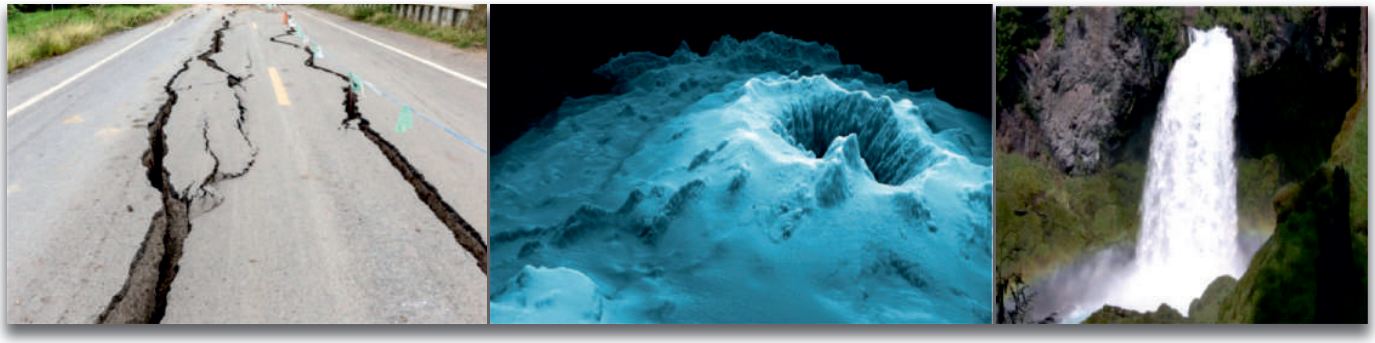
GEOGRAPHY

3

Our Changing Earth



"A major **earthquake** shook a part of the Earth causing extensive destruction. A **volcanic eruption** engulfed a part of a town with spread of red-hot lava. The killer waves of **tsunami** submerged and wiped off some coastal areas."

You must have read in newspapers or seen on the television about nature's fury. These are **sudden changes** that occur on the earth's surface. These are due to sudden movements that originate within the earth.

On the other hand, the long geological history of the Earth, shows that mountains and plateaus are rising, plains are being built up and sea-floor is spreading. As a result, different landforms are being formed.

All these make it clear that our planet Earth is dynamic in nature. It behaves like 'a living, mobile thing'. In the previous chapter you studied that the face of the Earth is continuously changing due to internal and external forces. Millions of years of geological change has modelled the present face of the Earth as we see today. Even now as you are reading this chapter, some changes are taking place in some part of the Earth. So, there is a continuous evolution of the landforms on the Earth.

Word Origin

Endo (inside) + genic (origin) → Endogenic

Exo (outside) + genic (origin) → Exogenic

The evolution of landforms takes place due to two types of forces, i.e., endogenic forces and exogenic forces.

DID YOU KNOW?

Three types of earthquake waves are :

- P waves : longitudinal
- S waves : transverse waves
- L waves : surface waves

ENDOGENIC FORCES

During the past fifty years, modern technology has provided much new information. Earth scientists have put forward the view that the Earth's crust is not a continuous block. It consists of several large and small, rigid, irregularly shaped plates (slabs) which carry continents and the ocean floor. These slabs are moving or drifting in relation to each other by about 2.5 cm to 5 cm each year. These crustal slabs are called **tectonic** or **lithospheric plates.** The **heat** and **pressure** from the Earth's **molten magma** causes **convection currents**. This generates

forces that cause movement of the plates. This theory is known as **'Plate tectonics'**.

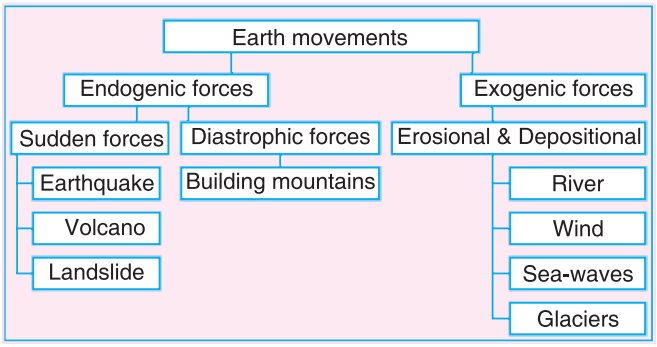


Fig. 3.1 : Evolution of Landforms

As these crustal plates move, they push together, pull apart and slide past each other. Areas at the junction of converging and sliding plates are zones of increased Earth movements. Sometimes the tension within the Earth is released on the surface as vibrations. These internal or **Endogenic forces** may be **sudden** and **violent** and the result is an **earthquake**, volcanic activity or a landslide.

