Appendix No. III

INSTRUCTIONAL MATERIAL
(Lessons, Transparencies, Diagrams and Maps)

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LESSON NO 1

TOPIC: LANDFORM

Advance Organiser

Landform is any feature of the earth's surface possesses a particular shape and form. Geomorphology is concerned with the study of landforms and their relation to each other. In general, there are four types of landforms such as mountain, plateau, plain and coastal plain. These landform's differ in structure and formation, their age, height and nature of the earth crust and consequently in the types of vegetation, animal kingdom, minerals, industries and vocation agriculture etc.

Instructional Objectives

After the instructions are over, students have studied the remedial material, they in their own words will be able to:

1. state the meaning of physiography and describe its types.
2. define mountain with examples.
3. explain the specific characteristics of mountain.
4. define plateau with examples.
5. explain the specific characteristics of plateau.
6. distinguish between mountain and plateau.
7. state the meaning of plain and coastal plain with examples.
8. explain the specific characteristics of plain and coastal plain.

Pre-Requisite Knowledge of students

It is assumed that the students can identify different types of landforms and know the difference between mountains and plateaus.
Remedial Instruction

Doubts of the students will be cleared following their identification on the basis of their performance in the formative evaluation. Students who made no error were asked to read the remedial material.

Instructional Aids

1. Transparency (1 A) showing the meaning and types of physiography.
2. Transparency (1 B) showing their diagrams of mountain, plateau, plain and coastal plain.
3. Transparency (1 C) map of physiography showing their landforms of the earth crust.
4. Overhead projector.
5. Chalk and blackboard.

Content Sequence

Physiography:

The physiographical features are unique and so are rocks, their age, structure and formation, being as widely divergent as they could be on one hand there are the vast swampy region of the sunderbans, an area of tidal water, whereas on the other hand are the parts of India in the hilly areas.

Physiographically, India can be divided into four parts, such as: Mountain, Plateaus, Plains and Coastal plains.

1. The mountains: The upward projection, having a height of above 1000 metres from the earth surface is called mountain. It usually possesses steep slopes with sharp ridges and one or more rocky peaks. Examples: (i) The Himalaya (ii) The Andes Mountain.

2. The plateaus: It is an evaluated plain crust with a steep height of at least
1000 metres and extended gentle slope on the other side. Examples (i) Deccan plateau (ii) Colorado plateau.

3. **The plains:** The landform made up of the fine silt usually down by the rivers from the mountain. The level landform having a height below 600 metres are called plains. In India these plains are brought down by the northern rivers from the Himalayan peaks. Examples: (i) The Ganga plain (ii) The Punjab - Haryana plain.

4. **The coastal plains:** The plateau of peninsular India is fringed with narrow coastal lowlands. Raised beaches at an altitude of 30 to 50 metres and wave-cut platforms above the high water mark these costs which have recently undergone the upliftment form the sea. The plains are washed by the Arabian Sea on the west, Bay of Bengal in the east and the Indian ocean touches the southern toe at Kanya Kumari. Examples (i) Netherland Coastal plain (ii) Jordan's valley plain.

**Instructional Process and Formative Question**

**Content Sequence**

In the present diagram, it can be observed that in the centre there is a picture of a globe. Look at the globe and examine the surface of the earth.

1. Is it all the same level?
2. How do you differentiate between sea and earth?
3. Can you divide earth surface above the sea level with respect to its height from the sea level?

Teacher puts these questions. Students respond to the best of their ability. Teacher analyses the responses and concludes.

Teacher infers that there are as many as four landforms. He picks up one landform i.e. mountain and defines it by specifying its height and puts up question
about the surface of the landform, namely mountain such as:

1. How many of you have seen mountains? Raise your hands.
2. How do you distinguish mountain from other earth surface.

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of mountain as the highest earth surface.

Teacher infers that there are as many as four landforms. He picks up one landform i.e. plateau. Defines it by specifying its height and puts up question about the surface of the landform, namely plateau such as:

1. How many of you seen a plateau? Raise your hands.
2. How do you distinguish plateau from mountain?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plateau as the highest earth surface.

He picks up plain. Defines it by specifying its height and puts up question about the surface of the landform, namely plain such as:

1. What is the similarities and difference between plain, plateau and mountain?
2. What is height of plain from the earth surface?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plain as the highest earth surface.

He picks up another landform i.e. coastal plain and defines by specifying its height and puts up question about the surface of the landform, namely coastal plain such as:

1. What is height of coastal plain from the earth surface?
2. What is the specific characteristics of the coastal plain?
3. What is similarity and difference between the coastal plain and plain?
4. How do you distinguish among the coastal plain, plain, plateau and mountain?

Teacher discussed with the students. He analyses the responses and presents the all inclusive summary of the coastal plains as the lowest earth surface.

Formative Evaluation

1. Tick Mark (✓) the one, you think is correct.

Mountains are special landforms with a height of

a) More than 1000 metres   b) Less than 1000 metres

b) Less than 1000 metres

2. Fill in the blanks:

On the basis of physiography in how many parts India is divided into ..................................................

a) 4   b) 5   c) 3   d) 6

Home Assignment

1. Read the chapter "Landform" from your geography text-book from pages 3 to 10.

2. Draw the diagram on your copy showing the landform features.

3. Read the instructional material.
LESSON NO 2

TOPIC: RIVER

Advance Organiser

River is a large stream of fresh water flowing downhill with in a channels to enter another river or a lake or sea. River join another river system or river network. India is fortunate in having several large rivers. Rivers constitute an extremely important natural resources as they form the basis of irrigation, domestic and industrial water supply, hydropower generation and inland water transport. In addition they provide fish and a variety of other animals.

Instructional Objectives

After the instructions are over, students have studied the remedial material, they in their own words will be able to:

1. define the source of river.
2. state the meaning of mountain river with examples.
3. describe the role of river action in mountain region.
4. define plateau river with example.
5. distinguish between mountain river and plateau river.
6. explain the formation of tributaries.
7. define plain river and coastal plain river with example.

Pre-Requisite Knowledge

It is assumed that the students can identify types of river and known the difference between river and canal.

Remedial Instruction

Doubts of the students will be cleared on the basis of their performance.
in the formative evaluation. Students who made no error were asked to read the remedial material.

**Instructional Aids**

1. Transparency (2 A) showing the meaning and types of river.
2. Transparency (2 C) map of rivers showing their tributaries.
3. Overhead projector.
4. Chalk and blackboard.

**Content Sequences**

**River**

A large stream of fresh water flowing downhill with in a channel to enter another river or a lake or sea. River join another river system or river network. Examples (i) The Ganga river (ii) The Yamuna river.

Physiographically, India can be divided into four river regions such as 1. Mountain river 2. Plateau river 3. Plain river 4. Coastal plain river.

1. **Mountain rivers:** The mountain rivers (the Bhagirathi, the Alaknanda, the Brahamputra, the Satluj and the Indus) were in existence even before the uplift of the Himalaya. These rivers originate in the Tibetan side beyond the high mountain peaks of the Himalaya. The river are perennial in nature. The mountain rivers are fed by the melting snow and glacier of the great Himalaya range. During the monsoon period, the Himalaya receive very heavy rainfall and the rivers discharge the maximum amount of water, causing frequent floods. The mountain rivers rise from the great Himalaya, Karakoram, Ladakh, Zanskar, Kailas and the Trans-Himalaya ranges and ultimately join together to form the three great river system such as: the Indus, the Ganga, the Brahamputra.
2. **Plateau rivers:** The peninsular rivers originate at much lower altitude than the Himalayan ones. The main watershed in the peninsular region is formed by the western ghats. Major river of the peninsula such as, the Mahanadi, the Godavari, the Krishna and the Cauvery etc. are west flowing rivers fall into the Bay of Bengal. The rivers are wide, fan shaped with conspicuous delta. The Narmada, the Tapti and the Sharavati are east flowing rivers and a large number of small rivers flow to the Arabian sea. These rivers are narrow, elongated catchments. Besides these, there are many rivers (the Chambal, the Kali, the Sind, the Parbati, the Betwa, the Damodar, the Son etc.) which originate in the Vindhyas and Satpuras, but flow north-east towards the Ganga. These rivers are characterised by seasonal flows. They are large in the rainy season but become insignificant during the dry season.

