CONTENT

1. PART ONE : FOR CAPABILITY BUILDING OF TEACHERS :
   Main points before each Chapter
2. Chapter 1. Environment
3. Chapter 2. Inside Our Earth
4. Chapter 3. Our Changing Earth
5. Chapter 4. Air
6. Chapter 5 Water
7. Chapter 6 Natural Vegetation and Wildlife
8. Chapter 7 Human Environment Settlement, Transport, Communication
10. Chapter 9 Life in Temperate Grasslands
11. Chapter 10. Life in the Deserts

NOTE: For additional information, see the Government of India websites of Ministry of Tourism, Ministry of Culture, and the Archeological Survey of India for World Heritage sites. These can be accessed directly or through www.indiaportal.gov.in

PART ONE            FOR CAPABILITY BUILDING OF TEACHERS

This section for teachers is optional and is an attempt to bridge the ‘facility availability divide’ that exists in many part of India. All teachers do not have equal access to a good library or information sources for preparing good quality teaching content. Bridging this divide in quality educational content is the only intent here. The objective is to provide the quality in learning to the students in all regions, at par with those in the best schools of the country. Strategy adopted is to discuss all chapters on one topic or aspect, together, even though they may be spread out in the text books.

Please also see the separate power point presentation on History and Social Sciences in Class 7 folder.
Main points in Chapter 1: ENVIRONMENT

1. **Environment** comprises of
   (a) **Natural Environment** studied in Geography (Land, Oceans, Winds, Climatic zones) - in this Book.
   (b) **Social Environment** of Family, Society, religion, culture in which people live and socialize. This is studied in Sociology.
   (c) **Political and Economic Environment** where the Government and Economic growth and development related aspects, such as better modes of livelihood, employment, stock exchange, manufacturing and so on, exist.
   (d) **The Global Environment**: worldwide connectivity through internet and media and other communication technology, trade and financial markets. The Global Environment impacts the Political, Economic and Social environment of all other countries.
   (e) The Figure on page 2 of the book illustrates (a) to (c) of the above list.

2. **Components or Parts or Domains of Natural Environment** include (ABHL):
   (a) **Atmosphere**: the air that we breath, and the sky for birds to fly and for Air Travel by humans. This is discussed in Chapter 4 and its layers are on page 22
   (b) **Biosphere**: All plant and animal life is included in ‘bio’= living + sphere. This is studied in Botany and Biology.
   (c) **Hydrosphere**: Hydro = Water (H₂O). Hydro+ sphere = all areas where water exists.
   (d) **Lithosphere**: ‘L’ for Land and ‘L’ for Litho. All forms of solid land including hills, Mountains valleys, plains, deltas, islands, are included in Litho+ sphere. This word is the geographical name given to the topmost layer of the Earth.

3. **Biotic** from ‘bio’ meaning life. It is also called ‘Organic Matter’ studied in ‘Social Sciences’, Botany for plant life and Biology for Animal and Human life. **Abiotic**: ‘A’= without. Abio = without life. Also called **Inorganic Matter** studied in Science. See the power point presentations on ‘Science’ for ‘Abiotic Matter.'
4. **For Ecosystem:** just remember that ‘Jal hi jeewan hai’— where ever there is water, there is life in some form or the other – microbes, insects, caterpillars, earthworms, birds, animals. All the Bird Sanctuaries in India are ecosystems, in which one form of life is dependent upon the other form. The water in a lake softens the earth on its banks. This helps smaller life forms and plant life to grow and survive. The plants and trees provide shelter for birds to build their nests in forms of colonies. This helps the birds to raise their young ones.

5. Humans, also need an ecosystem to live and survive. Throughout history, ancient civilizations have been found on the banks of major rivers. They have disappeared after the rivers either dried up or were flooded massively to drown entire townships. This is believed to have happened in the case of Harappan Civilization. In the History book of Class 7th, you will read about several new cities, that were built by provincial rulers of Medieval India near river banks. Some of the cities have survived since 5th century B. C. because they were on confluence of rivers or river banks. – Prayag (Allahabad), Kashi (Varanasi), Pataliputra (Patna), Mirat (Meerut), Mathura – Vrindavan, Kanchi (Kanchipuram), Tanjvur (Tanjor), Calicut (in Kerala).