These internal or tectonic movements originating from the interior of the Earth are termed as **Endogenic Movements** caused by endogenic forces.

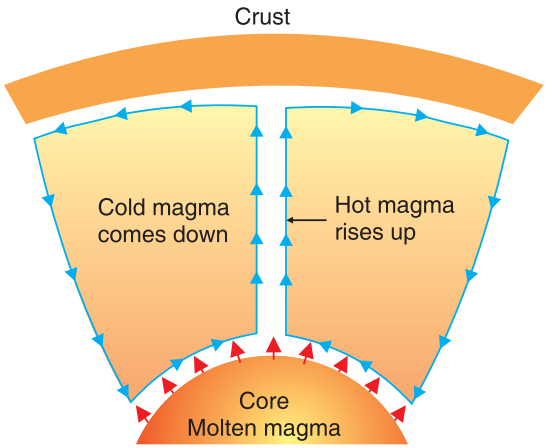


Fig. 3.2 : Heat and pressure of molten magma causes convection currents

VOLCANOES

A volcano is a vent or opening in the Earth's crust through which molten materials or magma from the interior erupts out as lava.

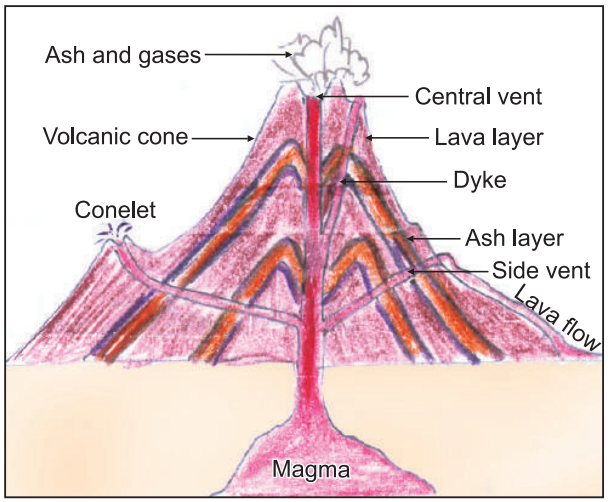


Fig. 3.3 : Structure of a volcano

WORDOLOGY W

According to Roman mythology, volcanoes were caused by Vulcan, the God of Fire. This is how they got their name.

The interior of the Earth is in molten state. Fissures and vents created due to tectonic movements sometimes connect the magma chamber to the surface. Extreme heat and pressure forces up **molten magma**, pieces of solid rock, ash, gases and steam through these vents or fissures. The magma erupts as **lava**, and accumulates round the vent in layers. This forms a tall, conical shaped volcanic mountain. The shape, however, differs depending on the type and intensity of eruption. For example, Mt. Fujiyama in Japan is in shape of a volcanic cone, Mt. Pelee, Martinique is tall and steep. While the Deccan Plateau in India, formed due to gradual fissure and eruption, is in the form of a plateau.

Volcanoes serve as attractive tourist spots. These also bring useful minerals from the interior of the earth to the surface.

Types of Volcanoes

Depending on the nature and frequency of eruption volcanoes may be classified as below.

Active or Living Volcanoes are those which have erupted frequently in the recent past and are expected to erupt further, anytime, in future.

Fig. 3.4 : A volcano

Mt. Etna in Italy, Mt. Kilauea in Hawaii, Cotapaxi in Equador, Barren Island in India and Furnace Peak in Indian Ocean (erupted more than 80 times since 1900) are some active volcanoes.

Dormant or Sleeping Volcanoes which have not erupted for centuries but may still do so. Mt. Vesuvius in Italy, Fujiyama in Japan, Haleakala on Maui in Hawaii (World's largest dormant volcano) are some examples.

Extinct or Dead Volcanoes have neither erupted for thousands of years nor is there any possibility of further eruptions in the future. They are internally inactive volcanoes. Mt. Kilimanjaro in East Africa and Cerro Aconcagua in Argentina are extinct volcanoes.

EARTHQUAKES

Movement of the lithospheric plates, volcanic eruptions and faulting leads to **vibrations**, which are felt as **earthquakes** on the surface of the Earth. Earthquakes are **sudden vibrations** or **violent tremors** (shaking) felt on the Earth's surface due to internal forces. They strike suddenly, and if they are of high intensity, buildings can be toppled and life and property lost.

The point inside the crust where the vibrations originate is called the **focus**. The place on the surface of the Earth, directly above the focus, is called the **epicentre**. The shock of the earthquake is felt most at and around this point. Vibrations radiate outward in all directions from the focus in the form of seismic waves. The strength of the earthquake decreases outwards from the epicentre. So the greatest damage is at the areas on, and close to the epicentre.

