grass grow. Some flower-bearing plants and berry-bearing shrubs like cranberries, blueberries and wild currants are found here. A few

vegetables are also grown by the inhabitants for personal consumption. It is impossible for trees to grow in these regions.



A snowy owl

## ANIMAL LIFE

Some animals have adapted themselves to the excessive cold of the frigid zones, like caribou, reindeer, ermine, musk ox, bear, fox, hare etc. Some birds like the Arctic tern and snowy owl also live here. They all withstand the excessive cold due to thick white covering of fur on their bodies. When the snow melts, this

covering changes its colour from white to greyish-brown.

This change of colour camouflages them at various times of the year. In addition to these animals and birds, there are plenty of fish, seals, walruses and whales also inhabit the region.



A reindeer




The Inuits

## HUMAN LIFE

Life is very difficult and harsh in the region. Very few people live here. The **Inuits** or **Eskimoes** live in the Arctic Tundra region. They have adapted themselves to the harsh conditions. Their main occupations include trapping and hunting

of animals, herding of reindeers and catching of fish like Salmon and Arctic char along the coast.

The Inuits were earlier called Eskimoes. They used to live in the houses made up of blocks of ice. Such houses are called as **igloos**. They used to hunt seals, whales, and walruses with harpoons. Harpoon was a kind of spear with a leather rope attached to it. The Eskimoes also used bows and arrows, made of wood and whale bone. They hunted the sea animals on small boats made of seal or walrus skin. Such boats are known as **kayaks**.



But now the situation has changed. The Inuits have started using rifles, instead of harpoons, to hunt animals. They now prefer living in permanent wooden houses instead of igloos. Other tribes of the frigid zones include the Lapps in the northern part of the Scandinavia and Samoyeds, Yakuts and Chukchis in Siberia.


### Do You Know?

The Inuits visit each other's igloos through a domed passage built in between closely placed igloos. Thus, they do not have to go out in the bitter cold.



Igloo

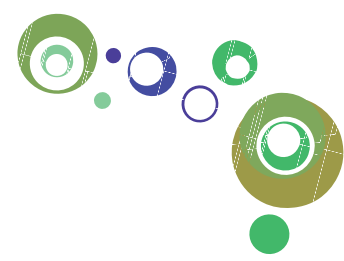
### Key Words

- 
- aurora austrails : bright light in the sky seen usually at night in the south frigid zone
  - aurora borealis : bright light in the sky seen usually at night in the north frigid zone
  - expedition : an organised journey or voyage with a particular aim

### Let's Wrap Up



- ✦ The north frigid zone lies between the Arctic Circle and the North Pole, while the south frigid zone is between the Antarctic Circle and the South Pole.
- ✦ The areas of the frigid zones include Alaska, Canada, Coastal Greenland, Scandinavia, Siberia and Iceland.
- ✦ It is extremely cold almost throughout the year and snow melts only during two to three summer months of the region.
- ✦ The **Aurora Borealis** and **Aurora Australis** are the curtains of bright lights, usually seen at nights in the frigid regions. They appear due to the collision of charged particles in the atmosphere.
- ✦ Except a few lichens, shrubs, mosses and grass that grow during two to three months of the summer, there are hardly any plants found here.
- ✦ A few animals such as polar bear, caribou, reindeer, fox, hare, ermine, musk ox etc. have adapted themselves to the extreme cold of the region.
- ✦ It is very harsh and difficult for human beings to survive here.




# Exercises



## A. Fill in the blanks with the words given in the box.

Summer      Antarctica      slanting      Kayaks      igloos

1. The coldest place in the world is the continent of .....
2. The frigid zone receives the ..... rays of the sun.
3. Inuits used to live in .....
4. In the ..... the Polar regions witness continuous day light.
5. The small boats made of seal or walrus skin are known as .....

## B. Write short answers for the following questions.

1. Name two frigid zones on the Earth.
2. What are the latitudinal extents of the frigid zones?
3. Name the tribe found in the northern part of Scandinavia.

## C. Answer the following questions.

1. Why is it not possible to grow crops in the frigid zone?
2. Describe the different animals found in the frigid zone.
3. How has the climate influenced the lives of human beings living in the frigid zone?

## D. Multiple Choice Questions (MCQs)

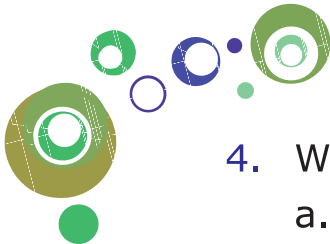
Tick (✓) the correct option.

1. Which frigid zone receives continuous day-light in the month of June?
 

a. Northern	<input type="checkbox"/>	b. Southern	<input type="checkbox"/>
c. Both northern and southern	<input type="checkbox"/>	d. None of these	<input type="checkbox"/>
2. Which of the following animals not found in the frigid zone?
 

a. Bison	<input type="checkbox"/>	b. Fox	<input type="checkbox"/>
c. Hare	<input type="checkbox"/>	d. Reindeer	<input type="checkbox"/>
3. The northern frigid zone lies .....
 

a. near the Arctic Circle	<input type="checkbox"/>	b. around the North Pole	<input type="checkbox"/>
c. between the Arctic Circle and the North Pole	<input type="checkbox"/>	d. around the South Pole	<input type="checkbox"/>



4. Which country is not found in the frigid zone?
- a. Canada  b. Alaska
- c. Brazil  d. Iceland
5. During winter session, the frigid zone temperatures may drop down to
- a. - 3° C  b. - 40° C
- c. - 15° C  d. 0° C

**E. Write 'T' for true and 'F' for false statements.**

1. The main human occupation in the frigid zone is cultivation.
2. In the Tundra region, we find the Yakuts.
3. The winter season lasts for only two to three months in the frigid zone.
4. The Aurora Australis are seen in the north frigid zone.
5. Many trees are found in the frigid zone.

**F. Match the columns.**

**Column A**

1. Yakuts
2. Inuits
3. Aurora Australis
4. Lapps
5. Igloos

**Column B**

- a. Scandinavia
- b. South Frigid Zone
- c. Houses made of ice blocks
- d. Tundra region
- e. Siberia

**G. Rearrange the letters in brackets to form the correct word.**

1. An animal found in the frigid zone :  
 ..... (UROCBIA)
2. The Inuits were earlier called so :  
 ..... (KIMESOES)
3. Special light in the sky seen at night in the south frigid zone :  
 ..... (ARORAU ARTUSALSI)
4. A tribe that lives in Siberia :  
 ..... (SKYAUT)
5. This was earlier used by the Inuits to catch fish :  
 ..... (SNPOHOAR)



### Discuss

Why is life hard for human beings in the frigid zone?



### HOTS

In the frigid zone, the temperature goes down below  $0^{\circ}$  C. The water freezes at temperature below  $0^{\circ}$  C. How do the people of this region bathe and drink water?



### Activity Zone

Collect the pictures of the animals found in the frigid zone and paste them in the space given below. Make a note of their food habits and adaptations.



### Life Skills

Discuss about the life style of people of frigid zone in the class. Compare it with the people of Ladakh region of Jammu and Kashmir.



### Teacher's Corner

Discuss in the class about the houses made in the frigid zone.

All living and non-living things on the Earth make up its **environment**. It consists of four basic elements :

Hydrosphere, Atmosphere, Lithosphere and Biosphere.

## HYDROSPHERE

The hydrosphere is that part of the Earth's surface which is covered by water. So, it is the sphere or region of water without which life cannot survive on the Earth. It consists of all the water bodies on the Earth, such as the seas, oceans, lakes, rivers, underground water, etc. Whether in solid (ice), liquid or gaseous (water vapour) form, the whole of water world constitutes hydrosphere.

Water mainly covers 71% of the Earth's surface and the remaining 29% is land.

That is why the Earth is also known as the **water planet**. No other planet has been found having water content as Earth. The water of the oceans and the seas is salty, while rivers, lakes and ponds have potable and fresh water.

Water is continuously in motion because of the processes of **evaporation** and **condensation**. It evaporates from different water bodies during the day time when it is hot and moves up as water vapour into the atmosphere. At the higher altitudes of atmosphere the water vapour cools down to change into water droplets and falls on Earth as rain. This entire process is called the **water cycle**.



Our environment



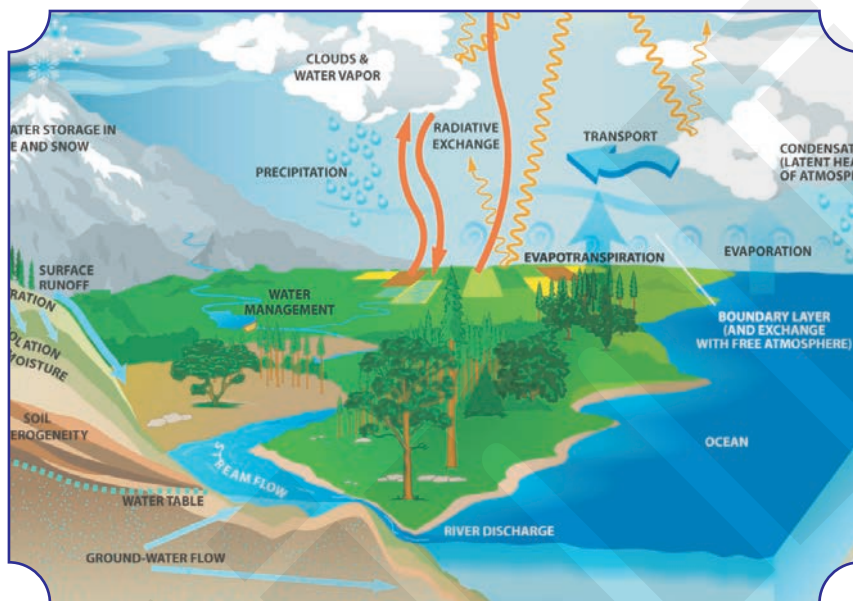
The Hydrosphere



Life on the Earth is impossible without water. It has varied uses for human being. It is used in animal rearing, cultivation of crops, drinking, industries, bathing, washing, cooking etc. It is one of the oldest modes of transportation. The marine life exists in the water bodies which provide us with food, medicines, etc. The ocean influences and controls the climate of a particular region.

## ATMOSPHERE

Atmosphere is the colourless, transparent and odourless layer of gases surrounding the Earth's atmosphere. It acts as a protective shield for the Earth and its creatures, since it prevents the harmful rays of the sun from touching the Earth. Only those rays of the sun can pass through atmosphere which are necessary for the continuity of life on Earth.



Water cycle

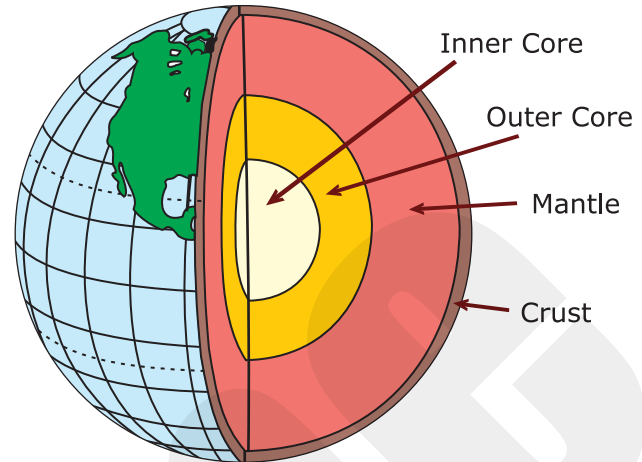


Atmosphere

The atmosphere consists of a number of gases and water vapour in various proportions. Its two main constituents are : nitrogen (78 per cent) and oxygen (21 per cent). Other gases like carbon dioxide and hydrogen are also found in small quantities. There are traces of some rare gases like helium, krypton and argon. Oxygen is the most important gas for the existence of life. Carbon dioxide is needed by plants for making food. Water vapour in the atmosphere helps in controlling the temperature of a place and helps in the formation of rainfall.

## LITHOSPHERE

Lithosphere is the surface of the Earth which is made of solid rocks and soil. It is also known as the **crust**. It is the thinnest layer of the Earth. There are two more layers below the lithosphere or crust called as mantle and core. Mantle is the middle layer which is thicker than the crust but thinner than the core. It is found below the continents and under the oceans. As you go deeper inside the Earth, it gets hotter and hotter and there is increase in pressure. The core has two parts. The outer core is liquid and the inner one is solid. All the natural resources of the Earth are found on the lithosphere.



The structure of the Earth

## BIOSPHERE

All living beings together exist in the biosphere. It includes those parts of atmosphere, hydrosphere and lithosphere, where life exists. This is so because living organisms cannot survive without air, water and land. Each living organisms has its own particular environment in which it exists and this is known as its **ecosystem**. Biosphere includes all plants, animals and other living things functioning together with non-living objects. The biosphere

forms only a very small part of the Earth's mass. Biosphere is the only layer that makes living on the Earth possible.