**PART TWO FOR STUDENTS**

The answers given here are longer than would be needed for Class 7th examination. This is because these also cover the revision requirements of candidates for various competitive examinations later on. Whatever is studied in classes 7 to 10th is asked in qualifying competitive examinations. The Class 7th students are requested to read these for understanding all points. If needed they may re-write the answers in their own words.

Questions on ‘Give reasons’ at the end of each Chapter
Chapter 1

1. Man modifies his environment

Man, continuously, tries to make life more comfortable for himself. For this he has learnt (a) to use natural resources from his environment, to build houses for his shelter and to make clothes and other items for his use. (b) to grow food through agriculture, (c) to develop various modes of transportation.

The resources used for all such activities modify the environment. For example, when trees are cut to use wood for building a house or for burning as fuel or to make paper, deforestation results. When industries are set up, rivers and air get polluted. Modern technology has increased the capacity of man to modify his environment faster than before. Natural environment is being replaced with a man made environment.

2. Plants and animals depend on each other.

All life forms survive as an ‘ecosystem’. Plants and trees provide food and shelter for several animals and birds. Many herbivorous animals depend on plants and grass for food. Animal and birds carry pollen grains and seeds in their fruits, to deposit them far and wide. As plants themselves cannot move, the movement of birds and animals helps the movement of seeds. This makes plant life to spread to distant places.
Chapter 2  Inside Our Earth

For Teachers : Main points

1. In the power point presentation on ‘Science’, we have seen that all Inorganic or Abiotic or Non-living Matter on Earth was created at the time the Earth was created. Inorganic Matter is made up of 92 Elements. Out of these only 8 elements are in large quantities.

2. More natural elements cannot be created by humans, but man has learnt to mix two or more natural elements, to create new alloys. This is studied in Chemistry and Metallurgy, in higher classes. In Geography as a Social Science, we only study the rocks and forms of land mass where these elements and metals are found.

3. In this Chapter, we read about the ‘structure of the Earth’. One Scientific principle is that all matter is attracted towards Earth, or all things fall towards the land / ground, due to the ‘force of Gravity’ of the Earth. The core of the Earth is the source of Gravity. The core of the Earth is made of molten rocks and metals. This is sometimes seen on the surface in the form of the ‘lava’ that erupts out of a volcano.

4. All metals and precious stones, including rocks found in the lithosphere (land or upper most crust) of the Earth have been deposited through the lava also called ‘magma’ that originates at the core of the Earth.

5. Humans cannot reach the core of the Earth, because of intense heat and the estimated distance of 6000 kms from the oceans’ floor to the Core. The deepest oil drilling on land has been 8 km and that on ocean floor it has been 6 kms deep. With each km of digging under the ground, the temperature rises and the heat makes it impossible to drill further.
6. The lava / magma that reaches the Earth’s surface, cools and becomes a very hard form of rock called ‘Igneous Rock.’ Granite is the best known form of Igneous rock.

7. The Lava / Magma, turns into rock through the following process.

Source: Downloaded from internet from Land and soils of India

Source: Downloaded from internet
Sandstone rocks
Metamorphic rocks

Rocks change into other forms due to heat and climatic conditions, erosion by sunlight, water and wind changes their shapes as well. Changed forms of
Sedimentary rocks are called **Metamorphic Rocks**. In the pie chart given on next to next page, please note that sedimentary rocks have the minimum proportion, and most have been converted into metamorphic rocks through the ages.

Source: downloaded from internet from Land varieties in India.

The next picture is of Malani Igneous Rock found in the erstwhile Marwar kingdom of medieval history and present day Marwar /Jodhpur district of
Rajasthan. It is of volcanic origin and has been used to construct the Mehrangarh Fort in Jodhpur. The layer upon layer deposit of magma is visible in this picture.
The pie chart is on the ratio of Igneous, metamorphic and sedimentary rocks in the World.