3. **Plain rivers:** The north plain is a riverine region bountifully endowed with the fertile soil, favourable climate, flat surface and slow moving rivers. All these factors have made this plain very important. An extensive system of irrigation, developed on the tributaries of the Satluj, the Ganga, the Jamuna and others. The northern plain are divided into two rivers system i.e. (i) The Indus in the west (ii) The Ganga-Brahmaputra in the east.

(i) The Indus basin is located in the states of Jammu and Kashmir, Himachal Pradesh and Punjab. Its main tributaries are the Satluj, Beas, Ravi, Chenab and Jhelam. The Indus plain has a very gentle slope. The rivers have made the plain very fertile (ii) The Ganga rises in Uttar Pradesh Himalaya at Gangotri and after reaching Hardwar, it enters the northern plains. The Ganga along its tributaries, the Kosi, the Gandak, the Ghaghara, the Ton and the Son etc. especially flow in northern plain. On its west lies the Yamuna which joint it at Allahabad. The Yamuna in turn is joined by the Chambal, Sind, Betwa and Ken. They all flow through the Malwa Plateau before entering into the plains.
4. The Coastal plain rivers: A number of river deltas occur on the east coast i.e. the Mahanadi, the Godavari, the Krishna, and the Cauvery, but none of the west. River Vaitarna and Ulhas drain flow in the Konkan coast. These end in creeks near the sea, the chief river sharavati flows in the Karnataka coast.

Instructional Process and Formative Question

Content Sequences

In the present chapter, teacher puts the following questions such as:

1. Name the rivers you have seen.
2. Name the other source of water other than river
3. How would you differentiate rivers from the other sources water?

Teacher infers that there are as many as four landform river systems. He picks up one system i.e. mountain river system. Defines it by specifying its origins and puts up questions about the mountain river system such as:

1. Have you seen origin of any mountain rivers? Raise your hands.
2. How do you distinguish mountain river from plateau river?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plateau river as its origin from mountains.

Teacher infers that there are as many as four river systems. He picks up another river i.e. plateau river. Defines it by specifying its origin and puts up question about plateau river system such as:

1. Have you seen origin of any plateau river? Raise your hands.
2. How do you distinguish plateau river and plain river?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plateau river as its origin from plateaus.
He picks up plain river. Defines it by specifying its origin and puts up questions about the plain river system such as:

1. How many of you have seen origin of plain river? Raise your hands.
2. What are similarities and differences between the plain river, the plateau river and mountain river system.

Teacher discusses with the students. He analyses the responses and present the all inclusive summary of plain river system as its origin from the plain.

He picks up another river system i.e. coastal plain river defines it by specifying its origin and puts up question about the coastal plain river system such as:

1. What are the characteristics of the coastal plain river?
2. What is similarity and difference between coastal plain river and plain river?
3. How do you distinguish among coastal plain river, plain river, plateau river, and mountain river?

Teacher discusses with the students. He analyses the responses and present the all inclusive summary of coastal plain river system as its origin from the plain.

Formative Evaluation

1. Tick Mark (√) the one, you think is correct.
   The rivers do not originate from:
   a) Mountainous peaks  b) Mountainous lakes
   c) Glacier  d) Plateau

2. Where does the river Brahmaputra originate?
   a) Alakhananda  b) Kailash
   c) Mansorver  d) Nepal
Home Assignment

1. Read the chapter, "River" from your geography text-book from pages 10 to 12.

2. Draw a map on your copy showing the origin of rivers.

3. Read the instructional material.
LESSON NO 3

TOPIC: CLIMATE

Advance Organiser

Climate is the average weather conditions and variations in these conditions in both space and time over a large area. Weather conditions over a specific length of time usually a period of at least 30 years, are taken into consideration. The main elements of climate are temperature, atmospheric pressure, wind and humidity (including precipitation).

Instructional Objectives

After the instructions are over, students have studied the remedial material, they in their own words will be able to:

1. state the meaning of climate and describe its types.
2. define mountain climate with examples.
3. distinguish between weather and climate.
4. define monsoon.
5. define plateau climate.
6. define plain climate.
7. define coastal plain climate.
8. distinguish between mountain climate and plain climate.

Pre-Requisite Knowledge of Students

It is assumed that the students can identify different types of climate and know the difference between weather and climate.

Remedial Instruction

Doubts of the students will be cleared on the basis of their performance.
in the formative evaluation. Students who made no error were asked to read the remedial material.

**Instructional Aids**

1. Transparency (3 A) showing the meaning and types of climate.
2. Transparency (3 C) map of climate showing the distribution of climatic regions.
3. Overhead projector.
4. Chalk and blackboard.

**Content Sequence**

**Climate:**

Climate is often defined as the average weather over a long period of time. Climate includes not only the average weather but also important extraordinary types of weather. The main elements of climate are temperature, atmospheric pressure, winds and humidity (including precipitation).

Physiographically, India can be divided into four climatic regions such as:

1. Mountain climatic region
2. Plateau climatic region
3. Plain climatic region
4. Coastal plain climatic region.

1. **The Mountain climate:** The north-eastern India falls under cold humid winter type with short summer type of climate. During this season high pressure prevails over the northern India. During this season north-east trade winds prevail over the country. They blow from the land to the sea over most parts of the country. The temperature goes on decreasing from south to north. The mean daily temperature remains below 20°C over most of northern India. The night temperature may be quite below the freezing point. In winter months temperature goes below 8°C.
2. **The Plateau climate**: Most of the peninsular plateau has tropical savanna type of climate (AW). The summer months are a period of rising temperature and falling air pressure in northern half of the country. The chief feature of its climate is the long dry period, average monthly temperature rising over 18°C, though maximum summer temperature may even go up to 46°C to 48°C. In winter the temperature does not go below 18°C.

3. **The Plain climate**: Most of the plain has tropical and sub-tropical steppe climate occurs over a broad crescent from Punjab to Kutch between the Thar desert to its west and more humid climate of the Ganga plain. The days, however, are generally warm and the nights are cold. During this season north-east trade winds prevail over the country. They blow from the land to the sea over-most part of the country. The winter temperature 12°C while the summer temperature in June 54°C. Dry and hot winds blow in the afternoon and very often they continue even up to midnight. These winds are known as Loo.

4. **The coastal plain climate**: The coastal plain climate is tropical rainforest climate is found in the west coastal plain and sahyadris. The temperature are high, not falling below 18.2°C even during winter and rising to 37°C in April and May.

**Instructional Process and Formative Question**

**Content Sequence**

In this chapter, teacher puts the following questions such as:

1. What is weather ?
2. What is difference between weather and climate ?
3. How climate are distributed in various landform ?
Teacher infers that there are as many as four climatic regions. He picks up one region i.e. mountain climatic region. Defines it by specifying its temperature and puts up question about the mountain climatic region such as:

1. Name the places where mountain climate prevails.
2. How much temperature decreases with the increase of 165 metre height?
3. What are the different forms of rains where mountain climate prevails?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of mountain climatic region.