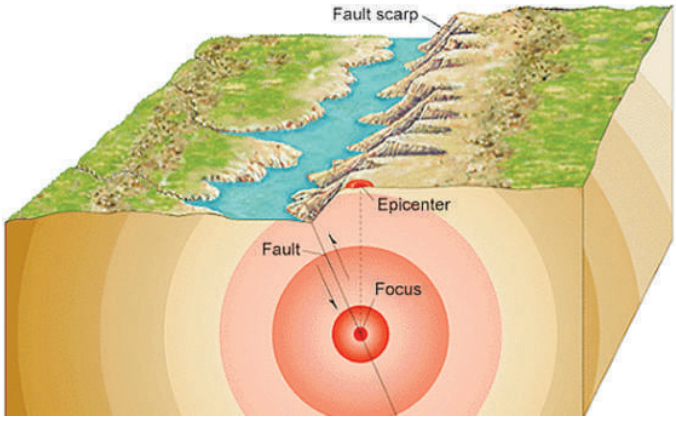


Fig. 3.5 : Origin of an Earthquake

In your previous lesson you have already learnt that **seismology** is the study of the behaviour of earthquake or **seismic waves**. Earth scientists, who are experts in the study of the pattern of earthquakes, are called **seismologists**.

Fig. 3.6 : Destruction caused by an Earthquake

The **instrument** used to record the earthquake tremors is called **seismograph**. The scale used to measure the **intensity of the seismic waves** during the tremors is called the **Richter Scale**. It was designed in 1935 by Charles F. Richter, an American seismologist. The numerical scale ranges between 0 to 9. People barely feel a quake of magnitude up to 2 while 6.0 or higher magnitude quake is considered strong. They are termed major and are very destructive when higher than 7.

Historic Earthquake

The highest-magnitude earthquake recorded to date was the Chilean earthquake on 22 May, in 1960. Three large after-shocks lasted for 23 minutes. It measured 9.6 on the Richter Scale.

CASE STUDY
EARTHQUAKE

Earthquake Rocks India, Pakistan

On 8th October, 2005, an earthquake with epicentre in Muzaffarabad, affected Jammu and Kashmir and was felt up to Delhi. It measured 7.6 on the Richter Scale and lasted over a minute. Total number of deaths mainly in Pakistan-occupied Kashmir, were 1400. About 70,000 were critically injured and nearly 5 million became homeless. In Muzaffarabad, the city hospital crumpled killing 200. About 600 students were buried alive as the Azad Jammu Kashmir University building collapsed. Official buildings also tumbled. Uri Valley and Baramulla were worst hit. In Jammu & Kashmir 1500 lives were lost and many became homeless.

Fig. 3.7 : Destruction caused by Bhuj Earthquake

Gujarat's Black Friday — Earthquake Hits Bhuj

The Republic Day, 26th January, in 2001 turned out to be a date with death for thousands of people in Gujarat. A major earthquake measuring between 6.9 and 7.9 on the Richter Scale hit Bhuj, ravaging Bhuj, Anjar, Bhachau, Gandhidham, Ropar and Ahmadabad.

Destruction : In Bhuj over 90 per cent of the buildings were destroyed by the 45 second quake, including the town's main hospital.

The village of Anjar alone lost 400 school children, who were buried under the building debris on their way to a Republic Day Parade. In total 971 students and 31 teachers lost their lives due to collapse of school buildings. In total the official death toll was closer to 35,000. More than half a lakh people were injured and 23,000 buildings collapsed. In Ahmadabad, 135 multistoryed buildings tumbled or split, mostly newly constructed ones. This reveals faulty construction of houses and buildings. Roads were damaged, railways disrupted.

Some jetties in Kandla Port were seriously damaged. Phone lines, water supply and power station transmission lines were seriously damaged. Fire broke out in some areas.

What Can be Done?

The aftermath of the Gujarat earthquake raised several questions about the nation's preparedness to cope up with such horrible human tragedies.

It took two days for the government to begin rescue and relief operations. Some villages were not approached even five days later. But NGOs and social organisations and individuals rendered prompt service in some areas.

Gujarat earthquake and its aftermath woke up the union government to the urgent need of evolving a national policy on disaster management and improving the nation's preparedness to meet such calamities. Consequently a National Committee on Disaster Management was set up.

After reading the above reports what do you think are the main causes of a large number of deaths during an earthquake? Do you think we can do something to minimise the effects of earthquakes? What steps should be taken for preparedness?

[Hint : Safe spots (e.g. under strong table), areas to stay away from (e.g., fire places, glass windows), coping up, by being calm, and face disaster confidently.]

Changing animal behaviour like bears and snakes coming out of hibernation, fishes jumping out of water are some indications of an oncoming earthquake.