Give Reasons Question at the end of Chapter 2

8. We cannot go to the centre of the Earth.

The upper crust of the Earth is about 6000 km deeper from the floor of the ocean, after which the Core starts. The Core contains molten rocks at very high temperatures. When even small parts of this core erupt on the surface in the form of magma from a Volcano, it has very high temperatures.

The deepest oil well drilled on land is 8 km deep, and on the ocean floor the deepest oil well is only 6 km deep. The temperature rises very sharply when drilling is continued beyond these depths. Therefore, we cannot go to the centre of the Earth.

9. Sedimentary rocks are formed from sediments

Sediment is made up of sand, silt, and dust like particles that are washed away by rain and rivers from rocks and stones. Rains, rivers, winds, and sea carry sediments from one place and deposit it during their flow. When sediment is deposited in this manner for thousands of years, it gets hardened and converts into sedimentary rocks. In this way, sedimentary rocks are formed from sediments.
10. Limestone is changed into marble.

Limestone is a sedimentary rock. The oldest layers of limestone undergo a change due to pressure and heat, that convert it into marble.

Rocks so converted are called Metamorphic rocks, because they have changed from one form of rock to another. ‘Meta’ means ‘to change’.

Chapter 3 Our Changing Earth

For Teachers: Main Points

This chapter discusses changes on surface of the Earth, due to erosion due to climatic conditions, by heat from the Sun, wind, and water – ice, rain rivers, seas and oceans.

1. The Himalayas are the youngest and the highest mountain ranges in the World. This is visible from their height, structure of the mountains and their very sharp peaks. The sharp peaks are indicative of its young age, as the forces of nature have not been able to smoothen the edges out. As stated earlier, a smooth peak is seen on hills that indicate it to be an old because the forces of wind and rain have eroded or polished away the sharpness of rocky peak. The Aravalli range in Rajasthan is the oldest range in India.

2. The Aravalli Hills in Rajasthan are the oldest ranges in India. These hills are very low in height due to erosion.

3. The Eastern Ghats along the Eastern coast are lower than the Western Ghats, partly due to higher erosion by the sea winds on the eastern coast. Smoother peaks and valleys indicate effect of erosion by wind and water, as in pictures of the Ghats given on the next page.
4. The Eastern Ghats are more eroded not because of older origin but because of higher rate of erosion by the stronger winds. The winds in eastern peninsular are stronger because the Earth rotates from West to East. This exposes the eastern coast to higher pressure.

5. Another reason is that the Earth is inclined at an angle of 23 ½ degrees on its axis at the North Pole. Therefore, it is therefore tilted towards the East. Due to this tilt or incline, the eastern coast is more directly exposed to the stronger winds from the Indian Ocean and the Pacific Ocean.

1. A few examples of erosion of land, coastal areas, rocks hills and mountains are given below.
Table land or plateau in Eastern Ghat. Mount Everest – the very sharp peaks surrounding it.
In this Map we see the location of all the major ranges in India. (1) The Aravalli Ranges in Rajasthan are the oldest ranges. Therefore, they have hills of lowest height and smoothened peaks. (2) The Vindhya Ranges are the second oldest. (3) Next in age are the Western and the Eastern Ghats, that are almost of the same age. But the Eastern Ghats are more eroded due to higher winds, and cyclonic activity in the Bay of Bengal. (4) Himalayas are the youngest ranges.
(5.) Please note that the Eastern Coast line is also more indented and eroded than the Western coast line. This is due to the rotation of the Earth from the West towards the East. Therefore, the Eastern coast is similar to a person trying to walk against a stronger wind, or someone swimming upstream. The direction of the rotation of the Earth can be seen in the arrow indication in the figure on the next page.

Figure indicating the west to east direction of daily Rotation of the Earth. It also indicates the tilt of the Earth towards the east, at an angle of 23 ½ °. Figure 4.4. on page 25 of your 7th Class Book shows the Earth without the tilt or inclination. It indicates the North and South Poles in a straight line of 180°.

While studying that picture please keep the inclination of the Earth’s Poles, as shown below, in mind.
Give Reasons – questions given at the end of Chapter 3

2. Some rocks have shape of a mushroom

Mushroom shaped rocks are found only in sandy deserts. This is because of continuous erosion by sand that is rubbed against the rocks by the desert winds. Due to this wind erosion the rocks get the shape of mushrooms with lower portion becoming narrower than the upper portion. The lower portion is eroded more because more sand gets lifted by the wind on the surface. This gives the rock a broader upper shape that makes it look like a mushroom.