Teacher infers that there are as many as four climatic regions. He picks up another region i.e. plateau climatic region. Defines it by specifying its temperature and puts up questions about plateau climatic region such as:

1. Name the places where plateau climate falls.
2. What are the characteristics of plateau climate?
3. In northern part of India, summers are very hot and winters are very cold. why?
4. How do you distinguish between plateau climate and mountain climate.

Teacher discusses with the students. He analysis the responses and presents the all inclusive summary of plateau climate.

Teacher infers that there are many as four climatic regions. He picks up another region i.e. plain climatic region. Defines it by specifying its temperature and puts up questions about plain climatic region such as:

1. Name the palces where plain climate exist.
2. What are the characteristics of plain climate?
3. How do you distinguish between mountain climate and plain climate?

4. What are the similarities between plain climate and plateau climate?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plain climatic region.

He picks up another climatic region i.e. coastal plain climatic region and defines it by specifying its temperature and puts up questions about coastal plain climatic region such as:

1. Name the places where coastal plain climate exist.

2. What are the similarities and differences between plain and coastal plain climate region?

3. Why the coastal region temperature are equal throughout year?

Teacher discusses with the students. He analyses the responses and present the all inclusive summary of coastal plain climatic region.

Formative Evaluation

1. Tick Mark (✓) the one, you think is correct.

   The monsoon starts retreating from India in

   a) Mid-September  b) Mid-March
   c) Mid-August     d) Late-October

2. The retreating south-west monsoon does not effect

   a) Tamil Nadu     b) Orissa      c) Andhra Pradesh   d) Uttar Pradesh

Home Assignment

1. Read pages 15 to 28 in your geography text book.

2. Draw a map on your copy showing the different climatic region.

3. Read the instructional material.
Advance Organiser

Water vapour condense on only big particles. If the process of condensation continues, the condensation also starts occurring on smaller particles. These particles float about in the air because they are not too heavy that they may fall in the form of rainfall. The total amount of precipitation melted snow, hail, dew and hoar frost.

Instructional Objectives

After the instructions are over, students have studied the remedial material, they in their own words will be able to:

1. state the meaning of rainfall and describe its types.
2. define mountain rainfall with examples.
3. explain the nature and processes of rainfall.
4. describe the characteristics of mountain rainfall.
5. state the meaning of plateau rainfall.
6. define the characteristics of plateau rainfall.
7. define the plain and coastal plain rainfall.
8. describe the characteristics of plain and coastal plain rainfall.

Pre-Requisite knowledge of Students

It is assumed that the students can identify different types of rainfall and know the nature and process of rainfall.
Remedial Instruction

Doubts of the students will be cleared following their identification on the basis of their performance in the formative evaluation. Students who made no error were asked to read the remedial material.

Instructional Aids:
1. Transparency (4 A) showing the meaning and types of rainfall.
2. Transparency (4 B) showing the diagram of orographic, conventional and cyclonic rainfall.
3. Transparency (4 C) map of rainfall showing the regions of rainfall on the earth surface.
4. Overhead projector
5. Chalk and blackboard.

Content Sequence

Rainfall

Humid air which rises expands and cools. When this air reaches a height where its water vapours are condensed, deposited on hygroscopic particles and are turned into water particles. These water particles are called cloud particles. The particles float about in the air because they are not too heavy that they may fall in the form of rainfall.

According to physiography, India can be divided into four regions of rainfall such as: 1. Mountain rainfall 2. Plateau rainfall 3. Plain rainfall and 4. Coastal plain rainfall.

1. Mountain rainfall: On the northern slopes the rainfall is scanty about 8 to 10 cm but western slopes enjoy heavy rainfall, of over 25 cm. The normal annual rainfall varies from about 160 cm. In Assam hills, very high rainfall (over 300 cm) is experienced in the southern slopes of the Khasi, Jaintia
hills of Assam, the southern slopes of the Assam Himalaya. Very low rainfall (Less than 20 cm.) in northern Kashmir. The south-west monsoon bring rain in this region. Orographic rainfall occurs in this region. The rainfall received from summer monsoon, and winters are practically dry.

2. **Plateau rainfall**: Rainfall, except in the south-eastern parts comes in summer. The retreating monsoon bring sufficient rain to Andhra Pradesh and Tamil Nadu coast. The average rainfall of the region is about 100 cm. The south-west monsoon bring rain to this region. The average rainfall is about 62 cm. but it increases to over 250 cm. in the east. The rainfall is mostly received from summer monsoon, and winters are practically dry. Conventional rainfall occurs in this region.

3. **Plain rainfall**: The annual rainfall varies from 35 to 64 cm. The average rainfall over the north Indian plains generally remains between 100 to 200 cm. during summer monsoon period. The rainfall average between 50 to 75 cm. and is received from south-west monsoon, very low rainfall (less than 20 cm.) in western Rajasthan. Cyclonic rainfall occurs in this region. The rainfall is also received from the south-west retreating monsoon.

4. **Coastal plain rainfall**: The eastern coastal of India, particularly in Tamil Nadu remains relatively dry during the south-west monsoon period. The generally heavy rain on the Coromandel coast. The annual average rainfall on the east coast 100 to 200 cm. while the annual average rainfall on the west coast 300 to 400 cm. Cyclonic rainfall occurs in this region.

**Instructional Process and Formative Question**

**Content Sequence**

In this chapter, teacher puts the following questions such as:

1. What is rainfall?
2. How rainfalls are distributed in various landforms?
3. What is the difference between humidity and rainfall?

Teacher infers that there are as many as four rainfall regions. He picks up one region i.e. mountain rainfall region. Defines it by specifying its moisture and puts up questions about the mountain rainfall region such as:

1. Name the places where mountain rainfall occurs.
2. What are the characteristics of mountain rainfall?
3. In northern part of India rainfall receives in summer but winters are dry. Why?

Teacher discusses with the students. He analyses the responses and presents the all-inclusive summary of mountain rainfall region.

Teacher infers that there are as many as four rainfall regions. He picks up another region i.e. plateau rainfall region. Defines it by specifying its water vapours and puts up questions about plateau rainfall region such as:

1. Name the places where plateau rainfall occurs.
2. What are the characteristics of plateau rainfall region?
3. How do you distinguish between plateau rainfall and mountain rainfall?

Teacher discusses with the student. He analyses the responses and presents the all-inclusive summary of plateau rainfall region.

Teacher infers that there are as many as four rainfall regions. He picks up another rainfall region i.e. plain rainfall region and defines it by specifying its water vapour and puts up questions about plain rainfall region such as:

1. Name the places where plain rainfall exist.
2. What are the characteristics of plain rainfall region?
3. How do you distinguish between mountain rainfall and plain rainfall?
4. What are the similarities between plain rainfall and plateau rainfall?
Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plain rainfall region.

He picks up another rainfall region i.e. coastal plain rainfall region. Defines it by specifying its moisture and puts up question about coastal plain rainfall such as:

1. Name of places where coastal plain rainfall exists.
2. What are the similarities and differences between plain and coastal plain rainfall region?
3. The south-west retreating monsoon brings heavy rainfall on the coastal region. why?
4. What are the characteristics of coastal plain rainfall region?

Teacher discusses with the student. He analyses the responses and presents the all inclusive summary of coastal plain rainfall region.