### Do You Know?

Land, water and air constitute the abiotic environment, while all living organism, namely plants, animals and humans taken together make up the biotic environment.



- water cycle : the process involving evaporation and condensation that keeps water circulating constantly in motion through the environment
- crust : the outermost or uppermost layer of the Earth that is made up of solid rocks and soil
- mantle : the middle layer of the Earth
- core : the innermost or the deepest part of the Earth

### Let's Wrap Up

- ✦ Environment consists of all the living and non-living things on the Earth.
- ✦ There are four basic elements or components of the environment : Hydrosphere, Atmosphere, Lithosphere and Biosphere.
- ✦ The hydrosphere consists of all the water bodies and sources found on, in and around the Earth.
- ✦ The atmosphere is the gaseous layer around the Earth.
- ✦ The lithosphere is the surface of the Earth. It is made up of solid rocks and soil.
- ✦ The biosphere includes those part of the hydrosphere, atmosphere and lithosphere where living organisms are found.



#### A. Fill in the blanks with the words given in the box.

lithosphere    Nitrogen    Atmosphere    Hydrosphere    Water

1. The Earth is also known as ..... planet.
2. All the natural resources of the Earth are found in the .....
3. The ..... includes all water bodies.
4. .... has the highest proportion in atmosphere.
5. .... is the gaseous layer surrounding the Earth.

**B. Write short answers for the following questions.**

1. What are the four elements of environment?
2. Which gas is needed by plants for making food?
3. Where do all living things together exist?

**C. Answer the following questions.**

1. Explain the importance of hydrosphere.
2. What is water cycle?
3. Why is the biosphere very important?

**D. Multiple Choice Questions (MCQs)**

**Tick (✓) the correct option.**

1. Which of the following is not a rare gas?  
a. Helium  b. Krypton   
c. Hydrogen  d. Argon
2. The percentage of nitrogen in the atmosphere is .....  
a. 87  b. 29   
c. 78  d. 1
3. Evaporation and condensation relate to .....  
a. hydrosphere  b. atmosphere   
c. lithosphere  d. none of these
4. Which of the following is not a part of biotic environment?  
a. Land  b. Air   
c. Winter  d. Water
5. Marine life exists in .....  
a. hydrosphere  b. lithosphere   
c. biosphere  d. troposphere

**E. Write 'T' for true and 'F' for false statements.**

1. Oxygen helps in the formation of clouds.
2. Rivers are main sources of water.
3. The inner core of the Earth is liquid.
4. 71 per cent of the Earth is covered by land.
5. The layer below the crust is known as core.

**F. Match the columns.**

**Column A**

1. Lithosphere
2. Nitrogen
3. Carbon dioxide
4. Rare gas
5. Biosphere

**Column B**

- a. 78 per cent
- b. Living beings
- c. Argon
- d. Crust
- e. Making food by plants



**G. Rearrange the letters in brackets to form the correct word.**

1. The most important gas for living beings :

.....

(NOEXGY)

2. The sphere with living beings :

.....

(EREHSBPOI)

3. Life found in water :

.....

(REMNIA EIFL)

4. The thinnest layer of the Earth:

.....

(TSURC)

5. The innermost layer of the Earth :

.....

(ECRO)



**Discuss**

Why is the Earth called the 'water planet'?



**HOTS**

How would our life be without water?



**Activity Zone**

Make an aquarium of your own. Keep a record of changes taking place for one month.



**Life Skills**

Discuss with your friends the relevance of celebrating the Earth Day.



**Teacher's Corner**

Ask the children to discuss on the hypothetical condition of our life without atmosphere.

Sometimes we feel our eyes burning or we suddenly start coughing, when we travel through traffic. Sometimes, we suffer from frequent colds. This is often due to **pollution**.

Pollution means dirtying of air, water, land or soil because of harmful or unpleasant substances added to them. The substance which pollutes is called **pollutant**. The person or factor that pollutes the environment is a **polluter**.



Pollution

There are different kinds of pollution. The main four types of pollution are : Air pollution, Water pollution, Noise pollution and Soil pollution.

### AIR POLLUTION

There is a balance in the atmosphere among the various gaseous constituents, such as oxygen, nitrogen, helium, carbon dioxide, krypton, argon, water vapour etc. If this balance gets disturbed, it results in pollution and affects the life on Earth very badly.



Gases released from industries

The various sources of air pollution are :

1. Poisonous gases like carbon monoxide, sulphur dioxide, ammonia etc. released from factories, are very harmful for human beings, plants and animals. Industries need to work out ways of reducing the amount of harmful gases before releasing their waste matter into the environment.



2. Poisonous gases released from vehicles are the major source of air pollution. The number of cars, scooters, motorcycles, trucks, buses etc. is growing rapidly day by day. We also have old run-down vehicles such as old buses and auto rickshaws on the roads. They all give out many poisonous gases which mix up with the atmosphere. They cause nausea, cough, irritation of eyes, etc. Vehicular pollution is a major threat to the environment. In order to keep the air clean, the government should make the use of CNG in cities mandatory. Besides, periodic pollution tests should also be carried out by the special



Vehicular pollution


officials to be appointed for this purpose.



Burning dry leaves

3. The domestic sources of pollution are also not far behind. They include throwing of garbage on the road and smoke from the use of wood and coal in various houses, barbecues, dhabas, bonfires, restaurants, etc. If the ventilation is inadequate and the appliances poorly

maintained, carbon monoxide may be produced. Burning of wastes like dry leaves also causes air pollution. All this can cause asthma, bronchitis and different lungs problems. The people should be made aware that if they do not check air pollution, they and their children would suffer from numerous diseases and deaths resulting thereof.



4. Trees absorb excess carbon dioxide from the air. But they are being cut down mindlessly to build houses, make furniture, paper, etc. Chopping of trees leads to less oxygen or more carbon dioxide in the air. The ratio between oxygen and carbon dioxide in the air, which in turn badly affects the health of living beings, including the humans. So, we should try hard to plant, protect and preserve more trees and prevent the impending hazards from occurring.



Cutting trees

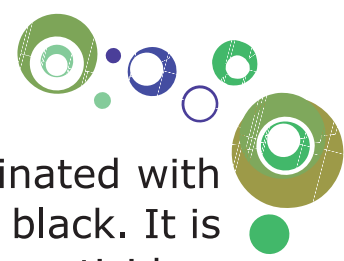
## WATER POLLUTION

Water pollution is caused by discharging the pollutants into water bodies like a lake or river. Different types of pollutants get into the water bodies through sewage, discharge of industrial and farm wastes, throwing of garbage and domestic water, defecating etc. They are very harmful for plants and animals of water bodies. They make water unfit for human uses. The fish of such polluted water bodies, if consumed, may cause many water borne diseases like jaundice, dysentery etc. and also skin diseases. Industries should detoxify the waste materials before discharging them in water bodies. The sewage should be treated before being discharged in a water body. Human beings should not pollute water bodies by bathing, washing or defecating in water bodies.



Water pollution

Let us take Delhi as a case study. The river Yamuna has been the main source of drinking water in Delhi for a long time. But it is in a very bad state today, as it is getting severely polluted every day. Delhi alone is



responsible for 80% pollution. The river is reversely contaminated with domestic sewage and industrial wastes. Its water has turned black. It is devoid of any plants or any other life forms. It is having lots of pesticides, chemicals and domestic wastes which give out a dreadful stink. Something needs to be done urgently to save this river.



Noise pollution

## NOISE POLLUTION

Noise pollution is the result of harsh sounds caused by human beings above comfort level. It degrades the quality of environment and hurts all living beings. Motor vehicles (e.g., cars, bikes, buses, trucks, etc.), aeroplanes and trains are the leading sources of noise pollution. It can also be caused

by light and heavy machines, construction work, loudspeakers, TV and music systems. It can lead to irritation, hearing loss, sleep disturbances, etc. Animals are also affected. Have you seen dogs becoming restless when fire crackers burst on the festival of Diwali?

We all should contribute towards lowering down the noise pollution. Horns should not be blown near schools and hospitals. We should avoid playing loud music and using loudspeakers.

## SOIL POLLUTION

It is the result of the application of pesticides and dumping of industrial wastes on to the land. The build-up of harmful substances in the soil hampers the growth of plants and adversely affects the animal's health. Soil pollution causes several health problems to the human beings, especially those in direct contact with soil, like



Soil pollution



farms, playgrounds, parks, schools and residences. Lead is a major soil pollutant which can cause developmental damage to the brain of children and damage the kidneys of adults.

Soil is one of our major natural resources. Soil formation is a very slow and time taking process. Numerous plants and animals depend on soil for their existence. So, we should save our soil from being polluted.

### Do You Know?

We can reduce the volume of waste upto 70% by recycling glass, paper, batteries and oil.



- littering** : making a place untidy by dropping waste paper, tins, bottles, etc.
- pollutant** : a substance that pollutes the environment
- pollution** : dirtying, spoiling or contaminating the environment by mixing harmful or unpleasant substances to it

### Let's Wrap Up



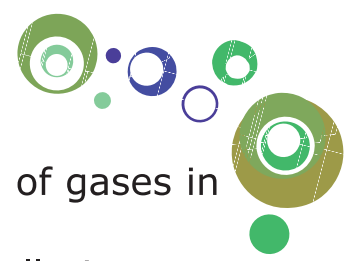
- ✦ Pollution means dirtying or spoiling and contamination of environment by harmful substances.
- ✦ The substances that pollute the environment are called pollutants.
- ✦ The person or the factor that contributes to pollution is called polluter.
- ✦ The four main types of pollution are : Air pollution, Water pollution, Noise pollution and Soil pollution.



#### A. Fill in the blanks with the words given in the box.

Lead      balance      Poisonous      pollutant      polluter

1. A ..... is the person or factor that pollutes.
2. A ..... is a harmful substance which causes pollution.
3. .... can lead to developmental damage to the brain.



4. It is very important to maintain the ..... of gases in the atmosphere.
5. .... gases from vehicles, causes pollution.

**B. Write short answers for the following questions.**

1. What is pollution?
2. Who is a polluter?
3. What are the different types of pollution?

**C. Answer the following questions.**

1. Suggest some measures to reduce air pollution.
2. What are the various reasons of noise pollution?
3. How does water pollution harm us?

**D. Multiple Choice Questions (MCQs)**

**Tick (✓) the correct option.**

1. Poisonous gas emitted from factories is .....  
a. carbon monoxide  b. oxygen   
c. fresh air  d. nitrogen
2. Chopping trees leads to .....  
a. less oxygen  b. less carbon dioxide   
c. less sulphur dioxide  d. less hydrogen
3. Which of these gases is harmful for the environment?  
a. Carbon monoxide  b. Sulphur dioxide   
c. Ammonia  d. Oxygen
4. Which river flows through Delhi?  
a. Ganga  b. Yamuna   
c. Brahmaputra  d. Narmada
5. Which type of pollution is the result of the application of pesticides and dumping of industrial wastes on the land?  
a. Air Pollution  b. Water Pollution   
c. Noise Pollution  d. Soil Pollution

**E. Write 'T' for true and 'F' for false statements.**

1. Asthma is a water-borne disease.
2. Pesticides are one of the pollutants for air.
3. Loud music leads to noise pollution.
4. Oxygen is a poisonous gas emitted from factories.
5. Compressed Natural Gas can be helpful in reducing air pollution.



## F. Match the columns.

### Column A

1. Loud music
2. Smoke from houses
3. Overuse of pesticides
4. Emission from vehicles
5. Industrial wastes

### Column B

- a. Water pollution
- b. Noise pollution
- c. Air pollution
- d. Air pollution
- e. Soil pollution

## G. Rearrange the letters in brackets to form the correct word.

1. This is a poisonous gas : ..... (AMIANOM)
2. A person or a factor that causes pollution: ..... (RETULPLO)
3. This is the result of noise pollution : ..... (SLOS GEARINH)
4. A substance that causes pollution : ..... (TNAOTPULL)
5. This is a water-borne disease : ..... (ECINDJUA)



Discuss

What should we do to check noise pollution?



HOTS

In Himachal Pradesh and Haryana, the river Yamuna is clean. But, in Delhi it becomes dirty and heavily polluted. Why?



### Activity Zone

Make charts on each type of pollution with causes, effects and measures to be taken.



### Life Skills

Go to a river or a lake in your city or town with your friends and find out the role of people in polluting it.



### Teacher's Corner

Encourage the children to plant a tree on their birthdays and look after it as friend.

# 11

## How to Conserve Our Environment

Our environment consist of two components: living things and non-livings things. Human beings depend on both of them for their survival. But often an imbalance appears in the environment due to their misuse or overuse. In order to maintain this balance, we must conserve our environment and contribute towards reducing this environmental loss or degradation.

Conservation is the prevention and replenishment of loss, waste, damage, destruction and degradation to the environment, including animals, plants, habitats and natural resources.