ENDOGENIC FORCES ACTING OVER LONG PERIODS — DIASTROPHIC FORCES

Endogenic forces acting on the surface for long geological periods have created the major landforms on the Earth. These forces may be **continent-building or mountain-building forces**. You have already studied about them in your previous class. Let us quickly recollect, and extend that knowledge.

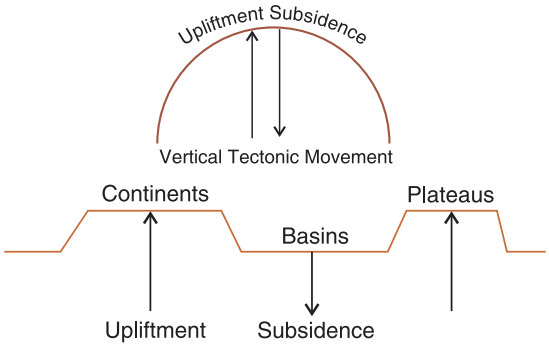


Fig. 3.8 : Vertical Tectonic Movement and resulting features

Vertical Tectonic Movements may be responsible for **upliftment** or **subsidence** of large areas of the Earth's surface. They have resulted in the formation of **continents** and **plateaus** due to structural upliftment. Sinking of particular areas in comparison to surrounding land creates **depressions** and **basins**.

Horizontal Tectonic Movements may act tangentially on the Earth's surface in particular areas. They may be compressional (pushing towards) or tensional (stretching) in nature. They result in folds and faults.

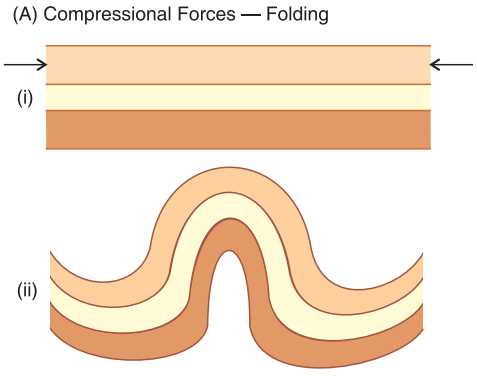


Fig. 3.9 (a) : Folding — Horizontal Tectonic Movement and resulting features

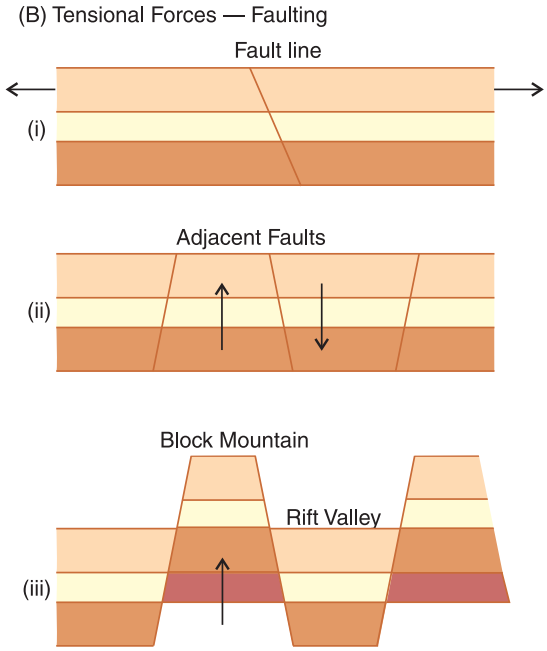


Fig. 3.9 (b) : Faulting

The endogenic forces of the Earth are not always destructive. They give rise to new landforms. Volcanic activity in the seas leads to formation of islands. As some part is denuded, another part is built up. This process continues and maintains a balance on Earth.

EXOGENIC FORCES

We all love to enjoy the beautiful natural wonders — the varying landforms on the Earth's surface. But do you know that the different landforms on the Earth are made, broken down and remade? The landscape is exposed to the forces of nature. It is being continuously worn down by **external forces** also termed as **exogenic forces**.

The two processes that continuously **wear down** the rocks on the Earth's surface are **weathering** and **erosion**. They gradually alter the **landscape** and create **different landforms**.

Weathering is the **breaking up** of rocks on the Earth's surface. They are mainly caused by elements of weather like temperature changes, frost action, or due to chemical changes. **Erosion** is the **wearing down and carrying away** of the rocks by the action of running water (rivers), glaciers, sea waves or wind. The eroded materials

Fig. 3.10 : Breaking up of rocks — weathering

are transported and ultimately deposited by these agents of erosion. The entire process creates the different landforms that we see on the Earth.