3. Flood plains are very fertile

During the flooding of a river the flood water deposit silt, clay and sediments on the lands along the banks. The silt and sediment are left behind after the flood water recedes because they are heavier than the water. This forms a new top layer of silt and sediment on the soil. Such deposits make the flood plain more fertile than the plains beyond the banks of the river.

4. Sea caves are turned in to stacks

Sea caves are formed along the coast line due to erosion of coastal rocks by the sea waves and strong winds. As the sea water hits against the rocks cracks develop and broken portion gets thrown away to create a sea cave. Over the years the water cuts a gap across the cave to open it on the other side also. The sea cave then becomes a sea arch that has a through and through passage. Finally after the top arch portion of the rock is also eroded away the sea arch gets the shape of a rock wall standing alone along the coast. This is called a sea stack. As such due to erosion by sea water and sea winds, sea caves are turned in to sea stacks.

5. Buildings collapse due to earthquakes

Earthquakes are caused by a sudden shifting of layers of the lithosphere plates that form the crust of the Earth. This makes the solid ground below
the buildings to develop cracks and cave in. Due to this buildings on the surface of the land collapse.

Chapter 4  
AIR

For Teachers

Important Wind zones on Earth. Arrows indicate the direction of the winds
Notes on the figure given on this page
The red colour indicates the zone of hot winds, and the blue and white are the coldest winds. Note that the direction of the arrows is indicating winds moving towards the Equator, both from the Tropic of Cancer and Tropic of Capricorn. ‘L’ indicates low pressure zone on the Equator. This is because the Earth bulges at the Equator and receives the sunlight more directly. The low pressure regions at the two Poles is also because of the depression of the land at the Poles. The shape of the land at the Poles is like a very large circular bowl. The low pressure region is the upper rim of this circular bowl and therefore receives the sunlight more directly than the centre of the Poles.

**INSOLATION**

Insolation is the amount of heat received from direct rays of the Sun, and retained by the surface of the Earth. This increases the temperature of places that are located between the Two Tropics.

Temperature is the degree of hotness or coldness in the air over a place. Insolation decreases from the Equator towards the Poles due to four reasons.

a) **First**, the shape of the Earth is a spheroid and therefore it bulges out into space at the Equator which is at 0° latitude along the middle of the Earth’s surface.

b) **Second**, the surface of the Earth slopes very sharply for 15° North and 15° South of Equator. Thereafter the slope is very gradual towards the two Poles.

c) **Third**, the Earth is inclined on its Axis at a 23½° angle. This means that the North Pole is reclining towards Sun at this angle while the South Pole is reclining away from the Sun.

d) **Fourth**, during the Revolution of the Earth around the Sun, the Sun is directly overhead (meaning is at 90° from land) only between the two Tropics located at 23½° North and South of Equator. This means that the surface of the Earth that lies between the Tropic of Cancer and the Tropic of Capricorn, receives more direct rays from the Sun than the surface that lies outside the Tropics and towards the Poles.
1. Layers of the Atmosphere

<table>
<thead>
<tr>
<th>Height from surface of Earth</th>
<th>Layer</th>
<th>Memory key</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 100 km and above</td>
<td>Exosphere</td>
<td>‘Ex’ is anything ‘out’ - like ‘Exit’ in a movie hall. So, Exosphere is the outer most layer in the atmosphere.</td>
</tr>
<tr>
<td>2 100 km to 80 km</td>
<td>Thermosphere</td>
<td>‘Thermo’ like thermometer is</td>
</tr>
</tbody>
</table>