A glacier 50 years back and now

Today, we are facing various types of enviromental problems. This is mainly because we are consuming natural resources at a much faster pace than they can be replenished. Also, while doing this, they are polluting the environment and causing more destruction to nature. For example, the water level in the oceans are rising rapidly and many islands like the Andaman and Nicobar may be submerged completely within a few years time. Due to global warming glaciers have been reported melting rapidly in the Antarctica. The forest cover is fast depleting which may make landslides very common in the time to come. Let us analyse some of the environment problems and identify the measures to solve them.

## OVERPOPULATION

Today population is increasing at very fast pace. This increase in population put more pressure on water, soil, coal, natural gas and other such natural resources, leading to their degradation and depletion. There are only one solution. We should become conscious of this problem, check excessive consumption of the natural resources and care for the generations to come.



Overpopulation

## POLLUTION

Another major issue of concern is pollution that needs our serious attention. We have studied about it in the previous chapter. Let us revise what we have already learnt.

### Land Pollution

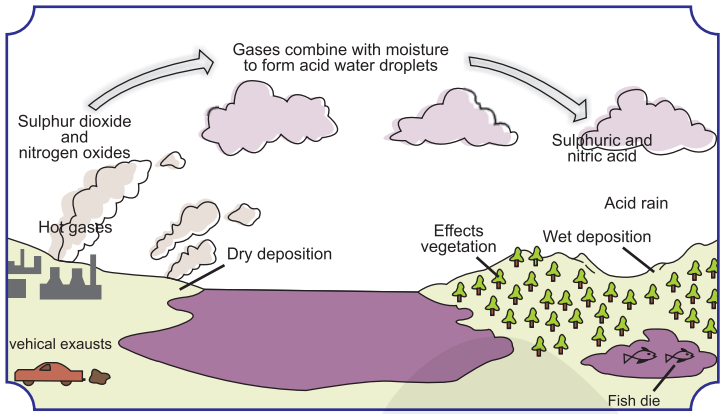
Soil gets polluted by several kinds of wastes which can broadly be divided into two groups—**biodegradable and non-biodegradable**. The biodegradable wastes can be broken down by bacteria and other micro-organism into substances not harmful to the environment. The biodegradable wastes come from plants or animals. Some examples of biodegradable wastes are paper, food items and animal wastes. But non-biodegradable substances are harmful to the environment as they cannot be broken down into non-harmful substances. Plastic and glass are non-biodegradable wastes. Plastics should not be thrown into drains or on the roads. Otherwise, the drains may get choked and the animals may choke and die. They should not be disposed off even into the seas, as they may kill sea creatures.

### Noise and Air Pollution

Noise pollution causes hearing problems to many people. Noise pollution, due to ringing alarms, honking, sirens, loud music and other noise producing activities can make a person deaf.



Factories and vehicles produce smoke which pollutes the air that we breathe and causes illness, brain damage, lungs problems and death. Sometimes these harmful emissions may cause **acid rain** because the rain drops dissolve in themselves excessive atmospheric sulphur dioxide and nitrogen oxide. Due to its acidic nature, such a rain is very harmful to the environment. We should develop some eco-friendly sources of energy to control pollution.



**Formation of acid rain**

### **PROTECTING PLANTS AND ANIMALS**

It is essential to protect the plants and animals. If trees are cut down without planting new ones, it will lead to deforestation which, in turn, will lead to a variety of problems like animals becoming homeless, frequent earthquakes, global warming, less rainfall, etc. We should protect our wildlife reserves and national parks to counter this situation. We should plant more and more trees, thereby promoting afforestation and increasing green cover.



**Deforestation**

The number of wild animals is decreasing fast because of scarcity of food, hunting or habitat loss, poaching, deforestation and other such factors. This is disturbing the ecological balance and natural proportion of various living beings in a particular region. This may lead to numerous problems for all of us. The government has taken several measures like building wildlife sanctuaries and national parks to protect endangered species of animals and plants and provide them their natural habitat. We should cooperate with the government to make such efforts a great success.

Many species of animals have become endangered, many are decreasing in number, while some have become almost extinct. The cheetah became extinct in India in the 1950's. Many other animals and birds are on the verge of being extinct, e.g., vulture and tiger. Many countries, including India, have passed law against poaching. However, we need much more to do, so that these animals are protected, safeguarded and preserved.

## Do You Know?

More than 50 species of plants and animals are becoming extinct as their habitats are being destroyed by human beings.

## WE SHOULD REMEMBER THE THREE R'S

To reduce the gravity of situation, we must remember and practise the three R's—Reduce, Reuse and Recycle.

### Reduce

- ◆ Save energy by switching off electrical equipments and appliances like the TV, fans, lights, AC, etc. when they are not in use.
- ◆ Save water by running the tap off while brushing your teeth, applying soap in the bathroom, while washing your cloths etc.
- ◆ Instead of individual motor vehicles, take a bus or a car pool to reach your school. That way you won't be adding to the air pollution.
- ◆ Make your own compost bin. Dispose off certain food and plant wastes into that bin. After a few days, the wastes will breakdown through decomposition. The compost thus formed will serve as a good manure for your plants and it will solve the problem of garbage accumulation.
- ◆ We should reduce consumerism.

### Reuse

- ◆ Donate old clothes and toys to the poor people.
- ◆ Try to find ways of reusing the things instead of throwing them away.
- ◆ Wrap gifts with newspaper. This will save trees.
- ◆ Write on both sides of paper.
- ◆ Take cloth sacks or bags to the market in place of paper and plastic bags. Some trees will be saved.

### Recycle

- ◆ Many used things like paper can be recycled. They are put through a process to create new materials out of old ones.
- ◆ Make sure that you separate items while disposing into those which can be recycled and those which cannot.





- ❖ Prefer to purchase recycled products. Some products are so written on them. A number of things like greeting cards, papers, towels, colours made of used flowers, etc. are made by the recycling process.

### Do You Know?

If all the other people on the Earth used as much 'stuff' as people do in the US, there would need to be three to five times more space just to hold and sustain everybody.



afforestation	:	planting of trees
conservation	:	the systematic management of environment and natural resources
degradation	:	changing to a lower state or lowering down of quality
deforestation	:	cutting down of trees in large in number
overpopulation	:	more people than the natural resources can support or sustain
poaching	:	illegal killing of animals

### Let's Wrap Up

- ✦ Conservation is the taking care of or protecting the environment.
- ✦ Overpopulation must be checked as it causes overuse of resources.
- ✦ Endangered species need to be protected and preserved.
- ✦ All kinds of pollution must be reduced. People must cooperate with the government efforts and measures.
- ✦ Animals and plants should be saved and protected in order to maintain the natural ecological balance and proportion.
- ✦ We should remember 3 R's—Reduce, Reuse and Recycle.



### Exercises

#### A. Fill in the blanks with the words given in the box.

protection    glaciers    donated    acid rain    decompose

1. Fruits and vegetables ..... quickly.
2. Wildlife sanctuaries provide ..... to animals.
3. Rain that dissolves excessive atmospheric sulphur dioxide and nitrogen oxide is called .....

4. Due to global warming, ..... have been reported melting rapidly in the Antarctica .
5. Old clothes and toys should be ..... to the poor.

**B. Write short answers for the following questions.**

1. What do you mean by decomposition ?
2. What is acid rain ?
3. List the problems that need to be tackled for conservation.

**C. Answer the following questions.**

1. How is imbalance created in nature?
2. How can we help in conservation?
3. Discuss the three R's.

**D. Multiple Choice Questions (MCQs)**

**Tick (✓) the correct option.**

1. Which of the following is not an eco-friendly source of energy?
 

a. Wind	<input type="checkbox"/>	b. Sun rays	<input type="checkbox"/>
c. Petrol	<input type="checkbox"/>	d. CNG	<input type="checkbox"/>
2. Random cutting of trees is called .....
 

a. afforestation	<input type="checkbox"/>	b. deforestation	<input type="checkbox"/>
c. poaching	<input type="checkbox"/>	d. conservation	<input type="checkbox"/>
3. The water level in the oceans is fast .....
 

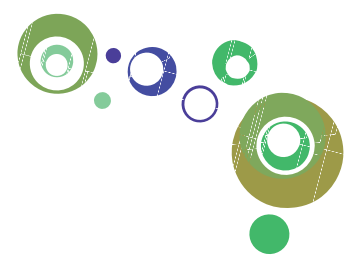
a. rising	<input type="checkbox"/>	b. falling	<input type="checkbox"/>
c. moving	<input type="checkbox"/>	d. decreasing	<input type="checkbox"/>
4. Our environment is made up of .....
 

a. living things	<input type="checkbox"/>	b. non-living things	<input type="checkbox"/>
c. both (a) and (b)	<input type="checkbox"/>	d. none of these	<input type="checkbox"/>
5. Factories and vehicles produce smoke which pollutes the
 

a. water	<input type="checkbox"/>	b. land	<input type="checkbox"/>
c. air	<input type="checkbox"/>	d. sound	<input type="checkbox"/>

**E. Write 'T' for true and 'F' for false statements.**

1. Increase in population creates balance of resources.
2. We should prefer to purchase recycled products.
3. Misuse of resources causes imbalance in nature.
4. We need to decrease the use of fossil fuels.
5. Noise is a natural pollutant.



**F. Match the columns.**

**Column A**

- 1. Poaching
- 2. Wind energy
- 3. Endangered
- 4. Plastic
- 5. Noise pollution

**Column B**

- a. Eco-friendly source of energy
- b. Can reduce hearing ability
- c. Illegal hunting
- d. Animals getting extinct
- e. Non-biodegradable substance

**G. Rearrange the letters in brackets to form the correct word.**

- 1. Breaking down of food wastes by microbes into simpler substances :  
..... (NOITISOPMOCED)
- 2. The protection of environment and resources :  
..... (AONITEVRSCNO)
- 3. Excessive increase in population :  
..... (NOITALURPOPEOV)
- 4. Completely died out : ..... (TICENTX)
- 5. To use again : ..... (SUEER)



**Discuss**

Why should we use recycled paper?



**HOTS**

Why do you think that open dumping should be done far away from towns and cities?



**Activity Zone**

Collect the photographs of at least five extinct animals and paste them in your scrapbook.



**Life Skills**

Ask your parents how they dispose the garbage. Tell them to make compost at home.



**Teacher's Corner**

Discuss in the classroom how big population of India can be an asset for the country.

# Communication and Modern Techniques

Man, being a social animal, has always felt the need to express his feelings to others. Early man used signs to express himself. Gradually, he made symbols on the walls of the caves, stones, leaves etc. Later clay tablets were also used.

The earliest symbols that man used was in the form of pictures. Cave paintings in Bhembetka and Madhya Pradesh still exist. Later, symbols were drawn to represent various sounds. This was the beginning of alphabet.

Nothing could be recorded for future generations in the pre-historic times. However, about 5000 years ago, man was able to put down his thoughts, experiences, ideas etc., on paper.

It is believed that paper was made from the pulp of the wood for the first time in China in 105 AD. Everything was hand written till 1443. The art of writing and learning became more civilised with the invention of printing press by Johannes Gutenberg. Books began to be printed.

Many books could be produced in less time and at a much lesser cost. Today, printing technology has developed significantly. Million of books are published every year.

In the early days, messages over long distances were sent through pigeons or horses. But messages and letters were delayed or even lost. Now, new and fast means of communication have been developed.

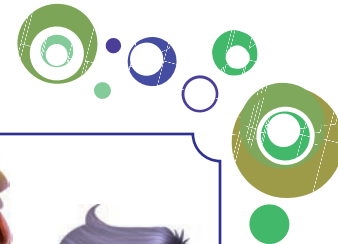


## COMMUNICATION WITH INDIVIDUALS

We communicate with friends and relatives regularly. There are different methods of communication that can be used. We can write a letter and send it through the post office or courier.

Other than letters, aerogrammes and parcels are sent by the postal system. Aerogrammes, inland





letters, money orders, postcards and stamps are also available at the post office. The facility of speed post and telegram is also available.

Quick and short messages were sent through a telegram. The message is sent in the coded language of dots and dashes. These codes are called Morse Code. It was invented by Samuel Morse. After the invention of teleprinter, the services of telegraph became three times faster than an ordinary telegraph machine.

The telephone invented by Alexander Graham Bell in 1876, is the most convenient and fastest means of communication.

In India, one can talk to a person living in another city through telephone using the STD (Subscriber Trunk Dialing) facility.

A person can even communicate with a person living abroad using the ISD (International Subscriber Dialing).

With the improvement in technology, a person can be contacted any time on mobile. We can also send and receive text messages and the pictures through mobiles. The added advantage is that the Internet can also be accessed through mobile phones known as iPhones.



Alexander Graham Bell

### Do You Know?

Early telephones had a separate mouthpiece and earpiece, known as Butterstamps.

The FAX machine can send an exact copy of writing, printed material, picture etc., over the telephone cables. It is used to send information across towns, cities, countries etc. It is also called facsimile Machine.