Formative Evaluation

1. Tick Mark (✓) the one, you think is correct.
   The place in India receiving the lowest rainfall is
   a) Leh  b) Jaisalmer  c) Bikaner  d) Jodhpur

2. Which of the following regions has highest variability of rainfall
   a) Gujarat  b) Kerala  c) West Bengal  d) eastern Uttar Pradesh

Home Assignment

1. Read the chapter "Rainfall" from your geography text book from pages 28 to 38.
2. Read the instructional material.
3. Draw a map on your copy showing variability of rainfall.
LESSON NO 5

TOPIC: SOIL

Advance Organiser

The surface material covering such of the earth is composed of mineral particles and humus water and air in which plants grow. Soil formation results from weathering process acting on (i) parent material that supplies minerals, and (ii) organic remains (humus) derived from vegetation. Usually, soil also contains water and air, which occupy pore spaces. Invertebrates living in the soil, especially earthworms, aid soil formation by mixing it. The character of a particular soil depends on such factors as its texture, structure and pH value.

Instructional Objectives

After the instructions are over, students have studied the remedial material, they in their own words will be able to:

1. state the meaning of soil and describe its types.
2. define mountain soil with examples.
3. describe the formation of soil.
4. describe the characteristics of mountain soil.
5. define plateau soil with examples.
6. describe the characteristics of plateau soil.
7. distinguish between mountain and plateau soil.
8. define plain and coastal plain soil.
9. distinguish between bhangar and khadar soil.

Pre-Requisite Knowledge of students

It is assumed that the students can identify different types of soil and know the difference between bhangar and khadar soil.
Remedial Instruction

Doubts of the students will be cleared following their identification on the basis of their performance in the formative evaluation. Students who made no error were asked to read the remedial material.

Instructional Aids

1. Transparency (5 A) showing the meaning and types of soil.
2. Transparency (5 C) map of soil showing the region of soils on the earth surface.
3. Overhead projector.
4. Chalk and blackboard.

Content Sequence

Soil

Rock waste is formed of the layers of the earth by the processes of weathering and erosion. This rock waste is found on the surface of the earth in a thin or thick layer. Rock waste in a soil which also contains decayed and living organisms, water, gas and minerals. Physical, chemical and biological activities take place in these layers. These factors constitute the soil formation.

According to physiography, India can be divided into four soil regions such as: 1. Mountain soil 2. Plateau soil 3. Plain soil, and 4. Coastal plain soil.

1. Mountain soil: On the mountain region different types of soils are found such as: Alluvial soil, tarai soil, mountain meadow soil, and podsolic soil. Alluvial soil occupy extensive tract of land in northern, north-eastern and north-western parts of India. Tarai soil cover area in Jammu and Kashmir, Uttar Pradesh and West-Bengal in the sub mountain tracts at the foot of the Himalaya. In West Bengal, these are mainly sandy raw humus and deep black in colours. The soil is generally covered by all grasses and shrubs;
under reclaimed conditions, good crops of paddy, wheat, soyabean and sugarcane are grown. Mountain meadow soil occurs above the timber line and below the snow-line in the Himalaya range in Jammu and Kashmir, Uttar Pradesh, Punjab, Assam, Arunachal Pradesh, Nagaland etc. These soils are suitable for growth of forests, potatoes and sub-tropical fruits. Podsollic soil cover in Jammu & Kashmir, Uttar Pradesh and certain parts of Kangra district of Himachal Pradesh. These soils have developed under coniferous vegetation. These soils are suitable for maize, wheat and orchards.

2. **Plateau soil**: On the plateau region different types of soils are found such as: red soil, black soil, the laterite soil etc. Red soil covers almost the whole of Tamil Nadu, Karnataka, Andhra Pradesh, south-east Maharashtra, eastern parts of Madhya Pradesh, parts of Orissa and Chotanagpur and Bundelkhand all of them lying on the periphery of plateau. Black soils are most typical of the Deccan trap region spread over north-west Deccan plateau and are made up of lava flows. The black soil are made of extremely fine i.e. clayey material. They are well known for their capacity to hold moisture. They are ideal for growing cotton. They covers the plateaus of Maharashtra, Saurashtra, Malwa and south Madhya Pradesh. Laterite soils are developed in the highland areas of the plateau. The laterite soils are commonly found in Karnataka, Kerala, Tamil Nadu, Maharashtra and Madhya Pradesh.

3. **Plain soil**: Alluvial soil, black soil, desert soil, saline and alkaline soils are found in plain area. Alluvial soil are found in Punjab, Haryana, Himachal Pradesh north-western parts of Delhi, Rajasthan and Gujarat. In fact the entire northern plains are made up of these soil. Black soils are found in Gujarat and southern part of Uttar Pradesh. Desert soils are found in Rajasthan, Haryana, and south Punjab laying between the Indus valley and the Aravallis. The Thar desert is also existing in this region. Saline
and alkaline soil are found in Uttar Pradesh, Haryana, Punjab and Rajasthan. These soils are known by different names such as reh, kallar, usar. These soils are product of arid or semi-arid climate.

4. Coastal plain soil: Laterite soil is a result of intensive leaching owing to heavy tropical rains. These soils spreading in western coastal region receive very heavy rainfall. These soils are found in small parts of Tamil Nadu and Orissa. Coastal soils vary in texture and structure east coast has riverine soils in the delta region as well as in areas where tidal waves and current have deposited silt and sand which are at places saline. Marshy soil are found in costal tracts are local variations well marked particularly in the delatic region. Alluival soil are found in along the coast of Kerala. They are referred to as coastal alluvium and in the deltas of Mahanadai, Godavari, Krishana and Cauvery as deltaic alluvium.

**Instructional Process and formative question**

In this chapter, teacher puts up the following questions such as

1. What is soil?

2. What is difference between khadar and bhangar soil?

   Teacher infers that there are as many as four soil regions. He picks up one region i.e. mountain soil region. Defines it by its colour, structure and puts up question about the mountian soil region such as:

   1. Name the places where mountain soils are found.

   2. What are the characteristics of mountain soil?

   3. Mountain soil is not good for agriculture. why?

   Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of mountain soil region.
Teacher infers that there are as many as four soil regions. He picks another region i.e. plateau soil region. Defines it by specifying its colour, structure, and puts up question about plateau soil region such as:

1. Name the places where plateau soils are found.
2. What are the characteristics of plateau soil?
3. How do you differentiate between plateau soil and mountain soil?
4. What are similarities between plateau soil and mountain soil?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plateau soil region.

Teacher infers that there are as many as four soil regions. He picks up another soil region i.e. plain soil region. Defines it by specifying its colour, texture, structure and puts up questions about plain soil regions such as:

1. Name the places where plain soil exists.
2. What are the characteristics of plain soil region?
3. How do you differentiate between mountain soil and plain soil?
4. What are the similarities between plain soil and plateau soil?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plain soil region.

He picks up another soil region i.e. coastal plain soil. Defines it by specifying its colour, texture, structure and puts up question about coastal plain soil such as:

1. Name the places where coastal plain soil exists.
2. What are the similarities and differences between plain soil and coastal plain soil?
3. What are the characteristics of coastal plain soil?

Teacher discusses with the students. He analyzes the responses and presents the all-inclusive summary of coastal plain soil.

**Formative Evaluation**

1. Tick Mark (✓) the one you think is correct.

   Alluvial soil in India is found in
   a) Desert soil  b) Red soil  c) Very rare soil  d) Most extensive soil

2. Fill in the blanks:

   Regur soil is also known as
   a) Red soil  b) Desert soil  c) Black soil  d) Laterite soil

**Home Assignment**

1. Read the chapter "Soil" from your geography textbook from pages 42 to 44.

2. Read the instructional material.

3. Draw a map on your copy showing the different regions of soil on the earth surface.
LESSON NO. 6

TOPIC: VEGETATION

Advance Organiser

Natural vegetation is the combined result of climatic soil and biotic factors of these, the most important is the climatic factors, which comprises temperature and moisture available. Temperature shows itself in the luxuriant growth of forest-big and small trees shrubs, climbers, parasites, etc. in height, density, variety of species and rate of growth.

