

## MOUNTAINS

A mountain is a natural elevation of the earth surface rising more or less abruptly from the surrounding level and attaining an altitude which relatively to the adjacent is impressive or notable.

- A mountain is a natural elevation of the earth surface.
- A mountain may be narrow at the top and broad at the base.
- The elevation of mountain is considerably more than that of surrounding area.
- We know that temperature reduce with increase in altitude.
- Due to this very high mountains are covered with snow.

### **PES OF MOUNTAINS:**

There are four types of mountains

- I. Fold Mountains
- II. Block Mountains
- III. Volcanic Mountains
- IV. Dome Mountains

### **FOLD MOUNTANS:**

There are the most common type of mountains they are made by parts of the earth moving in different ways if we put two telephone directories on the table and push them together some of the pages will curve up and form a crest. Other will be crumpled under the pages which have curved up. This type of mountain is called Fold Mountains. It is caused by the folding of the rock. Fold Mountains are created through the process of orogeny. An orogenic event take millions of year to create a Fold Mountains when a tectonic plates get pressure from two sides it get folded some of its portion become elevated and form of mountains.

For example:

The Rocky Mountains in America, Andes in South America, Himalayan Mountains in Asia.

### **Block Mountains:**

These mountains are created when faults and cracks in earth force block of rock upward and down. The uplifted block are Block Mountains. The uplifted block are horsts and lower block called graben they usually have a steep front side and then a sloping back side. The Ox Mountains in Ireland and Sierra Nevada mountains in North America are Block Mountains.

For example:

The Vosges Mountains in Europe.

### **Volcanic Mountains:**

A mountains formed due to volcanic activity is called volcanic mountains

For example:

Mt. Kilimanjaro and Mt. Fujiyama.

Andaman and Nicobar Islands in India are the tip of the mountains which rise from the ocean floor.

### **Dome Mountains:**

When a large globes of magma float up from beneath the crust and push up surface rocks creating a rounded swelling in the crust. Once the magma cools it create a large dome of harder rock under the surface which erosion sometimes reveals.

## **THE WEARING DOWN OF MOUNTAINS:**

Mountains may be look the same during over lives but they do change very slowly. The streams which flow down their sides wear away little piece of rock. Wind and rain also wear down the rock .Frost and ice break the rock we call this wearing down erosion eventually after many year erosion the mountains will completely worn down to a level plain. We will never see that plain as it will take millions of years to happen.

## **IRELAND FROM ABOVE**

Many people says that Ireland like a saucer. It has mountains around the edge in center the land flat. This flat part of land is called lowland.

## **MOUNTAIN AROUND THE WORLD**

### **Ireland:**

Carrantuohill in the Macgilycuddy Reek in co. Kerry is the highest mountains in Ireland. It is 1041 meters high.

### **Europe:**

Mont Blanc (White Mountains) is the highest mountains in Alps, Western and European Union. It rises 4810 meters above sea level and is ranked 11 in the world.

### **Pakistan:**

Nanga Parbat is the highest mountain in Pakistan. It is 26660 feet high. It's ranked 8.

### **India:**

Nanda Devi is the highest mountain in India. It is 25645 feet high.

### **Chain:**

Namcha Barwa is the highest mountain in Chain. It is 25445 feet high.

**Canada:**

Mountain Logan is the highest mountain in Canada. It is 19849 feet high.

**The World:**

Mount Everest is the highest mountain at 8848 meter. It is located in Himalayas on the Nepal.

# Mountain

## Mountain:

A **mountain** is a large natural rise of the Earth's surface that usually has a "summit" (the name for a mountain's top). It is usually steeper and taller than a hill. Mountains are often thought of as being a hill which is larger than 600 metres.

## Formation:

The forming of a mountain is called orogeny. Mountains are formed when rock layers in the ground are pushed from opposite sides, and by being pushed, they push the crust up.

## mountain range :

A **mountain range** is a large group of mountains beside each other. There are three main ways a mountain may be made:

## Fold mountains:

Fold mountains occur when two plates collide. The less dense continental crust "floats" on the denser mantle rocks beneath. The continental crust is normally much thicker under mountains, compared to lower lying areas. Rock can fold either symmetrically or asymmetrically. The upfolds are **anticlines** and the downfolds are **synclines**. The Jura Mountains are an example of fold mountains.

Folded mountains make up some of the highest mountains in the world. Folded mountains commonly form along boundaries, where 2 continents meet. Some really complex folds are in parts of the Andes, Alps, Himalayas, Appalachians, and Russia's Ural Mountains. These long mountain chains also show lots of signs of folding.

### **Fault-block mountains:**

Block mountains are caused by faults in the crust: a seam where rocks can move past each other. When rocks on one side of a fault rise relative to the other, it can form a mountain. The uplifted blocks are block mountains or *horsts*. The dropped blocks are called *graben*.