The most modern and popular means of communication through computer is the e-mail. It delivers the messages instantly. It is very quick to send an e-mail and it is available for 24 hours a day. It is even cheaper than making a telephone call.



Fax Machine

## COMMUNICATION WITH MANY PEOPLE

Sometimes, we have to communicate with large number of people at the same time across the whole country.

We do this through books, magazines, newspapers, radio, cinema, television, internet etc. These are the means of mass communication.

### Newspaper, Books and Magazines

Newspapers, books and magazines play a significant role in creating awareness among the people. These also provide healthy entertainment. They provide latest information to their readers about development, progress, people and events all over the world. Many newspapers and magazines are published in regional languages. **Pamphlets**, often distributed with the newspapers, contain information about events, organisations or schemes.

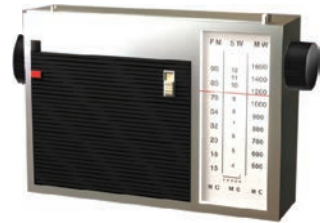
#### Do You Know?

The word 'NEWS' itself refers to the information gathered from all over the world. N stands for the North, E for the East, W for the West and S stands for the South, that is, from every corner of the world.

### Radio

'Radio' means communication with the radio waves. The invention of radio by Marconi brought a sudden change in mass communication. The communication has become very fast and easy. Cables or wires are not required to send messages through radio.

It provides us information as well as entertainment. The radio is the cheapest and the most accessible mean of mass communication. It covers maximum parts of the country. For poor and illiterate people, it is the most useful as they can learn and collect useful information through the radio very easily.



#### Do You Know?

Organised radio broadcasting in India began in 1927. Today there are more than 180 broadcasting centers of All India Radio.

### Television

'Television' means the transmission of images of a moving picture with the sound from a different place.



Television is the most popular mean of mass communication. It has all the advantages of radio. In addition to this, it shows pictures also.

With the invention of television by John Logie Baird in 1926, the cinema came into our homes. Today, we can watch various programmes recorded or even the live telecast while sitting at our homes. Television is the most useful means of communication as we can see many educational and entertaining programmes.



Television

### Cinema

The cinema is a popular means of communication. It is a popular source of entertainment too. Cinema spreads education and knowledge through short films. These short films are called **documentaries**. There is an exchange of films among different countries of the world.



Movie

Thus, people come to know about each other's culture, lifestyles, values etc. The cinema has brought the people of the world closer to each other.

### Internet

Internet is the most recent means of communication. It is a network of many computer networks. We can get information from any of the thousands computers in the network via Internet. E-shopping, e-banking and downloads are possible through it. E-mails can be sent through the Internet.



Using Internet

It is a source of information on almost all topics. There are millions of Website on the Internet. Students are now less dependent on books.

A website address looks like this :

[www.google.co.in](http://www.google.co.in)

### ARTIFICIAL SATELLITES

A satellite is a body that moves around a planet. Artificial satellites are launched into space by a rocket. They remain in space for a long period.

There are different satellites launched for different purposes :

- ◆ **Weather Satellites** provide us the day to day information about the weather. They help us in weather forecasting.
- ◆ **Geographical Satellites** provide us the information about the various resources of the Earth.
- ◆ **Communication Satellites** are mainly used for telephone calls and television broadcasts. They can relay thousand of telephone calls and several television programmes simultaneously at the same time all over the world.



Satellite

## ADVERTISEMENT

An advertisement is an interesting technique developed to make contact with a large group of people at same time. Companies use it to introduce and to popularise their products. Advertisements persuade the people to buy the products. The message that is conveyed through newspapers and magazines reach only to the literates. Radio and TV have a more powerful impact on the majority of people. The government spreads social awareness messages through advertisements.

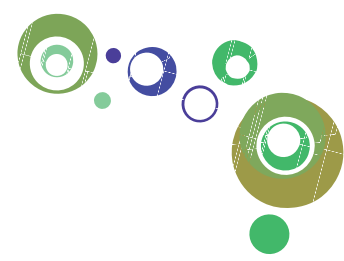
All means of communication are very useful to us. They have brought the people of the world very close to one another.



mass media	:	communication with the masses
pamphlet	:	a very thin book with a paper cover, containing information about a particular subject
satellite	:	a body that moves around a planet

## Let's Wrap Up

- ✦ In the early days, messages were sent through pigeons and horses.
- ✦ The post office, telephone, radio, television etc., are popular means of communication.
- ✦ Telephone is the fastest means of individual communication.
- ✦ Mobile phones, e-mail, cordless phones etc., are the modern means of communication.
- ✦ Radio, television, newspapers, magazines, satellites etc., are the means of mass communication.




# Exercises

## A. Fill in the blanks with the words given in the box.

E-mail    Johannes Gutenberg    ISD    symbols    pictures

- The earliest symbols that the man used was in the form of .....
- Later ..... were drawn to represent various sounds.
- ..... is a system of sending messages through computers.
- Printing press was invented by .....
- A person can communicate with a person living abroad using the .....

## B. Write short answers for the following questions.

- How did early men communicate with others?
- Which bird was used to send messages?
- What does STD stand for?

## C. Answer the following questions.

- Why is television more popular than radio?
- How are the satellites useful to us?
- How do advertisements influence our life?

## D. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

- We can send a letter through the .....
 

a. telephone	<input type="checkbox"/>	b. newspaper	<input type="checkbox"/>
c. post office	<input type="checkbox"/>	d. satellite	<input type="checkbox"/>
- Which of the following is not a means of mass communication?
 

a. Letters	<input type="checkbox"/>	b. Cinema	<input type="checkbox"/>
c. Advertisements	<input type="checkbox"/>	d. Newspaper	<input type="checkbox"/>
- Quick and short messages were sent through a .....
 

a. post office	<input type="checkbox"/>	b. courier	<input type="checkbox"/>
c. speed post	<input type="checkbox"/>	d. telegram	<input type="checkbox"/>
- Paper was first believed to be used in .....
 

a. India	<input type="checkbox"/>	b. China	<input type="checkbox"/>
c. Germany	<input type="checkbox"/>	d. USA	<input type="checkbox"/>

5. Radio was invented by .....

a. Marconi



b. Samuel Morse



c. J.L. Baird



d. Waterman



**E. Write 'T' for true and 'F' for false statements.**

1. Pamphlets are often distributed with telephones.



2. Televisions are used only for entertainment.



3. A FAX machine can send an exact copy of the writing.



4. All newspapers and magazines are published in English and Hindi.



5. A person can be contacted any time on Internet.



**F. Match the columns.**

**Column A**

1. ISD

2. Internet

3. Aerogrammes

4. NEWS

5. Satellites

**Column B**

a. Bodies that move round a planet

b. Letters sent to other country

c. North, East, West and South

d. International calls

e. Network of many computers



**Discuss**

Why is letter writing less practised these days?



**HOTS**

Why is media called the fourth pillar of the democracy after executive, legislative and judiciary?



**Activity Zone**

Make a list of modern means of communication indicating its various advantages.



**Life Skills**

Suppose you are in the race of being class monitor. How will you advertise yourself so that you have an edge over your competitors?



**Teacher's Corner**

Form two groups of students of the class and have a debate on "Carrying mobile in the school should be banned". One group will speak 'for' and other 'against' the topic.

Nature is both a creator as well as destroyer. It sustains life on the Earth. But it is also the biggest destroyer. Natural disasters are caused by natural forces. These disasters cause immense damage to life and property. There are several types of natural disasters. In this chapter, we will discuss some of them.

## EARTHQUAKE

Earthquake occurs due to the violent and sudden shaking of the Earth. It is caused by movements deep inside the Earth. This may result in minor or sometimes major disasters like loss of human and animals lives, collapsing of buildings, bridges and roads, uprooting or breaking of trees etc.

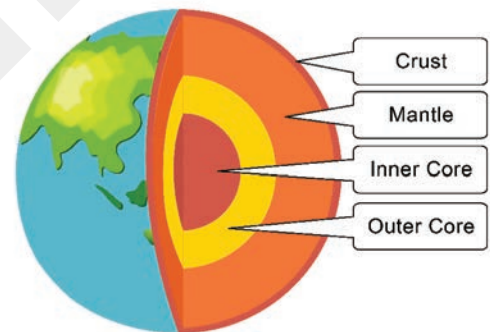
Most earthquakes take place due to internal pressures within the Earth. The Earth's surface has a number interlocking plates of rock which float on the semi-liquid layer called the **mantle**. When two floating plates grind against each other, the vibrations or tremors pass to the Earth's surface called the **crust**. **Core** is the central or innermost portion of the Earth below the mantle, probably consisting of iron and nickel. It is divided into a liquid outer core, which begins at a depth of 1,800 miles (2,898 kilometers), and a solid **inner core**, which begins at a depth of 3,095 miles (4,983 kilometers).

The shaking of the Earth is sudden and devastating. The effect or tremor is greatest at the epicentre, the point on the Earth's surface directly above the point of origin, called **focus**. The effects spread around the epicentre in a circular motion and become weak as they move away like ripples in a pond.


It is very difficult to predict the timing of an earthquake. In a major earthquake, the buildings collapse, electric poles are uprooted, pipe lines burst and fire may break out. So, we should move quickly in open when we



Earthquake



Earth Core



sense tremor and stay away from buildings, vehicles, trees and electric poles. If trapped indoors, stay away from windows and heavy objects that may collapse or shatter. We can crawl under any strong table or bed to protect ourselves from falling rubble. Never use electrical appliances and lift. Remain calm and keep a first-aid kit handy. The geographers have tried to study the pattern and have marked out the earthquake-prone areas. Japan and Philippines are the most earthquake-prone countries in the world.

People should take all necessary precautions, such as building light houses made of wood, to combat such disasters. The Seismograph is an instrument that measures and records details such as the intensity and duration of the earthquake on the Richter Scale.

### Do You Know?

The scientific study of the earthquake is called Seismology.

## VOLCANIC ERUPTION

The interior of the Earth contains molten rock known as **magma**. In some places magma finds a **vent** through the crust of the Earth and escapes out to the surface. This is called a **volcanic eruption**. The molten magma which erupts the Earth is called **lava**. After the volcanic eruption has cooled, it forms volcano mountain and a bowl-shaped hollow is formed at the top called a **crater**.



Volcanic Eruption

There are three types of volcanoes. **Extinct** or **dead volcanoes** have not erupted for thousands of years and probably never will, for example : Mt. Kilimanjaro in Africa. **Dormant** or **sleeping volcanoes** have not erupted for many years but have chances of erupting again. When a vent becomes blocked by a hardened lava plug, it becomes a dormant volcano, for example : Mt Fujiyama in Japan.

The last and the most dangerous are the **active volcanoes** which erupt often and lead to destruction, for example : Mt. Etna in Italy.

## FLOOD

A flood occurs when the water in a river or stream exceeds its capacity to carry water. In India, it is common during the monsoon when rivers overflow and almost submerge the surrounding areas.



Floods are also caused by :

- ◆ the collapse of a dam built across a rivers,
- ◆ blocking of river channels by land slides, cyclones and tsunami in coastal areas,
- ◆ typhoons with strong tides or storms in the sea and
- ◆ the sudden melting of snow on mountains during the Summer season.



Flood

Flood causes huge damage to life, property and crops. Huts get washed away, as do livestock and human beings. There is water logging for many days. Diseases such as cholera, malaria and dengue generally spread in areas hit by floods. Clean drinking water becomes a scarcity as water gets contaminated. There also occurs a shortage of food. In India, some areas get flooded each year due to their nearness to the big rivers. Bihar, West Bengal and Assam experience floods every year because the Ganga and the Brahmaputra overflow.

Before building a house, one needs to check the history of flooding in the area. Garbage should not be thrown into drains and rivers. If the bank of rivers have broken, they should be repaired immediately. All electrical equipments should be disconnected if there is a danger of flood.

During floods, move to higher places with your important documents, a battery operated radio, torch, match box, candles, first-aid kit, emergency food, water and cash money.


Trees are very helpful in controlling floods. The roots absorb the water and prevent the flood from spreading fast. Special dams can also be built to control the speed of water.

### Do You Know?

Mumbai was flooded in August 2005 because there were not enough water outlets to clear the water away.

## TSUNAMI

A tsunami is a devastating wave of gigantic size. It is also called a tidal wave. A tsunami can be caused by underwater volcanic eruption, or an



undersea earthquake. A tsunami cannot be seen clearly in deep waters but it moves long distances without losing its energy. When it approaches land, it becomes a wall of water towering 10 to 15 metres above the surface, charging in at a furious speed. The effects of a tsunami are devastating. If a tsunami warning is sounded, one should immediately move to higher ground with emergency kit.



Tsunami

### Do You Know?

The tsunami that struck the India, Indonesia, Sri Lanka and Thailand on 26 December 2004 was one of the biggest natural disasters in history. It was the second largest earthquake, with a magnitude between 9.1 and 9.3 that lasted around 10 minutes.