Instructional Objectives

After the instructions are over, students have studied the prescribed material, they in their own words will be able to:

1. state the meaning of vegetation and describe its types.
2. describe vegetation distributed in various landforms.
3. define mountain vegetation with examples.
4. describe the characteristics of mountain vegetation.
5. define plateau vegetation with examples.
6. describe the characteristics of plateau vegetation.
7. define plain and coastal plain vegetation.
8. explain the characteristics of plain and coastal plain vegetation.

Pre-Requisite Knowledge of Students

It is assumed that the students can identify different types of vegetation and know the process of vegetation growth.

Remedial Instruction

Doubts of the students will be cleared following their identification
performance in the formative evaluation. Students who made no error were asked to read the remedial material.

Instructional Aids

1. Transparency (6 A) showing the meaning and types of vegetation.
2. Transparency (6 C) map of vegetation showing the regions of vegetation on the earth surface.
3. Overhead projector.
4. Chalk and blackboard.

Content Sequence

Vegetation

A type of vegetation that is more or less permanent by project of man’s activities over a long period. Vegetation is governed most strongly by regional climatic factors but local variation of soil or topography produces different climate. Vegetation consists of long-lived and dominant climax species (e.g. oak trees in deciduous forest). It is equilibrium with its physical and biotic environment, and in particular demonstrates an ecological balance between production and consumption.

According to physiography, India can be divided into four vegetation regions, such as: 1. Mountain vegetation 2. Plateau vegetation 3. Plain vegetation 4. Coastal plain vegetation.

1. Mountain vegetation: The mountain region from Kashmir to Arunachal Pradesh through Nepal, Sikkim, Bhutan, Meghalaya and Nagaland. Different types of vegetation are developed in this zone such as: deodar, blue-pine, chair, silver-fir, cypress, bamboos and ferns. Deodar grows in the Himalaya at elevation varying between 1670 and 2500 metres from Garhwal westwards through Jaunsar, the Punjab hills and Kashmir. It is largely used for railway
sleepers and building. Blue-pine grows along the entire length of the Himalaya from chumbi valley to Tibet eastwords. It grows at elevation between 1830 to 3700 metres. The wood is pink in colour, moderately hard and of good quality. It is used for railway sleepers. Chir occurs in the Himalaya from Bhutan westward at an elevation between 914 to 1830 metres. This tree is largely developed in Kashmir, Punjab and Uttar Pradesh. The wood is light reddish brown, moderately hard and is largely used for making tea chests. Silver-fir is found in the north-western and eastern Himalaya at an elevation from 2290 to 3050 metres. The wood is soft but very durable. It is mostly used for planking, packing boxes, wood pulp, paper and match sticks. Cypres is mostly found in Garhwal and Kamaon hills. It is durable and hard is used for marketing furniture. Bamboos and ferns are also developed in this zone. They do not shed their leaves annually and hence are evergreen.

2. **Plateau vegetation**: Deccan plateau specially the slopes of western ghats and other highlands are covered with teak and softwoods. More valuable forests of the ghats are the varied mixed deciduous forest rich in evergreens like ebony, mahogany, gum-kino, cedar, rosewood, cane, bamboos, sal, sandalwood, sisoo etc. tall grasses, shrubs and herbs which provide commercial timber and fodder respectively.

3. **Plain vegetation**: The Indus plain region comprises the plains of Punjab, western Rajasthan and northern Gujarat. The region is dry and hot, and support scanty natural vegetation. The Gangetic plain region covers the area from Aravalli ranges to Bengal and Orissa. A greater part of the area is alluvial plain and is under cultivation of wheat, sugarcane and rice. Only small areas support forests of widely differing types. Sundari is extensively found in the Ganga delta, and Sunderbans. The wood is hard, tough, strong and durable. It is used in boat building. Neem kikar, babul trees are also found in this region.
4. **Coastal plain vegetation**: This region is also rich in forest vegetation. The Andaman region comprises the Andaman and Nicobar group of Island. It abounds in evergreen, semi-evergreen, mangrove beach and diluvial forests. Hardwood species like sundri occupy the relatively lower section while higher ground supports pine, canes and palms. The wood of this forest is often used for fuel and boat making.

**Instructional Process and formative question**

**Content sequence**

In this chapter, teacher puts the following questions such as:

1. What is vegetation?
2. How vegetation are distributed in various landforms?

Teacher infers that there are as many as four vegetation regions. He picks up one region i.e. mountain vegetation region. Defines it by specifying its height density and rate of growth and puts up questions about the mountain vegetation region such as:

1. Name the places where mountain vegetation are found.
2. What are the characteristics of mountain vegetation?
3. Vegetation is very high on the mountain. why?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of mountain vegetation region.

Teacher infers that there are as many as four vegetation regions. He picks up another region i.e. plateau vegetation region. Defines it by specifying its height and rate of growth and puts up questions about plateau vegetation region such as:

1. Name the places where plateau vegetation are found.
2. What are the characteristics of plateau vegetation?
3. How do you differentiate between plateau vegetation and mountain vegetation?

4. What are the similarities between plateau vegetation and plain vegetation?

Teacher discusses with the student. He analyses the responses and presents the all inclusive summary of plateau vegetation region.

Teacher infers that there are as many as four vegetation regions. He picks up the another region i.e. plain vegetation region. Defines it by specifying its height, density and puts up questions about plain vegetation region such as:

1. Name the places where plain vegetation exist.

2. What are the characteristics of plain vegetation?

3. How do you distinguish between mountain vegetation and plain vegetation?

Teacher discusses with the students. He analyses the responses and presents all inclusive summary of plain vegetation region.

He picks up another vegetation region i.e. coastal plain vegetation. Defines it by specifying its height, density, rate of growth and puts up questions about coastal plain vegetation such as:

1. Name the places where coastal plain vegetation are found.

2. What are the similarities and differences between plain vegetation and coastal plain vegetation?

3. What are the characteristics of coastal plain vegetation?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of coastal plain vegetation region.
Formative Evaluation

Tick Mark (✓) the one, you think is correct.

1. Coniferous forest in India are found in:
   a) The Himalayas   b) Nilgiri
   c) Annamalai       d) Central India

2. The type of forest which occupy the western ghats
   a) Sandal         b) Evergreen    c) Mangrove      d) Teak

Home Assignment

1. Read the chapter "Vegetation" from your geography text book from pages 34 to 38.

2. Read the instructional material.

3. Draw a map on your copy showing the different regions of vegetation.
TOPIC: ANIMAL KINGDOM

Advance Organiser

India's animal wealth is both large and varied. The country has the world's largest number of livestock and its ranks high in sericulture and fisheries. Animals render extremely useful service in our transport system and agriculture animal products from essential items in the diet of millions of peoples. Several industries are solely dependent on animal products for raw material.

Instructional Objectives

After the instructions are over, students have studied the remedial material, they in their own words will be able to:

1. state the meaning of animal kingdom and distributed various landforms.
2. define mountain animal with examples.
3. explain the function of mountain animals
4. define plateau animal with examples.
5. describe the characteristics of plateau animals.
6. define plain and coastal plain animals
7. explain the function of plain and coastal plain animals.

Pre-Requisite Knowledge of Students

It is assumed that the students can identify different types of animal and understand that they are distributed over various landforms.