They can form extensive rift valley systems. This form of landscape can be seen in East Africa, the Vosges, the Basin and Range province of Western North America and the Rhine valley. These areas often occur when the regional stress is extensional and the crust is thinned.

### **Volcanic mountains:**

Volcanoes are formed in one of these ways:

- When a tectonic plate is pushed below another tectonic plate,
- at a mid-ocean ridge or hotspot. At a depth of around 680 kilometres (2,230,000 ft), melting occurs in rock above the slab (due to the addition of water), and forms magma that reaches the surface. When the magma reaches the surface, it often builds a volcanic mountain, such as a shield volcano or a stratovolcano.

### **Examples:**

of volcanoes include Mount Fuji in Japan and Mount Pinatubo in the Philippines. The magma does not have to reach the surface in order to create a mountain: magma that solidifies below ground can still form dome mountains, such as Navajo Mountain in the states of Utah and Arizona, in the United States.

Other volcanic mountains form over hot spots, pockets of magma beneath the crust which erupt onto Earth's surface. The Hawaiian Islands are the tops of really high volcanic islands that have formed over a hot spot on the sea floor. The main Hawaiian island is a volcano about 98 kilometres (322,000 ft) above the ocean floor. Its base is about 680 kilometres (2,230,000 ft) wide. Almost 48 kilometres (157,000 ft) of this island is above sea level.

### **Dome mountains:**

Dome mountains, like those in the Black Hills of South Dakota and the Adirondack Mountains of New York, are an unusual domish type of mountain that is formed when molten rock rises through the crust and push up the rock layers above it. This creates a circular dome on the Earth's surface. The molten rock later cools off and forms hardened rock. When the pushed up rocks are worn away, the hardened rock is shown. This hardened rock then wears away in places. When it wears away, it leaves mountains, and they are called dome mountains.

## **Plateau mountains:**

Plateau mountains are formed a bit like folded mountains. They are large areas of flat topped rocks that have been lifted high above the crust by continental plates. Most plateaus are near folded mountains.

## **Tallest mountains:**

The highest known mountain in the Solar System is the Olympus Mons (27 km high) on Mars. The highest mountain in the world is Mount Everest (8,848m) which is in Nepal and Tibet, in Asia.

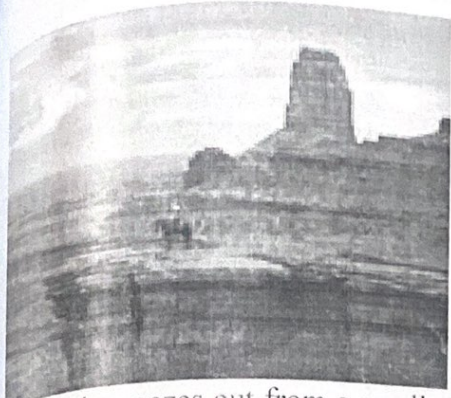
The "tallest" mountain in the world is Mauna Loa, in Hawaii. The "height" of a mountain is measured from sea level, but the "tallness" of a mountain is measured from its base, even if under water. The highest mountain in North America is Mount McKinley (6,194m) in Alaska in the USA. The highest in South America is Aconcagua (6,962m) in Argentina. For Africa, it is Kilimanjaro (5,963m) of Tanzania. In Europe, the highest mountain is in Russia called Elbrus.



## Difference Between Plateaus and Plains Areas:

### Plateaus:

A plateau is a flat, elevated landform that rises sharply above the surrounding area on at least one side



This cowboy gazes out from a small plateau in Monument Valley, Arizona, across an enormous plateau—the Colorado Plateau, which covers most of the American Southwest.

### ↓ Oceanic Plateaus:

Plateaus in the ocean are divided into two groups. One group is made of continental crust. The other is made of igneous rock. Igneous oceanic plateaus represent an age between the older, less-dense continental crust and the younger, more dense oceanic crust.

### There are two kinds of plateaus:

#### ↓ Dissected plateaus

#### ↓ Volcanic plateau

A dissected plateau forms as a result of upward movement in the Earth's crust. The uplift is caused by the slow collision of tectonic plates. The

Colorado Plateau, in the western United States, has been rising about .03 centimeter (.01 inch) a year for more than 10 million years.

**volcanic:plateau:**

A volcanic plateau is formed by numerous small volcanic eruptions that slowly build up over time forming a plateau from the resulting lava flows. The North Island Volcanic Plateau covers most of the central part of the North Island of New Zealand. This volcanic plateau still has three active volcanoes: Mount Tongariro, Mount Ngauruhoe, and Mount Ruapehu.

**Rocky;mountains:**

Valleys form when river water cuts through the plateau. The Columbia Plateau, between the Cascade and Rocky mountains in the northwestern United States, is cut through by the Columbia River.