## DROUGHT

Droughts are caused by shortage of rains. India is an agricultural country. Most of the farmers are dependent on the monsoon. When rainfall is delayed or scarce, it leads to drought, which causes to scarcity of food leading to a famine. Droughts lead to starvation and death of a large number of people. India has some drought-prone regions. Some parts of Maharashtra, Karnataka, Andhra Pradesh, Gujarat, Odisha and Rajasthan are particularly prone to drought.



Droughts

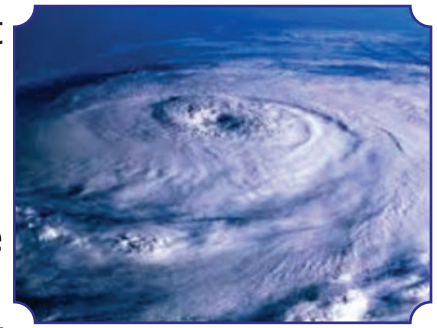
We can prevent droughts by growing more trees. Reservoirs and water tanks should be built to store water. Farmers should be educated to avoid overgrazing by the cattle. They should be encouraged to grow drought-resistant crops like sorghum, millet and maize. New irrigation methods are very effective in saving the water. Rainwater harvesting, which involves the collection of rainwater falling on rooftops and on the ground for future use, can be very useful.

## CYCLONE

A cyclone is a rotating mass of air with minimum pressure in its centre. It is caused by winds which travel at great speed, flattening and destroying anything in their path. The coastal areas are more prone to cyclones than



others. Cyclones rip off roof from houses, uproot trees and electric poles and causes heavy damage. A cyclone is always accompanied by torrential rains. Generally, the wind speed is over 100 km per hour.



Cyclone

People living in cyclone-prone areas should make sure that the roofs of their houses are in good condition. Tree branches should be trimmed near the house. An emergency kit with portable radio, torch, some food and water, a first-aid kit and essential medicines should be ready.

As soon as a cyclone starts, turn off the gas and switch off electrical appliances. Close the doors and windows securely and leave immediately if it is required to evacuate.

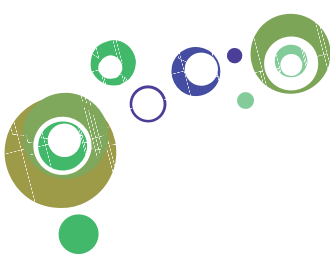


tremor	:	a shaking movement
epicentre	:	the point on the Earth's surface that is above the origin of an earthquake
predict	:	to make known something in advance
vent	:	opening in a volcano
crater	:	a bowl-shaped hollow formed at the top of a volcano
lava	:	hot liquid flowing out of vents
evacuate	:	to move people to a safer place

### Let's Wrap Up



- ✦ Natural disasters are caused by natural forces.
- ✦ Earthquake, volcanic eruption, flood, tsunami, drought and cyclone are some natural disasters.
- ✦ Floods occur when the water in the river or stream exceeds its capacity to carry water.
- ✦ Droughts are caused by shortage of rains.
- ✦ Earthquakes are caused by sudden movements under the surface of the Earth.
- ✦ Cyclones are rotating mass of air with minimum pressure at centre.
- ✦ Major volcanoes are formed around the edges of the Pacific Ocean.
- ✦ We should take precautions against natural disasters.




# Exercises

## A. Fill in the blanks with the words given in the box.

epicentre    Italy    Droughts    earthquake    flooding

- In India, ..... is common during monsoons.
- The effect of an earthquake is greatest at the .....
- The scientific study of ..... is called seismology .
- Mt Etna is in .....
- ..... are caused by shortage of rain.

## B. Write short answers for the following questions.

- Which instrument is used to measure the intensity of an earthquake?
- On what most of the Indian farmers depend ?
- What is lava ?

## C. Answer the following questions.

- Write the types of volcanoes with one example of each .
- What causes floods?
- What safety measures should be taken when an earthquake strikes?

## D. Multiple Choice Questions (MCQs)

Tick (✓) the correct options.

- Which of the following is not a flood prone area?
 

a. Assam	<input type="checkbox"/>	b. Delhi	<input type="checkbox"/>
c. Bihar	<input type="checkbox"/>	d. West Bengal	<input type="checkbox"/>
- Which of the following is not a drought-resistant crop?
 

a. Maize	<input type="checkbox"/>	b. Paddy	<input type="checkbox"/>
c. Millet	<input type="checkbox"/>	d. Sorghum	<input type="checkbox"/>
- Which of the following is a dead volcano in Africa?
 

a. Mt. Fujiyama	<input type="checkbox"/>	b. Mt. Etna	<input type="checkbox"/>
c. Mt. Visuvius	<input type="checkbox"/>	d. Mt. Kilimanjaro	<input type="checkbox"/>
- During an earthquake, the maximum damage is caused near the .....
 

a. epicentre	<input type="checkbox"/>	b. plains	<input type="checkbox"/>
c. sea coast	<input type="checkbox"/>	d. mountains	<input type="checkbox"/>
- Cyclones are always accompanied by .....
 

a. forest fires	<input type="checkbox"/>	b. earthquakes	<input type="checkbox"/>
c. torrential rains	<input type="checkbox"/>	d. volcanic eruptions	<input type="checkbox"/>



**E. Write 'T' for true and 'F' for false statements.**

1. A cyclone is always accompanied by torrential rains.
2. Garbage should be thrown into drains and rivers.
3. During a flood, of there is a shortage of water.
4. A volcano is easily predictable.
5. Mt. Fujiyama is an example of active volcano.

**F. Match the columns.**

**Column A**

1. Cyclone
2. Extinct volcano
3. Active volcano
4. Rainwater harvesting
5. Crater

**Column B**

- a. Mt. Kilimanjaro
- b. Rotating mass of air
- c. A bowl-shaped hollow
- d. Mt. Etna
- e. Precaution against drought



**Discuss**

Why are the coastal areas more prone to cyclones?



**HOTS**

Why do we have to face the wrath of nature every now and then even if we have made remarkable progress in every aspect of life.



**Activity Zone**

Make of list of the essential things that you would keep in your bag in case you have to leave your house because of a flood.



**Life Skills**

Ask your class teacher to conduct a mock drill on earthquake. Make the list of steps to follow.



**Teacher's Corner**

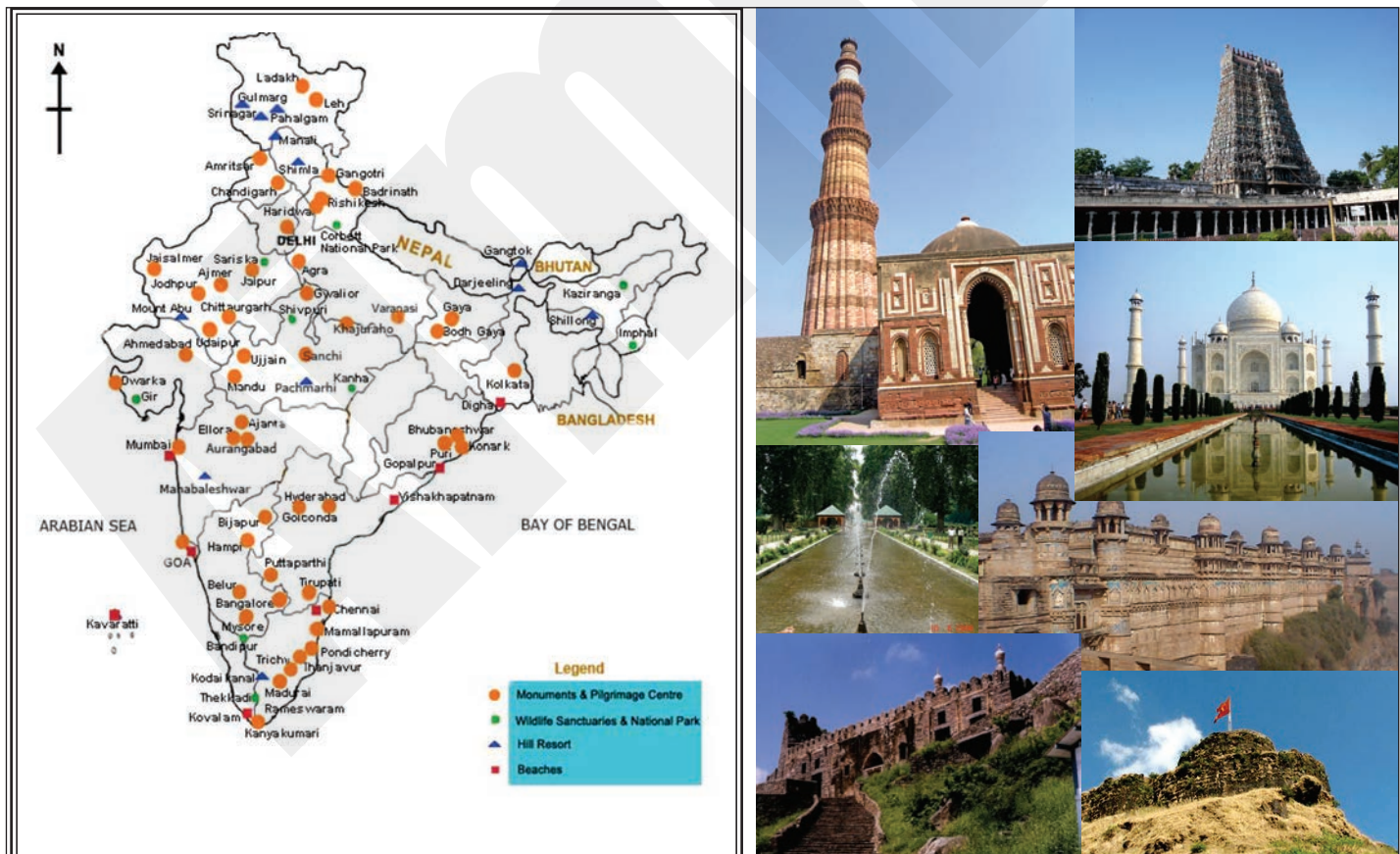
Discuss in the class how we can minimise the suffering of people, when calamities occur.

Heritage provides identity to a group of people, a community, a country or even a person. In this chapter, we will study our national heritage, particularly **material heritage** of our country.

Material heritage consists of building, artefacts, paintings, coins etc. that have been left behind by our ancestors.

There are many great heritage buildings, forts, tombs, baolis (step wells), mosques, temples, churches, etc. in India. Each of them has specific stories contained in itself—who built them, when and why; the purpose for which they were built, the different materials used, etc. There are a number of things hidden in this treasure. Do you want to go on this treasure hunt?

The map given here provides some important **monuments** of India.



Prominent monuments of India



## ARCHITECTURE

Each part of the vast country like India has its own architecture. Kashmir is famous for its gardens, e.g., the Nishat Bagh and the Shalimar Bagh. The Shalimar Bagh in Srinagar, was built by Mughal Emperor Jahangir for his wife Nur Jahan in 1616. It has four terraces, one rising above the other. The fourth one is the best terrace which was once reserved for the royal ladies. The Nishat Bagh is also located in Srinagar. It was built by Empress Nur Jahan's brother Asaf Khan in 1633-34. It consists of 12 terraces which represent 12 zodiac signs.



The Shalimar Bagh in Srinagar



The Red Fort

There are many old monuments in our national capital city, Delhi, e.g., the Qutub Minar, Purana Qila, Red Fort, Jama Masjid etc. In 1639, Shah Jahan had built the Red Fort or Lal Qila, which is surrounded by now defunct moats. These moats were once fed by the river Yamuna, on the banks of which the fort was built. The artwork in the fort is a fusion of Persian, European and Indian art forms. On

15th August every year, the Prime Minister hoists the national flag and addresses the nation from the ramparts of the Red Fort.

The Qutub Minar is one of the tallest brick and stone minaret in the world. The first sultan of Delhi Qutubuddin Aibak had laid its foundation in 1192. It was completed by Iltutmish and later repaired by Firoze Shah Tughlaq in 1370. The Iron Pillar located in the Qutub complex has not yet rusted despite its full exposure to air and rain. This is considered a metallurgical marvel.



The Qutub Minar

One of the seven new wonders of the world is the Taj Mahal in Agra. It was built by Shah Jahan in the memory of his wife Mumtaz Mahal. It is made



The Taj Mahal

up of white marble and popular with the tourists from all over the world. It took 22 years to build it. It was finally completed in 1648. It is considered the finest piece of Mughal architecture, combining Turkish, Indian, Persian, and Islamic styles of architecture. The tomb is surrounded by four minarets, each more than 40 metres tall. The minarets are slightly tilted backwards so that

they would not fall on the tomb but backwards onto the ground in case of an earthquake.

### Do You Know?

Shah Jahan used to see the Taj Mahal with the help of a mirror when he was imprisoned in a room of the Red Fort of Agra by his son Aurangzeb.