Remedial Instruction

Doubts of the students, will be cleared following their identification on the
basis of their performance in the formative evaluation. Students who made no error were asked to read the remedial material.

**Instructional Aids**

1. Transparency (7 A) showing the meaning and types of animals.
2. Transparency (7 C) map of animals showing their distribution over various landforms.
3. Overhead projector.
4. Chalk and blackboard.

**Content Sequence**

**Animal Kingdom**

Animals are reared on a commercial grazing. Commercial grazing is organised on a scientific basis and great emphasis is laid on breeding, genetic improvement, disease control and health care of animals. The animals are kept in sheds during the night. Several industries are solely dependent on animal products for raw material.

Physiographically, India can be divided into four animal regions such as:

1. Mountain animals
2. Plateau animals
3. Plain animals
4. Coastal plain animals.

**1. Mountain animals**

The mountain region is very rich in animals. In the front of the outer Himalaya lies the tarai-jungle. The jungles are the homes of many wild beastes like yak, leopard, bear and sambhar on the west, panthers and tigers in the central part and elephants, tigers and mithuns on the east. These attract a large number of hunters and provide good game. On the lower slopes of the Himalaya (particularly in Kashmir and Himachal Pradesh) green pastures have made sheep and goat rearing an important occupation of Gadi shepherd. There are some animals which are used as beasts of burden in specific regions. Horses, poines and mules are used in hilly terrain for carrying human being and material. Bee-keeping is also done.
2. **Plateau animals**: The plateau animals are found in different types of regions such as; the Nilgiri Tahr favours the more precipitous hill tops of the range in Kerala and Tamil Nadu, the black monkeys (Nilgiri Langur) are found in the forests of Tamil Nadu and Kerala and the lion-tailed macaque in the Nilgiris. These forests have also been the ancient homes of wild elephants, gaur, sambhar, chital, barking deer, mouse-deer, wild-pig, leopards and tigers; and the diurnal giant squirrel and the large brown flying squirrel. Bird life, python, pond-tortoises muggar are also found.

3. **Plain animals**: The plain animals are found in different types of regions such as: Rajasthan, Haryana, Punjab, Himachal Pradesh. Buffaloes are found in Uttar Pradesh, Rajasthan, Haryana, Punjab. Cows are found in Uttar Pradesh plains and Rajasthan, goats are found in Rajasthan, Uttar Pradesh, Punjab, Gujarat; camel in Rajasthan, Punjab, Gujarat and Uttar Pradesh.

4. **Coastal plain animals**: There are different types of fishes found in coastal plains such as: Bombay duck, pomfret, jewfish, Indian salmon, tunnies, grey mullet, mackerel, eel and shark, sardine etc.

**Instructional Process and Formative Question**

**Content Sequence**

In this chapter, teacher puts the following questions such as:

1. What is animal kingdom?
2. How animals are distributed in various landforms?
3. What are the differences between Inland fisheries and Marine fisheries?
4. What is the difference between Tiger and Lion?

Teacher infers that there are as many as four animal regions. He picks up
one region i.e. mountain animal region. Defines it by specifying its mammals and puts up questions about the mountain animal region such as:

1. Name the places where mountain animals are found.
2. What are the characteristics of mountain animals?
3. How do you differentiate between mountain animals and coastal plain animals?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of mountain animal region.

Teacher infers that there are as many as four animal regions. He picks up another region i.e. plateau animal region. Defines it by specifying its mammals and puts up questions about plateau animal region such as:

1. Name the places where plateau animals are found.
2. What are the characteristics of plateau animals?
3. How do you differentiate between plateau animals and mountain animals?
4. What are the similarities between plateau animals and plain animals?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plateau animal region.

Teacher infers that there are as many as four animal regions. He picks up one region i.e. plain animal region. Defines it by specifying its mammals and puts up questions about plain animal region such as:

1. Name the places where plain animals exist.
2. What are the characteristics of plain animals?
3. How do you differentiate between mountain animals and plain animals?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plain animal region.
He picks up another animal region i.e. coastal plain animal region. Defines it by specifying its mammals and puts up questions about coastal plain animal such as:

1. Name the places where coastal plain animals are found.
2. What are the characteristics of coastal plain animals?
3. What are the similarities and differences between plain animals and coastal plain animals?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of coastal plain animal region.

**Formative Evaluation**

Tick Mark (√) the one, you think is correct.

1. What does the word 'murrah' refer to?
   a) a breed of cattle  b) a breed of buffalo  c) a breed of goat  d) a breed of sheep

2. Where is the wild ass sanctuary?
   a) Uttar Pradesh  b) Assam  c) Rajasthan  d) Gujarat

3. Where is the home of the Asiatic Lion?
   a) Gir national park  b) Dudhwa national park  c) Kanha national park  d) Corbett national park

**Home Assignment**

1. Read the chapter "Animal Kingdom" from your geography text book from pages 38 to 42.
2. Draw a map on your copy showing the animals on various landforms.
3. Read the instructional material.
LESSON NO. 8

Topic: Agriculture

Advance Organiser

The cultivation of soil in order to grow and rear livestock. The essential purpose of agriculture is the production of food from the land for human or animal consumption. It is agriculture, which supplies not only foodgrains, beverages and nutritious food like milk and eggs but also sustains a large number of industries. Agriculture is the main source of raw material for India's leading industries, providing employment to a vast number of people in the village and town. It also provides a large part of the market for industrial goods.

Instructional Objectives

After the instructions are over, students have studied the remedial material, they in their own words will be able to:

1. state the meaning of agricultural crops.
2. explain the agricultural crops in various landforms.
3. distinguish between rabi and kharif crops.
4. define mountain crops with examples.
5. describe the characteristics of mountain crops.
6. state the meaning of plateau crops.
7. describe the importance of plateau crops.
8. define plain and coastal plain crops.
9. describe the characteristics of plain and coastal plain agricultural crops.

Pre-Requisite Knowledge of Students

It is assumed that the students can identify different type of agricultural crops and know the difference between rabi and kharif crops.
Remedial Instruction

Doubts of the students will be cleared following their identification on the basis of their performance in the formative evaluation. Students who made no error were asked to read the remedial material.

Instructional Aids

1. Transparency (8 A) showing the meaning and types of agricultural crops.
2. Transparency (8 C) map of agricultural crops showing the distribution in various landforms.
3. Overhead projectors
4. Chalk and blackboard.

Content Sequence

Agriculture

The cultivation of the soil in order to grow crops and rear livestock. The essential purpose of agriculture is the production of food from the land for human or animal consumption.

Physiographically, India can be divided into four regions of agricultural crops such as: 1. Mountain agricultural crops 2. Plateau agricultural crops 3. Plain agricultural crops 4. Coastal plain agricultural crops.

1. Mountain agricultural crops: There are different types of agriculture found in the Himalayan region. The cultivation land is very limited for want of even land, and even this is fragmented. Level land being scarce, the people have developed what is called terraced cultivation on hilly slopes at different levels, especially in the western and central portion while jhuming or shifting cultivation is practised in Arunachal Pradesh, Tripura, Manipur, Mizoram, etc., both of which systems involve strenuous labour. Rice madua are the staple crops though mize, barely, wheat, potatoes, chillies, tobacco
and ginger are also grown in some places as in the valley of Kashmir and Kathmandu, Kulu and Kangra valley, Sikkim and Darjeeling. Opium, poppy and tea is grown in the hilly regions of Assam and the eastern frontier hill areas. A wide variety of fruits is grown over this region, especially in Kashmir, Kumaon hill district, and in Assam. In Kashmir, fruits like apple, pears, grapes, mulberry, walnut, cherries, peaches, apricot, raspberry are grown. In Assam, the most important fruits like oranges, pine-apple and papaya are grown.