**outlier:plateaus:**

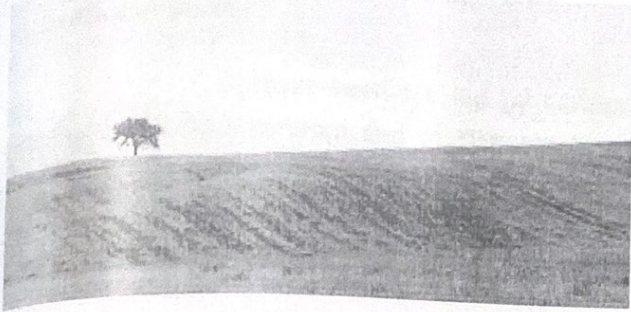
Erosion shapes plateaus in other ways. Sometimes, a plateau is so eroded that it is broken up into smaller raised sections called outliers. Many are composed of very old, dense rock formations. Iron ore and coal often are found in plateau outliers.

The largest plateau in the world is the Tibetan Plateau, located in central Asia. It stretches through the countries of Tibet, China, and India and occupies an area of 2.5 million square kilometers (1.5 million square miles), which is four times the size of the U.S. state of Texas.

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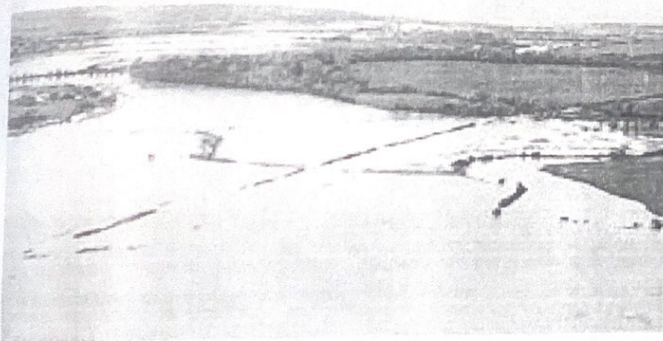
### **Defination of Plain:**

In geography, a plain is a flat, sweeping landmass that generally does not change much in elevation. Plains occur as lowlands along the bottoms of valleys or on the doorsteps of mountains, as coastal plains.



### **Types of plain:**

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A flood plain in the Isle of Wight.

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- **Structural plains :**

Are relatively undisturbed horizontal surfaces of the Earth. They are structurally depressed areas of the world that make up some of the most extensive natural lowlands on the Earth's surface.

- **Erosional plains:**

Have been leveled by various agents of denudation such as running water, rivers, wind and glacier which wear out the rugged surface and smoothens them.

- **Depositional plains:**

Formed by the deposition of materials brought by various agents of transportation such as rivers, wind, waves, and glaciers. Their fertility and economic relevance depend greatly on the types of sediments that are laid down.

**Types of Depositional:**

**Flood plain:**

Adjacent plain to a stream, river, lake or wetland that experiences occasional or periodic flooding.

- **Scroll plain:**

A plain through which a river meanders with a very low gradient.

- **Lava plain:**

Formed by sheets of flowing lava.

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• **Glacial plains:**

gravity.

Formed by the movement of glaciers under the force of

• **Sandur:**

A glacial out-wash plain formed of sediments deposited by melt-water at the terminus of a glacier. Sandar consist mainly of stratified (layered and sorted) gravel and sand.

• **Abyssal plain:**

A flat or very gently sloping area of the deep ocean basin.

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## ❖ Geography:

The study of the physical features of the earth and its atmosphere, and of human activity as it affects and is affected by these, including the distribution of population and resources and political and economic activities.

## ❖ Landform:

Forces inside and outside the earth can change the shape of earth's surface. Endogenic forces and exogenic forces can create a lot of *landforms*. A landform is a natural feature of the solid surface of the Earth. Examples include Mountains, Plateaus, and Plains.

## ❖ Plateaus

A plateau is an elevated area with a more or less leveled land on its top. It has a large area on its top and a steep slope on its sides. They are also called as high plains or table lands. The plateaus cover about 18% of the earth's land surface.

## ❖ Classification of plateaus:

On the basis of their geographical location and structure of rocks, the plateaus can be classified as:

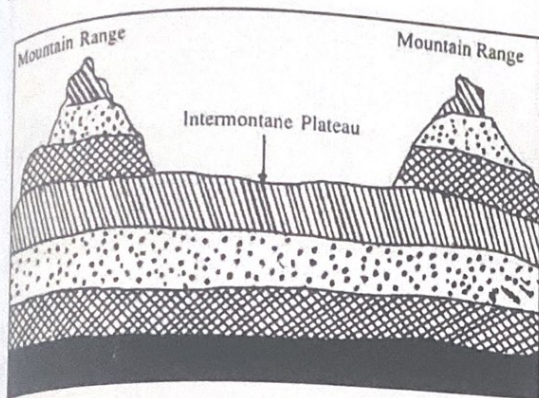
- Intermontane Plateaus
- Piedmont plateaus
- Continental plateaus
- Volcanic plateaus
- Dissected plateaus

### ● Intermontane Plateaus:

The plateaus which are bordering the mountain ranges (generally Fold Mountains) or are partly or fully enclosed within them are the intermontane plateaus.