Havelis and forts in Rajasthan and Gujarat also display remarkable art and craftsmanship. The Mandu Fort and the Gwalior Fort in Madhya Pradesh, and the Shivneri Fort in Maharashtra are famous for their architecture. The Mandu Fort comprises a large number of palaces like the Jahaz and Hindola Mahals, ornamental canals, baths, mosques and other buildings. It is a wonderful example of Afghan architecture.



The Mandu Fort



The Shivneri Fort

The Shivneri Fort, situated near Junnar in Maharashtra' is the birthplace of Shivaji who was born in 1627. The fort has seven huge gates which one has to cross to go inside. There is a small water pond, called the Badami Talav, right in the middle of the fort. There is a statue of Jijabai with her son Shivaji near the pond. A temple located near the Shivneri Fort is dedicated to the goddess Shivani.



In the 15th century Raja Man Singh Tomar had built the Gwalior Fort. It was reputed as one of the strongest forts of India. It stands on an isolated rock and contains several historic buildings, including some temples, a white gurudwara and a mosque.



The Gwalior Fort

**Do You Know?**

The postal services of India issued a stamp of the Gwalior Fort on 3rd August 1984.



The Meenakshi Temple

Indian temples are famous for their beautiful carvings depicting gods and goddesses, animals, people, stories and situations. The ancient South Indian temples showcase the country's rich cultural heritage. They have intricate carvings and sculptures. The Meenakshi Temple of Madurai in Tamil Nadu is one of the best examples of Dravidian architecture. Dedicated to Lord Shiva and

Goddess Parvati, the temple is a marvellous piece of architecture. The temple has stunning architecture and houses 12 magnificent **gopurams** or towers which are elaborately sculpted and painted.

The Sun Temple of Konark in Odisha is another marvellous piece of architecture. The temple is in the form of a giant chariot of Surya or the Sun god, being pulled by seven mighty horses. It is heavily decorated with stone carving. There are various floral and geometric patterns all around the temple.



The Sun Temple

**Do You Know?**

The Sun Temple is a World Heritage site.

The great Emperor Ashoka had built some Buddhist monuments like the stupas in Sanchi and Sarnath using bricks. The Sanchi stupa has four



The Sanchi Stupa

gateways called **toranas** which have carvings of Buddha in different stages of his life and his teachings. The Buddha is represented through different symbols like the lotus representing his birth, the banyan tree showing his enlightenment, the wheel showing his teachings, and the footprints or throne showing his presence.

## PAINTINGS

There are mainly two types of paintings in India—**wall paintings** and **miniature paintings**.

The Ajanta Caves in Maharashtra paintings are the best examples of wall paintings. There are total 29 caves which contain the most amazing **frescoes** in the world. The walls of the caves are full of colourful paintings depicting the life and teachings of the Buddha.

The best examples of miniature paintings are the Rajasthani and Pahari paintings, which were greatly influenced by Mughal paintings. These paintings give us a fair idea of the lives of the people of the time.

Besides these, the Bhimbetka cave paintings, some of which are as old as 30,000 years, depict the life of the people living in those times. Natural dyes and colours were used in these paintings as well as in Ajanta cave paintings, so that they became a part of the surface and would not peel off or decay and faint easily.



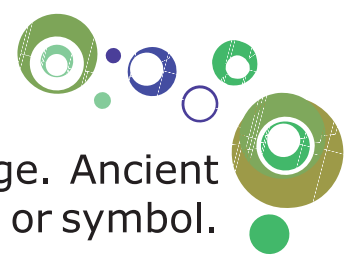
A miniature Rajasthani Painting



A coin from the Gupta period

## ARTEFACTS

Terracotta or brickwork is seen at many places in West Bengal and Odisha. Terracotta art was one of the earliest forms of art. This form was practised in West Bengal from ancient to medieval periods. Terracotta was used to make figurines, sculptures and plaques, all of which remind us of the Indus Valley Civilization.



Coins are also an interesting and integral part of our heritage. Ancient coins were made of gold or silver and carved with kings’s name or symbol. Some of the earliest coins belong to the Gupta period.

Our heritage must be preserved. We should feel proud of it and preserve it for the future generations.



- heritage : something that is passed down through generations
- monuments : a structure as a memorial or having historical significance
- preservation : act of keeping safe by taking care of

### Let's Wrap Up

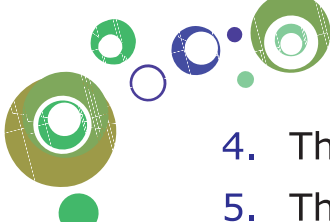
- ✦ Material heritage consists of building, paintings, artefacts, coins etc. that have been left by our ancestors.
- ✦ India is a vast country and each part has its own style of architecture.
- ✦ The Qutub Minar is one of the tallest brick and stone minaret in the world.
- ✦ The Taj Mahal (in Agra) is one of the seven new wonders of the world.
- ✦ The Mandu Fort is a marvellous example of Afghan architecture.
- ✦ The Meenakshi Temple in Madurai (Tamil Nadu) is one of the best examples of Dravidian architecture.
- ✦ There are mainly two types of paintings in India—Wall paintings and Miniature paintings.
- ✦ West Bengal and Odisha are famous for their terracotta or brick work.
- ✦ We must feel proud of our heritage and do our best to preserve it for our future generations.



#### A. Fill in the blanks with the words given in the box.

Mumtaz Mahal metallurgical Yamuna Shah Jahan terracotta

1. Lal Qila is built on the river .....
2. West Bengal and Odisha were famous for ..... work.
3. The Taj Mahal was built in the memory of .....

- 
- The Iron Pillar is a ..... marvel.
  - The Red Fort was built by the Mughal emperor .....

**B. Write short answers for the following questions.**

- Where is Purana Qila located?
- Name two famous gardens of Srinagar.
- Where is the Sun Temple located?

**C. Answer the following questions.**

- Who built the Taj Mahal and why?
- Describe the Meenakshi Temple in Madurai.
- What can we do to preserve our heritage?

**D. Multiple Choice Questions (MCQs)**

**Tick (✓) the correct option.**

- The Salimar Bagh of Srinagar was built by .....
  - Shah Jahan
  - Jahangir
  - Nur Jahan
  - Akbar
- Ajanta Caves are situated in .....
  - Odisha
  - Maharashtra
  - Madhya Pradesh
  - Uttar Pradesh
- Material heritage does not include .....
  - mountains
  - buildings
  - paintings
  - forts
- Who built the Nishat Bagh of Srinagar?
  - Jahangir
  - Shah Jahan
  - Asaf Khan
  - Aurangzeb
- The Shivneri Fort is the birth place of .....
  - Jahangir
  - Shivaji
  - Shah Jahan
  - Rana Pratap

**E. Write 'T' for true and 'F' for false statements.**

- Akbar's tomb is located in Delhi.
- Bhimbetka caves are famous for their paintings.

3. The ruins of Indus Valley Civilization show the application of brickwork.
4. The Red Fort of Delhi was built by Jahangir.
5. Baolis were houses for the royal families.



## F. Match the columns.

### Column A

1. Qutubuddin Aibak
2. Wall paintings
3. Gold coins
4. Shah Jahan
5. Ashoka

### Column B

- a. Gupta period
- b. Taj Mahal
- c. Qutub Minar
- d. Sanchi Stupa
- e. Frescoes



### Discuss

What does our past mean to each of us?



### HOTS

Why do you think some architectural marvels of today would be regarded as a rich part of the Indian heritage about 100 years from now?



### Activity Zone

Plan to visit to a heritage site near to your city. Find out its significance, who built it and why, and the material used in its construction. Write down in your book. Show to your friends and teachers.



### Life Skills

Rahul has a habit of writing his name every where. How will you convince him not to do so at heritage sites?



### Teacher's Corner

Teach the students about the things that they should not do when they visit a heritage site, so that its beauty is maintained.

# Advent of the British

Since time immemorial, India was famous all over the world for its wealth and comforts. The trade and commercial relations between India and the western world always existed, but mainly through the Arab world merchants. In the 15th century, the Arab world started becoming a stumbling block in the path of the western world to carry on trade with India. Therefore, the western entrepreneurs thought of discovering a sea route to India.

Vasco da Gama, a Portuguese explorer, discovered a new sea route to India via the Cape of Good Hope in 1498. He landed at Calicut (now Kozhikode) in Kerala. Thus, the Portuguese were the first Europeans who came and started trading with India.

The Portuguese built trade centres at Calicut, Cochin (now Kochi) and Cannanore (now Kannur). Spices were the most essential item of trade,

because they helped in the preservation of meat in winter and made the food tastier. They also traded in silk and gold which were in great demand throughout Europe.

The Dutch followed the Portuguese, who also established their trade centres. Thereafter, the British entered the arena. Soon the Dutch gave up their centres as they were more interested in the East Indies.



Vasco da Gama



Queen Elizabeth I



Tales of India's booming trade reached England through the first British travellers. British merchants too got tempted. They formed the British East India Company in 1600 with permission from the British Queen Elizabeth I. The company came to India and met Mughal Emperor Jahangir, who granted them permission to trade in India. The British merchants founded their first trade centre at Surat and then a series of such centres in different parts of the country.

Seeing the British, the French also got tempted. They set up their own company and founded their trade centres at Chandernagore in Bengal and Pondicherry (now Puducherry) near Chennai. Soon rivalries grew among the European companies, as each tried to expand their trade more and more in India. With the passage of time, the British and the French became main rivals. Finally, the French were defeated by the British, who began to dominate the European trade with India. The French were allowed to keep Pondicherry.


## THE BATTLE OF PLASSEY AND BUXAR



The Battle of Plassey

The British East India Company grew ambitious and powerful and the Mughal power gradually weakened after the death of Aurangzeb in 1707. The Company started maintaining an army in Bengal. Nawab Siraj-ud-Daulah of Bengal ordered the disbanding of the Company's army. But the Company paid a deaf ear. This led to the Battle of Plassey in 1757. The British under Robert Clive defeated and killed the Nawab. The British then began to dominate the affairs of Bengal. With their victory in the Battle of Buxar (1764) the British established their direct rule over Bengal, and became a political and military power in India.

Through a series of victories in other parts of the country, the British gradually emerged as the most dominant power in the country. Then they adopted various policies such as the [Subsidiary Alliance](#) and the [Doctrine of Lapse](#) with which they virtually established their rule over the entire Indian Subcontinent.



Lord Richard Wellesley was the Governor General of the Company in India from 1798 to 1805. It was he who started the policy of Subsidiary Alliance, according to which Indian rulers under British protection had to give up their native armies and instead maintain British troops within their states. They were forced to surrender their foreign affairs to the British. In return, the East India Company protected them from the attacks of their rivals.



Lord Wellesley

The Doctrine of Lapse enabled the British to annex any Indian state if the ruler of that state died without leaving a natural-born heir, that is, the ruler's own son.

## THE REVOLT OF 1857



The Revolt of 1857

By 1857, different sections of Indian society got embittered with the British rule. The rulers had been reduced to the state of puppets and were feeling demoralized. The peasants had to pay heavy taxes and were on the verge of poverty. The Indian traders and merchants were deprived of their age-old work and patronage. Indian soldiers working in the British army were highly discontented because of intolerable discrimination and humiliation shown by the Britishers. All these factors led to an uprising in 1857,

widely known as the [Revolt of 1857](#) or the [Sepoy Mutiny](#).

The spark was produced by the introduction of a new Enfield rifle for which the cartridge had a greased cover to be bitten off before use. There spread a rumour that this cover was greased with the fat of cows and pigs.



**Bahadur Shah Zafar II**

This offended the feelings of Hindus as well as Muslims. The Indian soldiers refused to use this cartridge, overthrew their superiors in Meerut on 8 May 1857 and marched to Delhi to crown Bahadur Shah Zafar II as the rightful ruler of India. Soon, Indian rulers like Rani Lakshmi Bai of Jhansi, Nana Saheb Peshwa, Tatya Tope and Kunwar Singh joined the rebels and waged wars against the British. The revolt continued for two years but was finally suppressed by the British.

The revolt failed because it lacked unity and proper leadership and was totally ill-planned. The British were better armed and organized. Besides, some Indian rulers helped the British. Rani Lakshmi Bai was killed in the battle field. Nana Saheb escaped to Nepal. Kunwar Singh was fatally injured. Bahadur Shah was captured and exiled to Burma (now Myanmar). His two sons were killed bringing an end to the once mighty Mughal Empire.


The Revolt of 1857 was a turning point in the British rule of India. The rule of the East India Company was replaced by the British Crown. Queen Victoria was declared the Empress of India. It was also decided that henceforth her viceroys would govern India on her behalf.