Work of a River

A river is a natural channel of running water. As a river flows, it erodes the landscape. It carries along this load of rocks, stones and other particles with itself. This load scours (clears by rubbing) the riverbed. In the highlands the river flows very rapidly. As a result erosion is faster. The river cuts out deep **V-shaped valley** in the solid rocks of the landscape.

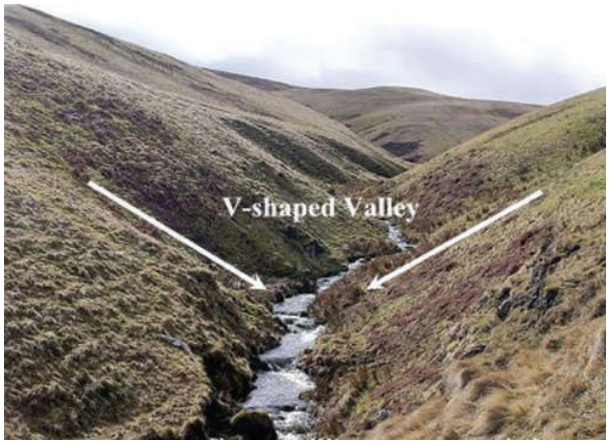


Fig. 3.11 : V-shaped Valley — created due to river erosion

In the highlands when the river jumps over hard rocks and boulders that cannot be easily eroded, **rapids** are formed.

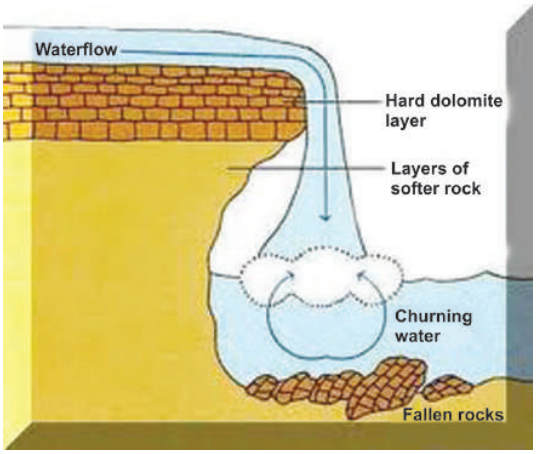


Fig. 3.12 : A waterfall

A **waterfall** is created when the river plunges down from great heights at the edge of a highland, or a steep valley, or when a horizontal band of hard rock with under-cut soft rocks below, lies on the path of the river.

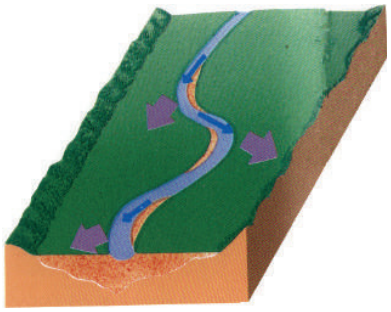
DID YOU KNOW?

The highest waterfall in the world is the Angel Falls of Venezuela, South America. The Niagara Falls of North America (located on the border between Canada and the USA) and the Victoria Falls of Africa (located on the border of Zambia and Zimbabwe) are two other famous waterfalls of the world. Find out the names of some waterfalls in India.

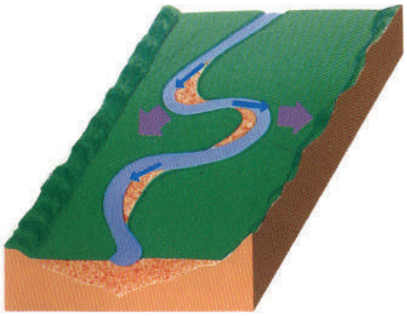
Fig. 3.13 : Angel Falls

Further downstream, tributaries join the main river and its volume increases. The river flows slowly over the plains carving wide valleys. The slow river twists, turns and bends over the wide plains forming loops called **meanders**. Continuous erosion and deposition along opposite sides of the meander brings the ends of the loop closer until they nearly join. The main river

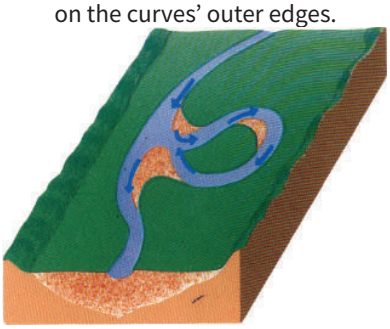
breaks away and leaves behind a cutoff, horse-shoe shaped lake called oxbow lake.



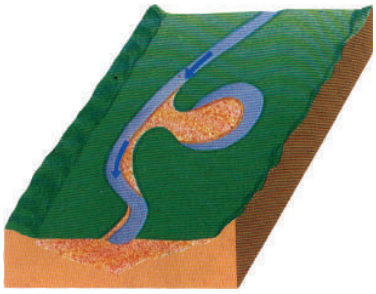
A river coursing through a flat plain develops snakelike curves called meanders.