2. **Plateau agricultural crops**: A greater part of the north-west plateau is covered with basaltic lava which being rich in iron, is conducive to production of cotton; while laterite soils give the production of tea, rubber, coffee and millets, coffee plantation of Wynnaad, and the eastern slopes of the Nilgiris; tea estates, rubber plantations of kerala and karnataka; and cinchona and plantation of thistle Australian wattle and eucalyplus arround Ooty are noteworthy. Tobacco, grounds and oilseeds are abundantly grown. The low-lying plains area of the peninsula is important for growing rice, coconut, areca palms, sago and a variety of tropical fruits (mangoes, pine-apples, bananas) are also grown.

3. **Plain agricultural crops**: The plains have a fertile soil and slow moving perennial water courses and favourable climate and they are, therefore, the great agricultural tracts of the country, raising bumper crops of rice, wheat, oilseeds, sugarcane, tobacco, jute, cotton, millets, gram and groundnuts.

4. **Coastal plain agricultural crops**: The coastal region produces black pepper, chillies, ginger and cardamom on the west coast and rice arecanut, palms and coconuts on the east coast.

**Instructional Process and formative questions**

**Content Sequence**

In this chapter, teacher puts the following questions such as:
1. What is agriculture?

2. How do you distinguish between food crops and cash crops?

Teacher infers that there are as many as four agricultural regions. He picks up one region i.e. mountain agricultural region. Defines it by specifying its raw materials and puts up questions about the mountain agricultural region such as:

1. Name the places where mountain agricultural crops are found.

2. What are the characteristics of mountain agricultural crops?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of mountain agricultural region.

Teacher infers that there are as many as four agricultural regions. He picks up another region i.e. plateau agricultural region. Defines it by specifying its raw material and production and puts up questions about plateau agricultural region such as:

1. Name the places where plateau agricultural crops are found.

2. What are the characteristics of plateau agricultural crops?

3. How do you distinguish between plateau agricultural crops and mountain agricultural crops?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plateau agricultural region.

Teacher infers that there are as many as four agricultural regions. He picks up another region i.e. plain agricultural region. Defines it by specifying its raw material and production and puts up questions about plain agricultural region such as:

1. Name the places where plain agricultural crops are practiced.

2. What are the characteristics of plain agricultural crops?
3. How do you distinguish between mountain agricultural crops and plain agricultural crops?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plain agricultural region.

He picks up another agricultural region i.e. coastal plain agricultural region. Defines it by specifying its raw material and production and puts up question about coastal plain agricultural region such as:

1. Name the places where coastal plain agricultural crops are found.
2. What are the characteristics of coastal plain agricultural crops?
3. What are the similarities and differences between plain agricultural crops and coastal plain agricultural crops?

Teacher discussed with the students. He analyses the responses and presents the all inclusive summary of coastal plain agricultural region.

Formative Evaluation

1. Tick Mark (✓) the one, you think is correct.

   Tea needs:
   a) Warm and moist climate  b) Hot climate
   c) Cool climate  d) None of these

2. Cotton's largest producer in India is:
   a) Maharastra  b) Punjab  c) Uttar Pradesh  d) Gujarat

3. Which State is the leading in wheat production?
   a) Punjab  b) Haryana  c) Madhya Pradesh  d) Uttar Pradesh
Home Assignment

1. Read the chapter "Agriculture" from your geography text book from pages 71 to 95.

2. Draw a map on your copy showing the different regions of agricultural crops.

3. Read the instructional material.
LESSON NO.9

TOPIC : MINERAL AND POWER RESOURCES

Advance Organiser

A naturally occurring substance having a definite chemical composition and atomic structure and formed by inorganic processes. Rocks are made up of various combination of minerals. Some minerals form a series in which there is gradual replacement of one element by another e.g. the feldpars. The most common mineral in rocks is quartz.

Instructional Objectives:

After the instructions are over, students have studied the remedial material, they in their own words will be able to:

1. define minerals with examples.
2. describe the minerals as distributed in various landforms.
3. state the meaning of mountain minerals with examples.
4. describe the importance of mountain minerals.
5. define plateau minerals with examples.
6. describe the characteristics of plateau minerals.
7. describe the plain and coastal plain minerals.
8. explain the characteristics of plain and coastal plain minerals.

Pre-Requisite Knowledge

It is assumed that the students can identify different types of minerals and know the mineral as distributed in various landforms.
Remedial Instruction

Doubts of the students will be cleared following their identification on the basis of their performance in the formative evaluation. Students who made no error were asked to read the remedial material.

Instructional Aids

1. Transparency (9 A) showing the meaning and types of mineral.
2. Transparency (9 C) map of mineral showing the distribution in various landforms.
3. Overhead projector.
4. Chalk and blackboard.

Content Sequence

Mineral and Power Resources

Minerals are very important for the growth of industry of any country. Mineral in India are unequally distributed. They are grouped in certain areas. For industrial and agricultural prosperity, it is essential to find out all available resources of power.

Physiographically, India can be divided into four mineral regions of such as: 1. Mountain minerals 2. Plateau minerals 3. Plain minerals and 4. Coastal plain minerals.

1. Mountain minerals: The Himalayan region contains commercially valuable minerals. Copper, lead, zinc, bismuth, antimony, nickel, cobalt and tungsten are known to occur in both the eastern and western Himalaya and more than 100 different localities. The Himalaya promise gold, silver, and precious and semi-precious stone (including sapphires, beryl and kynites, limestone, bauxite, gypsum, bentonite and magnesite. Coal and petroleum are other minerals fuels founds in this region.
2. **Plateau minerals**: The plateau region is found a great variety of mineral resources associated with the terrain of Bihar, Orissa, Madhya Pradesh and the south-eastern Rajasthan. These contain concentration of ore deposits, viz, manganese, iron and copper, ore, bauxite, chromium, mica, rock phosphate and over three fourth of India’s bitumenous coal reserve. Karnataka and Andhra Pradesh produce gold, iron, chromium and porcelain clay. Manganese, diamond, coal, slates, shale, sandstone, marbles, limestone are found in Madhya Pradesh.

3. **Plain minerals**: The plain region such as Punjab, Haryana, Uttar Pradesh and Gangetic West-Bengal are very poor in minerals resources. Rajasthan produces lead, zinc, mica, copper, rock phosphate etc. The plain regions are also produce the gypsum, limestone and dolomite etc.

4. **Coastal plain minerals**: The coastal plain area are very poor in mineral resources. Salt is produced all along the coast line, particularly in Gujarat, Maharashtra, Goa, Karnataka, Kerala on the west and Orissa, Andhra Pradesh and Tamil Nadu on the east. Bauxite is also produced on the coastal tract of Gujarat. Petroleum are found in coastal area of Tamil Nadu Andhra Pradesh, Kerala and Andaman-Nicobar coastal basin.

**Instructional process and formative question**

**Content Sequence**

In this chapter, teacher puts the following questions such as:

1. What is mineral?
2. What is difference between mineral and power resources?
3. How minerals are distributed in various landforms?

Teacher infers that there are as many as four mineral regions. He picks up one region i.e. mountain minerals region. Defines it by specifying its chemical
composition and atomic structure and puts up questions about the mountain mineral region such as:

1. Name the places where mountain minerals are found.
2. What are the characteristics of mountain minerals?
3. Less quantity of minerals are found on the mountain region. why?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of mountain minerals region.