**Rani Lakshmi Bai**

## **THE INDIAN NATIONAL CONGRESS**

Despite its failure, the Revolt of 1857 sowed the seeds of Indian nationalism in the people's mind. Many Indian intellectuals began to ponder over the possible reasons of the pathetic condition of their country which was being ruled by a very small country like England and that too from such a long distance. They concluded that the main reasons were different evils which



had gripped the Indian society and made the country weak. Social and religious reformers such as Raja Ram Mohan Roy, Dayanand Saraswati, Swami Vivekanand, Ishwar Chandra Vidyasagar, Sir Syed Ahmad Khan and many others took initiative to bring about a change in the Indian mindset. They spoke against the evils of sati, casteism and child marriage. Soon, awareness grew among those who had received modern education and they began to think of organizing themselves with a national identity. This led to the formation of the Indian National Congress (INC) in 1885.



Dadabhai Naoroji

### Do You Know?

An Englishman, Allan Octavian Hume along with Dadabhai Naoroji and William Wedderburn formed the Indian National Congress. In its first session of 1885 at Bombay (now Mumbai), 72 delegates participated.

The main aim of the INC was to draw attention of the British government to the problems faced by the Indians. They did so through prayers and petitions. This was the **moderate** phase of the INC. National leaders like Gopal Krishna Gokhale, Dadabhai Naoroji, Surendra Nath Banerjee and Badruddin Tyabji believed in the British sense of justice and felt that reforms in the Indian system would definitely be introduced by the British government.



Bal Gangadhar Tilak

By 1905, the older and younger members of the Congress began to disagree with each other over the methods to get reforms. Leaders like Bal Gangadhar Tilak, Lala Lajpat Rai and Bipin Chandra Pal wanted immediate action and were not in favour of prayers and petitions. They came to be known as **extremist** leaders. Tilak wanted the common people to participate in the movement as he felt that nothing would be achieved without them. His newspaper **Kesari** was very critical of the British government.



## PARTITION OF BENGAL

In 1905, Lord Curzon (1899–1905) tried to weaken the national movement by partitioning Bengal into two parts. The reason given was that this would make governing easier. But the nationalists immediately understood this 'divide and rule' policy of the viceroy. Thousands of



Mohammad Ali Jinnah with Mahatma Gandhi

people came out to protest against this order. The protest continued for about six years. Due to this massive and continued protest the Government was forced to reunite the two parts in 1911. But it had already created a divide between the Hindus and the Muslims. The **Muslim League** was formed in December 1906 by Nawab Salimullah Khan in Dhaka. Aga Khan joined it soon after. In 1913, Muhammad Ali Jinnah joined the League.

## SWADESHI MOVEMENT

The protest against the partition of Bengal had two components—Swadeshi and Boycott. British-made goods were boycotted and people were asked to buy Indian-made (**swadeshi**) goods only. British-made goods were thrown into bonfires. It resulted in the establishment of textile mills, banks, soap and pen factories by the Indians. Students and women joined the movement in large numbers. Many Indian schools were opened where the traditional education system was adopted. The movement spread to other parts of India. The police attacked the protesters, hit them with lathis and bullets and put them into jails. But the nationalist spirit did not subside.

Finally, the Government agreed to introduce some reforms. But First World War broke out in 1914 and the reform programmes were set aside. Instead, the British asked the Indians to help in the war. The Indians

obliged thinking that the British would address their demands after the war. But the Indians were disappointed after the war was over. The Government instead made strict laws like the Rowlatt Act and tried to strengthen their control over India.

Mahatma Gandhi had returned from South Africa to India in 1915. After the First World War, began the Gandhian Phase of freedom movement.

### Key Words

- petition : a formal written request signed by many people to the authority concerned
- revolt : violent resistance to authority
- viceroy : a person governing a colony, province etc. as the representative of a king or a queen
- swadeshi : indigenous

## Let's Wrap Up

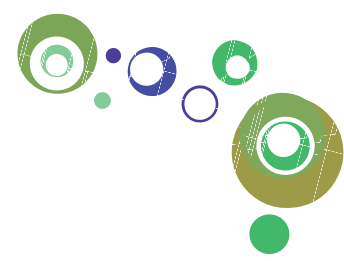
- ✦ In 1498, Vasco da Gama discovered a sea route to India.
- ✦ The English East India Company was formed in 1600.
- ✦ The sepoy mutiny broke out in 1857.
- ✦ The Indian National Congress was formed in 1885.
- ✦ The Swadeshi and Boycott movements were launched in 1905 to protest against the partition of Bengal.
- ✦ The Muslim League was founded in 1906.
- ✦ First World War broke out in 1914

## Exercises

### A. Fill in the blanks with the words given in the box.

Enfield    Burma    Muslim League    Calicut    Dutch

1. The ..... followed the Portuguese in India.
2. In 1498, Vasco da Gama landed at ..... in India.
3. The immediate cause of the Revolt of 1857 was the introduction of the ..... rifle .
4. Bahadur Shah Zafar was captured and exiled to .....
5. The ..... was formed in December 1906.



**B. Write short answers for the following questions.**

1. Who discovered a new sea route to India and when?
2. Who granted the permission to British East India Company to trade in India?
3. Who were extremists?

**C. Answer the following questions.**

1. What were the causes of the Revolt of 1857?
2. What led to the formation of the Indian National Congress?
3. How did people react against the partition of Bengal?

**D. Multiple Choice Questions (MCQs)**

**Tick (✓) the correct option.**

1. The Subsidiary Alliance was introduced by .....  
a. Lord Curzon       b. Robert Clive   
c. Lord Wellesley       d. Lord Dalhousie
2. The battle of Buxar was fought in .....  
a. 1757       b. 1760   
c. 1762       d. 1764
3. The Muslim League was founded by .....  
a. Muhammad Ali Jinnah       b. Salimullah Khan   
c. Liaquat Ali       d. Sir Syed Ahmad Khan
4. Who among the following was not a founder member of the Indian National Congress?  
a. Dadabhai Naoroji       b. Mahatma Gandhi   
c. Badruddin Tyabji       c. Lala Lajpat Rai
5. Who among the following did not take part in the Revolt of 1857?  
a. Kunwar Singh       b. Tantia Tope   
c. Nana Saheb       d. Bhagat Singh

**E. Write 'T' for true and 'F' for false statements.**

1. Swami Vivekananda was among the co-founders of INC.
2. The British won the Battle of Plassey.
3. The Indian National Congress criticised the government policies right from its birth in 1885.

- 4. The Dutch settled in India permanently. □
- 5. After the First World War, the Government made strict laws to strengthen their control over India. □

**F. Rearrange the letters in brackets to form the correct word.**

- 1. The battle fought in 1757 between the British and the Nawab of Bengal : ..... (PALSEYS)
- 2. Indian-made goods : ..... (ISAWHSED)
- 3. The Revolt of 1857 began here : ..... (UTREME)
- 4. Refusal to take part in something : ..... (YOBTOTC)
- 5. Also known as a soldier : ..... (YESOP)



**Discuss** Why was Bengal partitioned ?



**HOTS** Indians learnt from the British and tried to get rid of social evils existing in the society. Do you agree? Why? Why not?



**Activity Zone**

Choose a boy to act as Lord Richard Wellesley and one group to act as India rulers. Let the group protest against British rule.



**Life Skills**

Education played a significant role in eradicating the social evils in pre-independence era. Do you think all the evils have been eradicated now? Discuss with your friends.



**Teacher's Corner**

Teach the students more about the role of extremist leaders in the freedom struggle.

# 16

## The Gandhian Phase of Freedom Movement (1919-1947)

Mohandas Karamchand Gandhi, popularly known as Mahatma Gandhi, was born at Porbandar in Gujarat in 1869. His father's name was Karamchand Gandhi and his mother's name was Putali Bai. He was married at a young age to Kasturba Gandhi. He went to England to study law and spent about 22 years in South Africa as a lawyer and activist. Indians were suffering lots of humiliation and discrimination at the hands of Whites of South Africa. Gandhiji himself was humiliated on a few occasions. Once he was thrown out of the first class compartment despite having a valid ticket because he was an Indian. He launched a long-drawn Satyagraha movement in South Africa which fetched many concessions to the Indians living there.



Mahatma Gandhi as Lawyer



Mahatma Gandhi using a Spinning Wheel

Gandhiji returned to India in 1915 and after a couple of years became the most important leader of the national movement led by the Indian National Congress. He wanted every Indian to unite, putting aside religion, gender and caste, then only the country would achieve freedom. Since the majority of Indians were poor, he gave up all his comforts and luxuries, and started leading a simple life. He himself made cotton threads on **charkha** (spinning wheel) and requested the people to wear only **khadi** or **home-spun** clothes. He was saddened by the shabby treatment meted out to low-caste Indians by the higher-caste Indians. He set an example by living with those who were called 'untouchables'.

He gave them a new name, '**Harijans**', which meant 'Children of God'. He



believed that the best way to achieve freedom from the British rule was through non-violence and non-cooperation. For his contribution to the freedom movement, he is called the **Father of the Nation**.

### Do You Know?

Nobel laureate Rabindranath Tagore was the first person to use the word 'Mahatma' or the 'great soul' for Gandhiji.

## THE ROWLATT ACT

After the First World War, the British government instead of rewarding Indians with concessions and reforms, introduced some laws to curb their freedom. One such law was the Rowlatt Act passed in 1919. This law allowed the government to send anyone to jail without a trial in court. If any one protested against the various acts of the government, very strict measures were to be taken against him or her.

## JALLIANWALA BAGH MASSACRE



The Jallianwala Bagh massacre

General Dyer, a British officer, had imposed ban on all meetings and processions in Amritsar. But some people, went ahead with a peaceful meeting in a park named Jallianwala Bagh. The park had only one exit. On General Dyer's orders, the policemen blocked that exit and started shooting at the people. Thousands of people were killed and seriously injured. Many of them were children and women. This massacre took place on the occasion of Baisakhi on 13 April 1919. To protest against this cold-blooded massacre of innocent people, the Indian National Congress, at the initiative of Mahatma Gandhi, started the Non-Cooperation Movement in 1920. With this began the Gandhian phase of freedom movement.

The **Non-Cooperation Movement** was a non-violent protest movement through Satyagraha. Its ultimate aim was to achieve independence by peaceful means, toeing the line of non-violence and truth. Thousands joined this movement which soon echoed throughout the country. Students shunned British-run schools and colleges, and the lawyers boycotted the courts. People picketed shops selling British-made goods



and asked people to buy **swadeshi** or Indian-made goods instead. Picketing meant protesting outside the entrance of a factory or shop in order to stop work. Elections and government functions were boycotted. Titles and honours given by the British government were returned. Rabindranath Tagore returned the knighthood given to him by the British government in 1915.

The movement went as planned for two years, but it turned violent at Chauri-Chaura in Uttar Pradesh in 1922. A procession of farmers was fired at by the police and in retaliation the people set the Chauri-Chaura Police station on fire, killing 22 policemen. Disappointed at the violent incident, Gandhiji called-off the movement.

Some Indians got disappointed with the withdrawal of the Non-Cooperation Movement. They started revolutionary activities against the British government. They felt that non-violent movements would not get them freedom. Bhagat Singh, Chandrashekhar Azad, Sukhdev, Rajguru, Batukeshwar Dutt, Jatin Das, Surya Sen, Binoy, Badal, and Dinesh were some of those revolutionaries who fought against the government and lost their lives. Their bravery, heroism and sacrifices are remembered even today.

### **SIMON COMMISSION**

The British government constituted a commission in 1927. Sir John Simon headed the commission. Its objective was to review what was wrong with the law and order situation in India and come up with new reforms. The commission came to India in 1928. The Congress boycotted it as there was no Indian among the seven members of the Commission. The people protested with black flags and shouted slogans like 'Simon go back'. Lala Lajpat Rai was grievously injured in the lathi-charge at the protesters and a few days later succumbed to his injuries.



Violence at Chauri-Chaura



Boycotting British goods



Jawaharlal Nehru with Mahatma Gandhi

## Do You Know?

Lala Lajpat Rai was popularly known as 'Punjab Kesari'.

### CIVIL DISOBEDIENCE MOVEMENT



Protests against the Simon Commission

The efforts of the Simon Commission got aborted ultimately. The government challenged the Indian National Congress to form a constitution which could be accepted by all groups of Indians. The challenge was taken up by the nationalists who made a committee, headed by Motilal Nehru, for this purpose. A draft constitution was formed but the government rejected it.

The Congress then decided to get complete independence from the British. At its Lahore session, the Congress decided to celebrate the Independence Day on 26 January 1930 and raise its own flag. It also decided to launch a new movement under the leadership of Mahatma Gandhi. This movement came to be known as the **Civil Disobedience Movement**. Other prominent leaders of the movement included Jawaharlal Nehru, Sardar Vallabhbhai Patel, Dr. Rajendra Prasad, Maulana Abul Kalam Azad and Sarojini Naidu. The movement began with the Dandi March in March 1930.



Mahatma Gandhi with Maulana Abul Kalam Azad (middle) at the Quit India Meeting of the Congress in August 1942.