A cut out world wind direction map same as indicated on the previous page, but with addition of countries.
<table>
<thead>
<tr>
<th>(approximate)</th>
<th>related To ‘Temperature’. Being on top it is the hottest layer</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 80 km to 50 km (approximate)</td>
<td>Mesosphere ‘M ‘for Middle. This is the middle layer in these five layers - between ‘ S’ for Stratosphere and T for Thermosphere</td>
</tr>
<tr>
<td>4 50 km to 10 km</td>
<td>Stratosphere The alphabet before T is S. In reverse order from the Earth Stratosphere is before Troposphere near the surface of the Earth.</td>
</tr>
<tr>
<td>5 10 km to surface of Earth Highest peak on Earth is Mount Everest – 8,848m high which is about 8.8 kms.</td>
<td>Troposphere ‘Tropo’ can be linked to Tropic of Cancer and Tropic of Capricorn on the Earth. Therefore, the first layer from the Tropics is ‘Troposphere’</td>
</tr>
</tbody>
</table>
High wind flows 5 to 7 days before a cyclone in Indian Ocean

Winds in the above picture turning into cyclonic clouds storm 4 to 2 days before hitting
Give Reasons questions at the end of Chapter 4

6. Wet clothes take longer time to dry on a humid day

Clothes dry quickly on a hot day because the air has less water vapour in it. So it absorbs the water from the clothes very quickly. On a humid day after it has rained, the air has a high content of water vapour in it. Therefore, it absorbs the water from the wet clothes more slowly. Therefore, clothes take longer to dry on a humid day or during the rainy season.

7. Amount of insolation decreases from Equator towards the Poles

Insolation is the amount of heat received from the direct rays of the Sun and retained by the surface of the Earth. If insolation is more, the temperature of the place is more. Temperature is the degree of hotness over a place. The Earth bulges out at the Equator. Therefore, it receives more direct sunshine and gets heated more than other places on Earth. Moreover, the Sun is directly overhead places lying between the Tropic of Cancer and the Tropic of Capricorn. Therefore, only these places receive direct rays of the sun and have more insolation.

Places outside the two Tropics receive on slanting sunrays which are less hot than direct rays. As such, insolation is maximum at the Equator and between the two Tropics, and it decreases towards the North and South Poles.
Water is 70 per cent of Earth’s surface
Red arrows show warm ocean currents and blue arrows show cold currents.
8. Ocean water is salty

All salts are formed by the reaction of Acids and Bases. In the Seas and Oceans the acids and bases, brought down from the land by the waters of various rivers, are continuously mixed by the waves. The heat from the volcanic activity, along the coast as well as on the Ocean floor, helps in creation of salts from the reaction of acids and bases, dissolved in the water.

9. The quality of water is deteriorating

The quality of water is deteriorating due to industrial pollution and other forms of pollution caused by the increasing industry and the ever increasing population on Earth.
Chapter 6  NATURAL VEGETATION AND WILD LIFE

For Teachers

1. Vegetation and wild life is always in response to the Climatic conditions of the area in which it is found.
2. The vast grasslands of Temperate Climate Zones are because the land is frozen in winters. This prevents growth of evergreen trees and bushes.
3. In Equatorial climate, trees have broad leaves and a broad canopy, that is useful in absorbing sunlight and provide shade to cool the lower parts of the tree in the hot climate.
4. In Cold climatic zones, leaves of the trees are very thin like needles, and the shape of the tree is conical, as in pine trees. This is to enable the tree to withstand the strong cold winds and to enable the snow to fall off to the maximum extent possible.
5. Similarly, the wild life has no fur in the hot climatic zones while it has thick fur and thick skin in the cold polar zones.

Thick Equatorial forests

Monsoon coastal forests
Temperate Evergreen Forests are thinner than the Equatorial Forests
Cold climate zone grass lands and flower valley

Penguin inhabit the South Pole only

Cold climate zone conical shaped trees with very thin leaves
Give reasons questions at the end of the Chapter 6

1. The animals in polar region have thick fur and thick skin

The thick fur is able to trap air which remains warm for long periods and provides warmth to the animal. The thick skin act as an insulator and prevent loss of heat from the body, This keeps the animal warm in the extreme cold of the polar region.

2. Tropical deciduous trees shed their leaves in the dry season

In the Tropical zone the temperature during long, dry summer season is very high. The heat makes the broad leaved deciduous trees lose a lot of moisture through the transpiration process that occurs in the leaves. Therefore, to retain their internal moisture from evaporating through the leaves, the trees shed their leaves during the dry season.