The meanders grow as water washes away land on the curves' outer edges.



Over thousands of years, a meander may curve back on itself.



Gradually debris collect in the loop's neck, creating a separate oxbow lake.

Fig. 3.14 : Formation of an oxbow lake

Due to increase in volume sometimes the river overflows its banks, flooding the surrounding areas. Fine sediments of silt and clay are deposited along its bank by the flood water. As a result, a flat, fertile alluvial **floodplain** is formed. As more deposition takes place along the sides of the river, raised embankments, called levees are formed.

As the river approaches the sea, the slow moving river deposits its heavy load of sediments which it can no more carry. The deposits cause the river to break up into **distributaries and braided channels**. A triangular piece of land is formed at the mouth of the river due to deposition. It is called a **delta**.

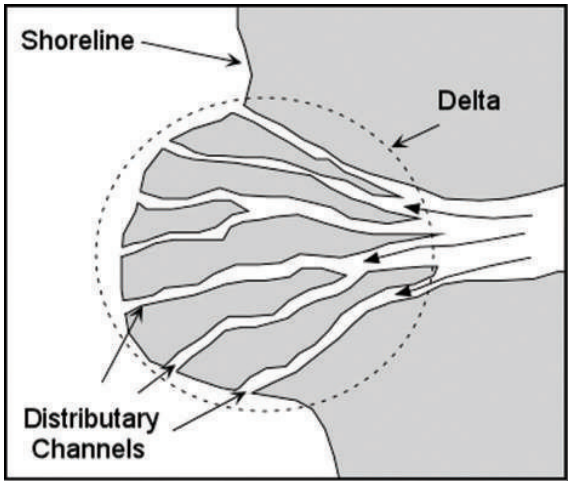


Fig. 3.15 : Delta

Work of Ice

Glaciers are **'rivers of ice'** found in the high mountains. It is a tongue shaped huge block of ice. It moves slowly downhill due to its weight and gravity. On its way it erodes protruding (jutting out) rocks. Rocks embedded on the base of the glacier act as **scrapers**. They have a bulldozing

Fig. 3.16 : U-shaped valley

effect on the rocks exposed on its path. It carves out a **wide U-shaped valley**.

It may carve sharp peaks called **horns** on mountains e.g. the famous Matterhorn Peak in Switzerland. It may scoop rounded hollows called **cirques**. Small **lakes** are often left in **cirques** when the glacial ice melts. The glacier deposits the materials it carries along its sides, at the base and at the tip of the tongue of ice. These big and small pieces of rocks, sand and silt debris deposited by the glacier are called **glacial moraines**.

Fig. 3.17 : A glacier in the Himalayas

Work of Sea Waves

In the coastal areas the work of the sea waves creates spectacular features. On seacoasts, waves carrying sand and pebbles continuously pound the shore. They strike on the steep vertical **seacliffs**. Cracks develop on the weak rock face. They gradually enlarge to form **hollow like caves**. When waves pound from both sides, the hollows enlarge. They may wear through rocks, between two caves, leaving the roof that creates a **natural arch**. Eventually, due to erosion, the roof collapses. Parts of the cave wall are left as **stacks**.

Deposition of the sediments by the waves form sea **beaches**. Our country, India, has beautiful beaches like Kovallam in Kerala, Ganapatiphule and Juhu in Maharashtra, beaches of Goa, Puri in Odisha and Marina Beach in Chennai.

Work of Wind

Wind is the main agent of erosion in dry desert areas. The winds blowing in the deserts

Sea caves

Arches

Fig. 3.18 : Stacks

drag sand along with them. When a huge rock falls on their path, the sand-filled winds scour and scrape the rock. As the load of sand is maximum closer to the surface, the lower portion of the rock is eroded more than the upper portion. This forms **mushroom shaped rocks** called mushroom rocks. They are also called **hoodoos**. Extreme temperatures in the desert with scorching days and freezing nights also cause rocks to expand and contract very fast. This creates cracks in the rocks.

When any obstruction, like a small bush, lies on the path of the sand bearing winds, their force is slowed down. They deposit the sand on that spot. A low hill of sand, called a sand

Fig. 3.19 : Mushroom rocks

dune, is built up by wind deposition. A series of sand dunes mark the desert landscape. It gives it the appearance of a sea of sand. They are usually crescent shaped. Sometimes they are longitudinal in shape.

Fig. 3.20 : Crescent shaped sand dune

Sometimes very fine and light sand particles may be blown over from desert areas to places quite far away. These deposits are called loess. They form fertile plains. Loess deposits found in China have their origin in the Gobi Desert.