The government had a monopoly or complete control over the manufacture of salt. Indians were not permitted to collect salt from the sea. Rather, they had to purchase it from the British at high prices. Gandhiji decided to defy this law. Along with 78 of his followers, he left his Sabarmati Ashram in Ahmedabad for Dandi, situated at a distance of over 300 kilometres on the sea-coast of Gujarat. On reaching there, he picked up a handful of salt breaking the salt law. This was in open defiance of the British law.

Lakhs of people joined the movement. Peasants, landlords, students,



professionals, women and even children joined the movement. They all defied laws at different levels in different parts of India. Following the steps of Gandhiji, many people broke the salt law at different places along the coast of India. Thousands of people were arrested. As people were being stuffed into jails more and more joined the movement which soon spread all over the country. The movement continued till 1934. In the meantime, Gandhiji was twice invited to attend the Round Table Conferences which bore no fruits. Gandhiji and other leaders were also arrested. The British tried to tone down the nationalist fervour by introducing certain changes through the Government of India Act 1935, but the Indians remained unsatisfied.



Dandi March



Quit India Movement


They now did not want any changes but only freedom. However, the Congress participated in the elections held in 1936 to prove how unpopular the government was with Indians. The Congress formed government in most of the provinces.

World War II broke out in 1936. Again the British wanted India to help in the war efforts. The British dragged India into the war without consulting the Indian leaders.

The Congress governments in the provinces resigned in protest. The British government remained adamant and was not ready to listen to Indian leaders. So, Gandhiji asked the British to 'Quit India' and appealed to the people to 'do or die', meaning Indians should either win freedom or die trying to get it. This movement started in 1942 and was termed as the [Quit India Movement](#).

## THE INDIAN NATIONAL ARMY

Netaji Subhas Chandra Bose, popularly named as Netaji, was one of the brilliant leaders of the freedom movement. He represented the younger generation of Congress leaders. He had got through the prestigious



Indian Civil Services examination but did not join it as he was interested more in serving the motherland.

He joined the Indian National Congress and was twice elected successively as its President, despite Gandhiji's opposition towards his candidature. He later resigned. The government arrested him and sent him to jail, but due to his deteriorating health, he was released and was put under house-arrest. By camouflaging himself, he escaped to Russia via Afghanistan. He went from Russia to Germany and met Hitler who helped him reach Japan. With the Japanese help, he organized the Indian National Army or Azad Hind Fauj at Singapore and marched on towards the borders of India via Burma (now Myanmar). This army defeated British army at several places in the east, but with the defeat of Japan in the World War II the Indian National Army got decimated.



Subhas Chandra Bose

### Do You Know?

The two most famous slogans given by Subhas Chandra Bose were : "Give me blood and I will give you freedom," and 'Delhi Chalo' (March on to Delhi).

## FREEDOM ACHIEVED

After the end of World War II, the British had no option but to give India her freedom. The Labour Party came to power in Britain and the new Prime Minister Attlee started the process of granting freedom to India. A new Viceroy Lord Mountbatten was sent to India.

India was divided into two parts--India and Pakistan. Pakistan was declared free on 14 August 1947, while India became free on 15 August 1947. Jawaharlal Nehru became the Prime Minister of India, while Muhammad Ali Jinnah became the first Governor-General of Pakistan. When India became a republic in 1950, Dr. Rajendra Prasad became the country's first President.



Jawaharlal Nehru



- disobedience : refusal to obey or the act of defying
- massacre : the killing of a large number of people
- revolutionaries : a group of people that support a revolution
- satyagraha : the act of non-cooperation with peaceful, non-violent and truthful methods

## Let's Wrap Up

- ✦ The Non-Cooperation Movement was launched in 1920 and called off in 1922.
- ✦ Many nationalist got dissatisfied after the withdrawal of the Non-Cooperation Movement and started revolutionary activities.
- ✦ The Simon Commission was greeted with black flags and slogan shouting all over the country.
- ✦ The Civil Disobedience Movement (1930-34) began with the Dandi March.
- ✦ The Quit India Movement was launched in 1942.
- ✦ Netaji Subhas Chandra Bose organised the Indian National Army or Azad Hind Fauj.
- ✦ India achieved her freedom on 15 August 1947.
- ✦ Dr. Rajendra Prasad was the first President and Jawaharlal Nehru, the first Prime Minister of India.



### A. Fill in the blanks with the words given in the box.

Rowlatt   Harijan   President   Simon   Quit India

1. Dr Rajendra Prasad became the first ..... of India.
2. The British appointed the ..... Commission to review the law and order situation in India.
3. The ..... Act was passed in 1919 .
4. .... Movement was launched in 1942.
5. .... means Children of God.



**B. Write short answers for the following questions.**

1. Name the British officer involved in Jallianwala Bagh massacre.
2. Who returned his 'Knighthood' in protest of Jallianwala Bagh massacre?
3. What were the two popular slogans during the Quit India Movement?

**C. Answer the following questions.**

1. Why was the Non-Cooperation Movement withdrawn?
2. Why was the Simon Commission constituted? Why was it protested by the Indians?
3. Write what you know about the Dandi March.

**D. Multiple Choice Questions (MCQs)**

**Tick (✓) the correct option.**

1. About how many years did Gandhiji spend in South Africa ?  
a. 15  b. 20   
c. 22  d. 23
2. The Jallianwala Bagh incident occurred on .....  
a. 13 April  b. 13 May   
c. 23 May  d. 23 August
3. Who named Gandhiji 'Mahatma'?  
a. Jawaharlal Nehru  b. Motilal Nehru   
c. Rabindranath Tagore  d. Gopal Krishna Gokhale
4. The Congress decided to celebrate Independence Day on .....  
a. 15 August  b. 31 December   
c. 26 January  d. 2 October
5. Gandhiji started the Dandi March alongwith ..... followers.  
a. 72  b. 78   
c. 88  d. 98

**E. Write 'T' for true and 'F' for false statements.**

1. Netaji was shot dead by the British police.
2. The Civil Disobedience Movement was launched from Mumbai.
3. Sarojini Naidu was the first President of India.



- 4. Gandhiji started the Non-Cooperation Movement in 1920.
- 5. These was only one Indian member in the Simon Commission.

**F. Rearrange the letters in brackets to form the correct words.**

- 1. The march to get salt from the sea :  
..... (IDDNA)
- 2. The British called him to suggest new reforms :  
..... (SINOM NJHO)
- 3. Formed an army in Singapore :  
..... (IJENAT)
- 4. Gandhiji went there to study law :  
..... (ELNGDLA)
- 5. The General behind the massacre of thousands of people in Jallianwala Bagh was : ..... (ELNGEAR DREY)

**Discuss** Why did Gandhiji believe in simple living?

**HOTS** Whose philosophy appeals you more—Mahatma Gandhi or Bhagat Singh? Why?

**Activity Zone**

Collect the pictures of freedom fighters and make an album. Name this album 'Our Heros'.

**Life Skills**

We owe a lot to the freedom fighters. We should be grateful to them for their selfless deeds. Are there any such leaders today? Discuss with your friends.

**Teacher's Corner**

Tell the students about the novel 'Train to Pakistan' by Khushwant Singh, based on the partition of India and Pakistan.

# Revision Test Paper - I

(Based on Chapters 1 to 8)

## A. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

- Which of the following is the largest continent on the Earth?  
a. Europe  b. Asia   
c. Africa  d. Australia
- Which of the following help to calculate time?  
a. Longitudes  b. Latitudes   
c. Meridians  d. Equator
- Which of the following motions of the Earth causes day and night?  
a. Rotation  b. Revolution   
c. Both of these  d. None of these
- The scientific study of climate is called .....  
a. Geology  b. Petrology   
c. Meteorology  d. Climatology
- Which of the following tribes are found in the Congo Basin?  
a. Pygmies  b. Kubus   
c. Bantus  d. Dayaks

## B. Match the columns.

### Column A

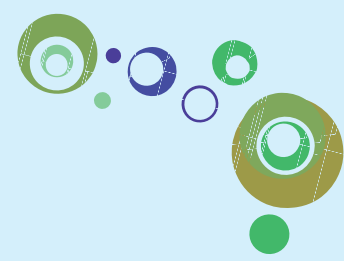
- Equinox
- International Date Line
- Nile
- Torrid zone
- Zaire

### Column B

- 180° meridian
- Equal day and equal night
- Hot zone
- Bantus
- Longest river

## C. Write 'T' for true and 'F' for false statements.

- The Mariana Trench is the deepest trench in the world.
- Tropic of Cancer is an important longitude.
- Roald Amundsen was the first person to reach South Pole.
- Altitude does not affect the temperature of a place.
- The well-known anaconda snakes live in the Amazon Basin in South Africa.



# Model Test Paper-I

(Based on Chapters 1 to 8)

**A. Answer the following questions.**

1. What do you mean by Pangaea?
2. Differentiate between latitudes and longitudes.
3. Why are the prairies called the granary of the world?
4. What is water cycle?
5. What are the different types of pollution?

**B. Fill in the blanks.**

1. North Pole is located in the ..... Ocean.
2. .... are imaginary lines running from North to South.
3. The ..... desert is rich in iron ore, copper, petroleum and natural gas.
4. The chinook is a type of ..... wind.
5. The planting of new trees is called .....

**C. Write one word for the following statements.**

1. This is also known as the white continent. ....
2. This is the hottest zone. ....
3. This tree can store over 1,000 litres of water in its trunk. ....
4. Going in the deep and long winter sleep. ....
5. Trees absorb excess of this gas from the air. ....

**D. Circle the correct words.**

1. Suez/Panama Canal is the link to connect the Mediterranean Sea with the Red Sea.
2. Latitudes are parallel/perpendicular to each other.
3. Salinity/Humidity refers to the amount of moisture in the air of a place.
4. Downs/Pampas grasslands are located in South America.
5. The substance which pollutes is called polluter/pollutant.

**E. Locate the following on an outline map of the world.**

1. Asia
2. Great Barrier Reef
3. Greenwich
4. Indonesia
5. Pampas grasslands

# Revision Test Paper -3

(Based on Chapters 9 to 16)

## A. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

- Television was invented by John Logie Baird in .....  
a. 1924  b. 1922   
c. 1920  d. 1916
- The most earthquake prone country in the world is .....  
a. India  b. China   
c. Japan  d. Indonesia
- Ajanta Caves are situated in .....  
a. Odisha  b. Maharashtra   
c. Madhya Pradesh  d. West Bengal
- The Shivneri Fort is the birth place of .....  
a. Jahangir  b. Shivaji   
c. Akbar  d. Shah Jahan
- The Battle of Buxar was fought in .....  
a. 1757  b. 1764   
c. 1857  d. 1920

## B. Match the columns.

### Column A

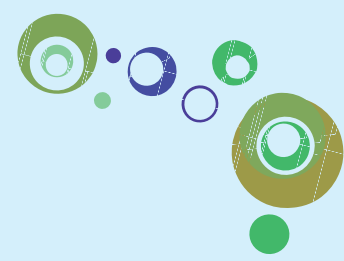
- Lord Wellesley
- Radio
- Extinct Volcano
- Jallianwala Bagh Massacre
- Ashoka

### Column B

- Marconi
- Subsidiary Alliance
- Sanchi Stupa
- Vesuvius
- General Dyer

## C. Write 'T' for true and 'F' for false statements.

- Communication stops us to reach out to people far from us.
- The crust of earth is hot and molten.
- The Red Fort of Delhi was built by Jahangir.
- Terracotta art is seen at many places in West Bengal and Odisha.
- Subhas Chandra Bose was twice elected as the President of the Indian National Congress.



## Model Test Paper-2

(Based on Chapters 9 to 16)

**A. Answer the following questions.**

1. What is mass communication?
2. How is an earthquake caused?
3. What is unique about the Sun Temple?
4. Why was the Simon Commission protested by the Indians?
5. Who founded the Arya Samaj? What were its objectives?

**B. Fill in the blanks.**

1. The Taj Mahal was built in the memory of .....
2. .... was the first woman President of the Indian National Congress.
3. .... is known as the Father of the Indian Renaissance.
4. Non-Cooperation Movement was called off by ..... because of Chauri Chaura incident.
5. We celebrate World..... Day on 5 June.

**C. Write one word for each of the following.**

1. He was the inventor of Printing Press. ....
2. The scientific study of the earthquake. ....
3. He launched long-drawn Satyagraha movement in South Africa. ....
4. The practice of burning widows with their dead husbands. ....
5. The UN agency concerned with children. ....

**D. Circle the correct words.**

1. A cyclone/tsunami means a rotating mass of air with minimum pressure in its centre.
2. The Dutch/Portuguese were the first to establish trade centres in India.
3. The Quit India Movement started in 1929/1942.
4. Sarojini Naidu/Indira Gandhi was known as the Nightingale of India.
5. The UNICEF/WHO is a coordinating authority on international public health.

**E. Locate the following on an outline map of India.**

- |           |                  |          |
|-----------|------------------|----------|
| 1. Bhuj   | 2. Shalimar Bagh | 3. Dandi |
| 4. Jhansi | 5. Pune          |          |