3. The type and thickness of vegetation changes from place to place

The thickness of vegetation depends upon the availability of water and the fertility of the soil. These vary from place to place and therefore the type and thickness of vegetation also varies.
Chapter 7  Human Environment: Settlement, Transport and Communication

For Teachers

1. Moving increasingly from temporary settlements towards permanent settlements, involves replacing the Natural Environment with a ‘man-made’ Environment in villages, towns, and cities.

   a) In Pre-historic times, humans took shelter in rock caves and have left behind records in the form of cave paintings. (See Class 6 History book) This was the Tribal stage of human settlement.iv

   b) Gradually, humans invented the wheel to use it for transportation, and also as ‘potter’s wheel’ to make pots from mud, created the plough to cultivate crops. Thereafter, agriculture became his source for food and he stopped migrating.

   c) Roads: All Kings and Emperors built roads for their army and trade. Technology led development brought the steam engine and the railways, the motor bus / car, steam ships, the air craft, telegraph, telephone etc.
2. Houses are built by humans from the natural material readily available in plenty in the natural environment around them. Therefore, Eskimos in the North Pole live in dome shaped houses made from large bricks cut out of hard Ice. These are called ‘Igloos’. These are very warm inside due to scientific principles to be learned in higher classes.

2.1 In mountainous regions across the world, houses are made of Timber. In Japan, China and North Eastern states of India, bamboo is found in plenty so bamboo and thick paper sheets glazed with gum paste are used to construct houses that are very light. In the desert regions, the Gulf countries in particular, tents are used by tribes, and ordinary
houses are built of sandstone bricks. In the 20th century, technology has developed to enable multi story buildings to be constructed. The world’s tallest building today is in the Gulf. (See Mission Impossible III, for an inside view of this tallest hotel building, and for a feel of the sand storm)

House built with Coir and Coconut tree
Wood house with raised platform for flood area

House made from Bamboo and grass

House made of Canvas and paper
Rain forest area houses
An Eskimo village in North Pole

A single igloo

Making Ice Bricks for constructing Igloos Eskimos live only in the North Polar region.
Painting of a traditional cloth tent used in desert region

Picture of a desert tent made from modern polyester fabric – This is also used on sea beaches.
a) Language and Script: Communications was the first sector of development, along with folk music. Records in the form of papyrus scrolls, edicts of Emperor Ashok, Ten Commandments of the old Testament, Pyramids

TRANSPORTATION

3. The story of human transportation, started with the invention of the Cart Wheel in pre-historic times and continues today with the bullet train on land, and better air and sea transportation. The bullock cart, the horse cart, the horse carriage, and the camel cart and carts pulled by other animals have been in use as a mode of transportation, for more than 5000 years.

A bullock cart                                                   A Horse carriage

A loaded bullock cart                                           An Indian Ekka
An Indian Tonga
Various means of modern transportation

COMMUNICATION

4. In the 16th century, the invention of the Printing machine, began the communication through printed books that were cheaper and could be produced in bulk.

5. The first Information and Communication Technology (ICT) revolution from the 19th century was based on coal and steam power (rail road and steam ships) followed by the crude oil power (automobile – buses, bikes, jeeps, tanks, cars), Electricity based (telegraph and telephone, Electric Railways,), Radio and Radar technology led to the invention of airplane and air transportation. The application of Radio and Electricity technology for transportation has continued in the development of the Bullet Trains, larger and faster air planes, and larger ships and air craft carriers.
6. The Communication story of mankind began with cave paintings, development of script and writing on stone such as stone engravings (Edicts of Ashoka), writings on barks and leaves that could be preserved for long (Papyrus scrolls of Egypt, Scroll books of China, leaf scripture of India), painting and sculpture (Ajanta and Ellora caves), Religious architecture,( various temples and stupas / viharas with inscriptions and written records on metal plates ), political architecture (forts, palaces, roads,) are all records of human attempt at communicating the story of their time to future generations.