Teacher infers that there are as many as four mineral regions. He picks up another mineral region i.e. plateau minerals region. Defines it by specifying raw material and production and puts up questions about plateau minerals such as:

1. Name the places where plateau minerals are found.
2. What are the characteristics of plateau minerals?
3. How do you distinguish between plateau minerals and mountain minerals?
4. What are the similarity between plateau minerals and plain minerals?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plateau mineral region.

Teacher infers that there are as many as four mineral regions. He picks up another region i.e. plain minerals region. Defines it by specifying its raw material and production and puts up questions about plain mineral region such as:

1. Name the places where plain minerals are found?
2. What are the characteristics of plain minerals?
3. What are the differences between plain minerals and plateau minerals?
4. What are the similarity between plain minerals and mountain minerals?

   Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plain mineral region.

   He picks up another region i.e. costal plain minerals region. Defines it by specifying its raw material and production and puts up questions about coastal plain minerals such as:

1. Name the places where coastal plain minerals are found.
2. What are the characteristics of coastal plain minerals?
3. What are the similarities and differences between coastal plain minerals and plain minerals?
4. What are the differences between coastal plain minerals and plateau minerals?
5. What are the similarities between coastal plain minerals and mountain minerals?

   Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of coastal plain minerals region.

Formative evaluation

   Tick Mark (✓) the one, you think is correct.

1. The first metal to be extensively used by the people in India was:
   a) Bronze  b) Copper  c) Iron  d) Lead

2. Which of the following is the largest producer of iron:
   a) Madhya Pradesh  b) Orrisa  c) Bihar  d) Rajasthan
Home Assignment

1. Read the chapter 'Mineral and Power Resources' from your geography textbook from pages 54 to 66.

2. Read the instructional material.

3. Draw a map on your copy showing the different regions of mineral and power resources.
LESSON NO. 10

TOPIC : INDUSTRIES

Advance Organiser

Economic activity that is concerned with the production of goods, extraction of mineral, or the provision of service. In a narrow sense industry is confined to the production of goods i.e. manufacturing industry. In a wider sense it is used to describe the service industries such as tourism, banking and transport as well as coal-mining, oil-drilling, building and contracting.

Instructional Objectives

After the instructions are over, students have studied the remedial material, they in their own words will be able to:

1. define industries.
2. describe the industries as distributed in various landforms.
3. define mountain industries with examples.
4. explain the importance of mountain industries.
5. state the meaning of plateau industries with examples.
6. describe the function of plateau industries.
7. define plain and coastal plain industries with examples.
8. describe the characteristics of plain and coastal plain industries.

Pre-requisite knowledge

It is assumed that the students can identify different types of industries and know the industries as distributed in various landforms.

Remedial instruction

Doubts of the students will be cleared following their identification on the
basis of their performance in the formative evaluation. Students who made no error were asked to read the remedial material.

**Instructional aids**

1. Transparency (10 A) showing the meaning and types of industries.
2. Transparency (10 C) map of industries showing their distribution in various land forms.
3. Overhead projector.
4. Chalk and blackboard.

**Content sequence**

**Industries**

The term industry refers mainly to manufacturing activity. The term "industrialisation" is used to designate the growth of manufacturing industry. Agriculture, mining and services are excluded from it. Development of processing and manufacturing industries depends upon raw materials derived from agriculture, mining, forestry, pastoral, fishing and other activities.

Physiographically, India can be divided into four industrial regions such as: 1. Mountain industries 2. Plateau industries 3. Plain industries and 4. Coastal plain industries.

1. **Mountain Industries**: There is minor industries in this region. It has woollen mills in Srinagar and Kulu, silk & synthetic fibres industry in Jammu and Kashmir, sugar and paper industries in Assam, cement Industry in Wugan in Jammu and Kashmir, tea making industries in Assam.

2. **Plateau industries**: plateau region is noted for its mining and metal industries, because of the presence in large quantity of minerals in the plateau region. All these have given rise to heavy industries such as iron
and steel industries, automobiles, aircraft industries, ship building, locomotives industries, silk industries, rayon cotton textile, chemicals, leather, Hindustan machine tools, transport, food industry, woollen, cement, paper and jute industries are found in this region.

3. **Plain industries**: The plain region covers the largest industrial cities in India. It has cotton textile, glass chemicals engineering industries, leather goods, woollen etc. Saharanpur and Yamunanagar have paper mills. Modinagar is a large industrial centre with textile, soap and engineering industrial and Modipuram has an automobile tyre producing factory. Ghaziabad is a large centre of agro-industries including cotton, sugar and Faridabad of engineering industries. Ferozabad is a leading centre of glass works. There are sugar factories situated practically on all major stations along the Delhi-Meerut-Saharanpur railway line. Mathura has a large oil refinery. Besides availability of cheap raw materials like sugarcane, raw cotton, sand and wheat bran, a large marked in the main stimulus for the industrial development in the area.

4. **Coastal plain industries**: The coastal belt of Kerala has a heavy concentration of coir, copra and fish caning industries. The coastal regions of Gujarat and Tamil Nadu which produce bulk of salt in the country have also developed large scale production of inorganic chemicals. Noonamati and Bongaigaon refineries are situated close to the petroleum producing areas and Mathura and Barauni refineries in the interior away from the coast and oil-producing areas.

The discovery and production of oil in the Gulf of Combay area, the establishment of an industrial complex of petro-chemical industrial area around Ankleshwar near Baroda and the new important port of Kandla on Gujarat coast have rapidly industrialised part of India.
Instructional process and formative questions.

Content Sequence

In this chapter, teacher puts up the following questions such as:

1. What is Industry?
2. What are differences between the agro-based industries and mineral-based industries?
3. How industries are distributed over various landforms?

Teacher infers that there are as many as four industrial regions. He picks up one region, i.e., mountain industrial region. Defines it by specifying its production and manufacturing and puts up questions about mountain industrial region such as:

1. Name the places where mountain industries exist.
2. What are the characteristics of mountain industries region?
3. Minor industries are found on the mountain region. Why?

Teacher discusses with the students. He analyses the responses and presents the all-inclusive summary of mountain industrial region.

Teacher infers that there are as many as four industrial regions. He picks up another region, i.e., plateau industrial region. Defines it by specifying its production and manufacturing material and puts up question about plateau industrial region such as:

1. Name the places where plateau industries region exists.
2. What are the characteristics of plateau industries region?
3. How do you distinguish between plateau industries and mountain industries.
Teacher infers that there are as many as four industrial regions. He picks up another region, i.e. plain industrial region. Defines it by specifying its production and manufacturing material and puts up questions about plain industrial region such as:

1. Name the places where plain industries are located.
2. What are the characteristics of plain industries?
3. What is the difference between plain industries and plateau industries?
4. What are the similarities between plain industries and mountain industries?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of plain industrial region.

He picks up another industrial region i.e. coastal plain industrial region. Defines it by specifying its production and manufacturing material and puts up questions about coastal plain industrial region such as:

1. Name the places where coastal plain industries are located.
2. What are the similarities and differences between coastal plain industries and plain industries?
3. What are the characteristics of coastal plain industries?

Teacher discusses with the students. He analyses the responses and presents the all inclusive summary of coastal plain industries region.

**Formative evaluation**

Tick Mark (✓) the one, you think is correct.

1. Tata iron and steel industry in located at:
   a) Calcutta  b) Jamshedpur  c) Burnpur  d) Kulti
2. The first cement factory was built in India is 1904 at
   a) Madras  b) Bangalore  c) Kanpur  d) Calcutta
Home Assignment

1. Read the chapter 'Industries from your geography text book from pages 96 to 110.

2. Read the instructional material.

3. Draw a map on your copy showing the different region of Industries.