The external forces acting on the surface are incessantly active. The agents of erosion are eroding some areas, reducing their heights. At the same time somewhere else they are depositing the eroded materials and increasing their heights. You already know now, how the spectacular landforms are formed. Next time when you go out for a trip to some areas, identify what landforms you see. Astonish others by telling them how they were formed.

DID YOU KNOW?

The branch of Geography that deals with the study of the various landforms on the Earth's surface, is called Geomorphology. Geo – Earth, morphology — study of forms (land structure).

INFOBITS

- The lithospheric plates are moving because they are floating on the molten magma inside the earth.
- "Hurricanes" are large, spiraling tropical storms that can pack wind speeds of over 160 miles an hour and unleash more than 2.4 trillion gallons of rain a day. Hurricanes can be coupled with storm surges and severe flooding.
- Landslides often accompany earthquakes, floods, storm surges, hurricanes, wildfires, or volcanic activity. They are often more damaging and deadly than the triggering event.

POINTS TO REMEMBER

- The evolution of landforms on the earth has been taking place due to two types of forces i.e. endogenic forces and exogenic forces.
- Earth consists of several large and small, rigid, irregularly shaped plates (slabs) which carry continents and the ocean floor. These crustal slabs are called tectonic or lithospheric plates.
- Endogenic forces may be sudden and violent and results in earthquake, volcanic activity or a landslide. Tectonic movements originating from the interior of the earth are called Endogenic movements.
- A volcano is an opening in the earth's crust through which magma erupts out as lava. Volcanoes are of three types, i.e. active, dormant and extinct.
- Movement of the lithospheric plates, volcanic eruptions and faulting leads to vibrations, known as earthquakes.
- The point inside the crust where the vibrations originate is called the focus and the place directly above it is called epicenter.
- Endogenic forces acting over long periods are called Diastrophic forces. These may be continent building or mountain building forces.
- Vertical movements have resulted in the formation of continents and plateaus. Whereas, horizontal tectonic movements result in folds and faults.
- External forces or exogenic forces include weathering and erosion. They gradually alter the landscape and create different landforms.
- River as an agent of erosion forms V-shaped valleys, rapids, waterfalls on high elevations. In the plains it forms, meanders, floodplain, ox-bow lake, levees and delta.
- Glaciers or rivers of ice carves out U-shaped valley, horns, cirques, small lakes and glacial moraines etc.
- Sea waves leads to the formation of hollow like caves, natural arch, stacks and sea beaches.
- Wind as an agent of erosion forms mushroom rocks or hoodos, sand dunes and loess deposits.

GLOSSARY

DELTA – A triangular shaped land formed at the mouth of the river due to river deposition.
EARTHQUAKE – Sudden vibrations or violent tremors felt on the Earth's surface due to tectonic forces.
ENDOGENIC FORCES – Tectonic force or internal force originating from the interior of the Earth and acting on the surface.
EXOGENIC FORCES – External forces like agents of erosion and weathering that act on the Earth's surface and shape out different landforms.
FLOODPLAIN – A broad, flat, fertile plain formed due to river deposition during flooding.
MEANDERS – Loops created due to twisting, turning and bending of rivers over broad level plains.
MORAINES – Small pieces of rocks, sand and silt debris deposited by glacier where it melts.
OXBOW LAKE – A cut-off, horseshoe shaped lake, left behind when river breaks away from the pronounced bends of meanders when the ends of the loop come closer, due to erosion and deposition on opposite sides.
RICHTER SCALE – Standard scale used to measure the magnitude of an earthquake.
SEISMOGRAPH – Instrument used to record earthquake.
U-SHAPED VALLEY – A valley created by glacial erosion having broad floor and steep sides, that provide the appearance of English alphabet 'U'.
VOLCANO – A vent or opening in the Earth's crust through which molten magma from the interior is erupted as lava.
V-SHAPED VALLEY – Deep V-shaped valley with steep sides cut in mountainous regions due to river erosion.
WEATHERING – Breaking up of rocks due to physical and chemical changes in the rocks.