7. After invention of paper from pulp of bamboo and trees, paper based hand written books and other documents became a means of communication. With the invention of the printing press it became easier to print and publish books. In the 19th century after world had been fully navigated and world trade had been established through sea routes, a need arose to spread one’s national thought and ideas through books to other parts of the world.

The earliest Printing Press
Press for academic journals

The electric motor printing telegraph of 1880
8. It the end of the 20\textsuperscript{th} century, the second Information and Communication Technology (ICT) revolution occurred through the wireless technology of the Internet, the television, mobile telephones, and its variations in the social media as facebook, twitter etc.

Give reasons questions at the end of the Chapter 7

4. Today’s world is shrinking

In ancient and medieval period of world history the means of transportation were limited and slow. Today, Technology of the Internet, Facebook and Twitter, Mobile, enables people to communicate around the globe, within minutes. We can also travel to any part of the world within one day. The world is seen to be shrinking because longer distances can be covered in very short time. Due to this the world is also being called a ‘Global Village’, because just as one can walk around a village within a few hours, so we can travel around the world in within a day.
Chapter 8   Human Environment Interactions - The Tropical and Sub Tropical Regions.

For Teachers:

1. Chapters 8, 9, and 10 tell us about the people in three different climatic zones of the world – namely the Tropical, The Temperate, and the Desert type of climatic zones. Therefore, these three Chapters could be studied together.

2. The Tropical and the Temperate climatic zones have the highest density of population in the world.

3. Life in two major river basins (1) Amazon basin in South America and (2) India falls in the Tropical Region. Are studied in Chapter 8. Please see the areas in pink in the Climate map below.

For Chapter 9 please see the green colour areas in this map, and for Chapter 10 please see the yellow and orange colour areas.

Together, the three coloured areas A, C, and B, are located between the Tropic of Cancer at 23 ½ ° North of Equator, and Tropic of Capricorn at 23 ½ ° South of Equator. The yellow and orange desert climate is mostly at the Equator.
The area between the two Tropics is said to have Tropical and sub Tropical Type of climate.

From the photographs of the rainforests given in earlier chapters we know that the trees in Tropical forests have broad trunks, large leaves and a big canopy at the top. They grow thickly together in a manner, that in the African and Amazon Rain forests, the sunlight is not able to reach the ground. Large animals such as Elephants, the Rhino, bears, and large reptiles such as alligators and crocodiles inhabit these forests. A wide range of monkeys, flying monkeys, chimpanzees, gorilla, langur (black faced monkey) live in Tropical forests.

Birds of these forests are highly colourful, such as the large parrot of Amazon basin forests.
Animals in Amazon forests and other Tropical forests

The Temperate Forests are less dense and allow the sunlight to pass through them to reach the ground.

For Students

Give Reasons question at the end of Chapter 8

5. The rainforests are depleting

As the human population in the world is increasing more and more land is needed to create human settlements. Rainforests are the thickest forests found between 15 degrees north and south of the Equator. Earlier it was very difficult to cut down these forests. Today several machines are available to clear them for creating settlements. Therefore the rainforests are depleting firstly because they are being cut down faster than they can re-grow and secondly because more land is needed for human settlements.

6. Paddy is grown in the Ganga-Brahmaputra plains

Paddy crop needs large amounts of water to grow. As such it can be cultivated only near rivers or areas of heavy rainfall where water is available throughout the growing season. This condition exists in the northern and north eastern plains where two River Ganga and River
Brahmaputra flow. Therefore paddy is grown in the Ganga-Brahmaputra basins or plains.

Chapter 9  Life in Temperate Grasslands

For Teachers: Please see map on page 44 for this Chapter also.

Most European countries and countries around Mediterranean Sea are in Temperate Grassland zones.

Please note that no trees are visible in these vast grasslands that extend from horizon to horizon. This is because the ground is covered in ice for about 5 months, and the forests existing in ancient times have all been cleared.

- Meadow Lark is a temperate grassland bird
- Prairie dogs live in burrow
- Gazelle antelopes in North Africa
Bactrian Camel has two humps that enable it to survive without water for a longer time. It is found in stony plains of grasslands, feeds on grass, leaves and shrubs.