TIME TO LEARN

A. Multiple Choice Questions (MCQs)

1. The Earth's crust is broken up into plates moving in relation to each other by about :
(a) 2 m to 5 km (b) 25 cm to 50 cm (c) 2.5 cm to 5 m (d) 2.5 cm to 5 cm

2. A volcano which has not erupted for centuries but may still do so is :
(a) Active volcano (b) Dormant volcano (c) Extinct volcano (d) Dead volcano

3. The study of the behaviour of earthquake waves is called :
(a) Continental Drift (b) Plate tectonics (c) Seismology (d) Meteorology

4. Rapids and waterfalls are features formed by :
(a) River erosion (b) River deposition (c) Glacial erosion (d) Sea waves

5. A feature formed due to deposition by sea waves is :
(a) Moraine (b) Sand dune (c) Sea cave (d) Beach

6. After the collapse of the cave roof due to erosion by sea waves, parts of the cave wall are left as :
(a) Moraines (b) Hoodoos (c) Stacks (d) Natural arch

B. Match the following

Column A	Column B
1. Sudden and violent vibrations	**(a)** Meanders
2. Wearing down and carrying away of rocks	**(b)** U-shaped valley
3. Rivers form loops	**(c)** Mushroom rocks
4. Glaciers found in mountains	**(d)** Earthquakes
5. Work of wind	**(e)** Erosion

C. Give one word for the following

1. Horse-shoe shaped lakes formed by rivers _____
2. A dead volcano _____
3. Triangular piece of land formed at the mouth of river due to deposition _____
4. Breaking up of rocks on the earth's surface _____
5. Pieces of rocks, sand and silt debris deposited by glaciers _____

D. Very short answer type questions

1. What causes convection currents inside the earth's crust?
2. What forces up the molten magma on the earth?
3. Name the scale used to measure the intensity of the seismic waves.
4. Name the two forces that continuously wear down the rocks on the earth's surface.
5. What is the result of horizontal tectonic movements?

E. Short answer type questions

1. What do you understand by 'plate tectonics'?
2. What causes volcanic eruptions?
3. What type of features are formed by vertical tectonic movements?
4. What is meant by weathering?
5. How are waterfalls created?

F. Long answer type questions

1. Distinguish between the following :
   (a) Weathering and erosion
   (b) Active volcanoes and dormant volcanoes
2. With the help of diagram explain the formation of an 'ox-bow lake'.
3. Explain briefly the work of wind as an agent of erosion.
4. The earth experiences about a million of earthquakes every year, about two earthquakes per minute. What can we do to minimize the effects of earthquakes? **[HOTS]**
5. "Weathering refers to processes that break the rocks into smaller and smaller pieces". Does weathering provide some benefits also? Explain. **[Value Based Question]**

G. Word Jumble

Reassemble the letters of the following words. (Use the hint provided)

(a) HIRRCTE (Earthquake measuring scale)

(b) CGDEINNEO (Mountain building forces)

(c) SERONOI (Wearing down and carrying away process)

(d) SBIRDUESIAITTR (Deposits causing breaking up of river)

(e) RGISALCE (Rivers of ice)

H. Word Grid

Solve the puzzle by following your search horizontally and vertically and circle the answers from the following clues :

C	Y	L	G	B	D	O	R	M	A	N	T
I	V	O	L	C	A	N	O	F	G	Q	X
N	Z	U	A	S	P	M	L	O	E	S	S
T	B	X	C	O	Q	R	F	O	C	U	S
H	E	A	I	T	O	E	O	Z	L	M	N
W	A	T	E	R	F	A	L	L	Y	X	P
O	C	B	R	D	H	K	D	E	L	T	A
L	H	C	S	E	J	H	I	O	U	S	E
X	E	E	O	X	C	A	N	T	R	A	T
Y	S	E	I	S	M	O	G	R	A	P	H

(i) Volcanoes which have not erupted for centuries but may still do so.

(ii) Instrument used to record the earthquake tremors.
(iii) Result of horizontal tectonic movements.
(iv) River plunging down from great height.
(v) Rivers of ice found in high mountains.
(vi) Deposition of sediments by sea waves.
(vii) An opening in the earth's crust.
(viii) Point where the vibrations originate.
(ix) Deposits by wind.
(x) Triangular piece of land formed at mouth of river.

LIFE SKILLS

1. Boil some rice in a pan. Add some ketchup to the water. On the top of lid place a small thermocol piece to represent a house and some beads to represent mobile objects. When the rice starts boiling, see the beads start vibrating and move aside and the thermocol block topples. This is how earthquake occurs when the heat of the magma releases pressure. As boiling continues see the starch and bits of rice pouring out of the edges of the lid. Part of the lid is even displaced. This is how volcanic eruption takes place, the tectonic plates shift, pouring out the magma as lava and pieces of rocks.
2. Our country India is proud to have a varied collection of landforms within its geographical limits. Nature has bestowed her with great geographical beauty. Explore our rich physical heritage. Study your own region carefully. You may also choose some other region that you visited during any vacation. Find out and collect photographs of different landforms found there. Paste them on a chart. Give information beside each photograph regarding which agent formed it, whether it was formed by erosion or deposition. In which other part of our country such features may be found? Display it on your classroom board.

MIND MAP