Give Reasons questions at the end of the chapter

7. The Prairies are known as the ‘Granaries of the World’

‘Prairies’ are the vast grasslands in central parts of North American Continent. They have a ‘Temperate Type of Climate’ that is ideal for cultivation of wheat and maize. With the help of modern technology the United States of America has been able to convert these vast grasslands into very large farmlands. Due to favourable climate and technology very large amounts of grain is cultivated on these large farmlands and exported to many countries around the world. The grain is stored in special structures called ‘granaries’ meaning ‘a storage space for grains’. Therefore ‘Prairies’ are called the ‘granaries’ as they grow and store the grain that is eaten across the world.
8. Rise of wool industry in the Velds in South Africa

The ‘Velds’ are the Temperate Grasslands in South Africa. They have a special name because they are located on a ‘rolling plateau’ through which River Orange and River Limpopo flow. The Grasslands have a cold and dry winter with temperature between 5 degrees to 10 degrees. Due to grass and presence of river water in a cold winter, it is easy to rear the wool bearing animals such as sheep and goat. As such the wool industry is rising in the Velds.

Pictures of Veld grasslands of South Africa and of few animals
Chapter 10  Life in Deserts

Deserts are places where no vegetation can grow. Deserts can be sand deserts, or ice deserts, or rock deserts. Pictures of each are given on the next page.

Clothing of People in Thar Desert in Rajasthan
Ice Desert as in Himalayas. Sandy deserts such as Thar in Rajasthan
Rocky deserts in the Gulf countries

Give Reasons

9. There is scanty vegetation in the deserts

Vegetation depends upon the presence of water and moderate temperature. Deserts have extreme high or extreme low temperatures. In a hot desert water is scarce and is limited to a few places in the oasis. In a cold desert the land is frozen for greater part of the year. Due to scarcity of water and well as very high or very low temperature vegetation in the deserts is scanty.

10. People of the Sahara Desert wear heavy robes

Sahara Desert is a hot sandy desert located at the Equator in the northern parts of the African Continent. The Sun is directly overhead this region for greater part of the year. As such the climate is very hot during the daytime and very cool during the night. The people wear heavy robes in this
region to protect themselves from the high variation in the day and night temperatures.

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1. This is a line from a volume of poems by ‘Agyeye’, entitled ‘Sadaaneera’ (The Eternal Water). Agyeya is one of the best literary figures of modern Hindi Literature, and winner of several national awards.

2. Two good films on volcano can be seen – (1) Volcano (2) Dante’s Peak

3. The northern part of Aravallis extends from Mehrauli to Sohna. But most of these have been quarried for stones for the construction sector. A few hills are still visible while going to Sohna from Gurgon, in Mehrauli, and in the new JNU campus.

4. As the past, present, and future are ‘warped’, past practices continue even in the present. In India, Australia, and many African countries, Tribal life exists, mostly in forested areas and Bushlands. Tribes live by collecting edible leaves, roots and fruits from the forest, and by hunting birds and animals for food. They clear small parts of forest land and settle there for a few months. Such temporary human settlements are depicted in the village outside the forest in the movie ‘The Jungle Book’ where the ‘man cub’ sees the girl fetching water from the stream and follows her. One version of a seasonal temporary settlement is depicted in ‘The Ice Age’ . Here, the humans had moved south wards, by the elephant reaches the settlement with the human baby. In Pre historic times human, animals and birds shared the same ‘Environment’ and therefore, they all migrated as per season. Today, birds and animals continue to migrate as per weather conditions. Fishes also migrate. But humans migrate only in high mountainous zones during winter – in Jammu and Kashmir, several nomadic tribes still exist and they move towards the valley in winters. Jammu was the winter capital of the Kingdom of Jammu and Kashmir as Srinagar remained frozen for four months. In other parts of India, humans have changed their natural environment to create a ‘manmade environment’ in villages, towns, and cities. They travel across the world for work and tourism, but do not migrate as per change in season.

5. Today technology helps to construct larger structures made of ice. In the Bond movie ‘Die Another Day’ they depict an large hotel constructed from ice. The movie, in its first half shows the Equatorial climate region of Cuba and West Indies, and in its second half, it gives a good view of the polar region.