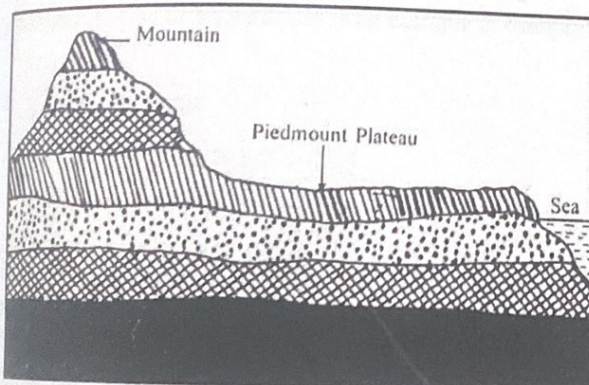
The word 'intermontane' means 'between mountains'.

Intermontane plateaus are the highest in the world. They have nearly horizontal rock layers which are raised to very heights by vertical movements of the earth.



Examples: The Plateau of Tibet is an example of the intermontane plateau which is surrounded by the Fold Mountains like the Himalayas, the Karakoram, the Kunlun and the Tien Shah.

### ● Piedmont Plateaus



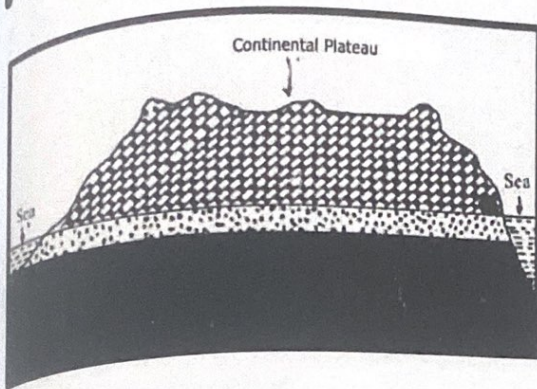
Plateaus which is situated at the foot of a mountain and is locked on the other side by a plain or a sea/ ocean is called as a piedmont plateau.

The word 'piedmont' means 'foot of a mountain'.

They are also called as Plateaus of denudation as the areas once were high to the level of mountains, have now been reduced to the foot level of the mountain by various agents of erosion.

Examples: The Malwa Plateau is an example of piedmont plateau.

### ● Continental Plateaus:



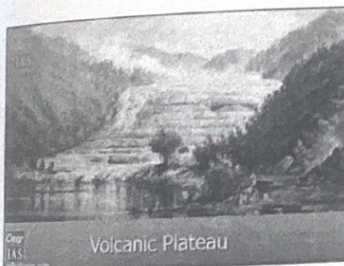
They are formed either by an extensive continental upliftment or by the spread of horizontal basic lava (less viscous) sheets completely covering the original topography.

This kind of plateaus shows an abrupt elevation in contrast to the nearby lowland or sea (i.e. more steepness on sides).

The Continental Plateaus are also known as Plateaus of Accumulation.

Examples: Plateau of Maharashtra is an example of continental plateau.

### ● Volcanic Plateaus



A volcanic plateau is a plateau produced by volcanic activity. There are two main types: lava plateaus and pyroclastic plateaus.



Lava plateaus are formed by highly fluid basaltic lava during numerous successive eruptions through numerous vents without violent explosions.

Pyroclastic volcanic plateaus are produced by massive pyroclastic flows and they are underlain by pyroclastic rocks.

#### ● Dissected Plateaus



A dissected plateau is a plateau area that has been severely eroded so that the relief is sharp. Such an area may appear as mountainous.

Dissected plateaus are distinguishable from orogenic mountain belts by the lack of folding, metamorphism, extensive faulting, or magmatic activity that accompanies orogeny (mountain building).

### **Economic significance of Plateaus**

**Storehouse of minerals:** Most of the minerals in the world are found in plateaus. The extraction of minerals in plateaus is relatively easier on plateaus than mountains. The major portions of industrial raw materials are obtained from plateaus. We get gold from the plateau of Western Australia; copper, diamond and gold from the plateaus of Africa; and coal, iron, manganese and mica from the Chottanagpur Plateau in India.

**Generation of hydel-power:** The edges of plateaus form waterfalls which provide ideal sites for generating hydel power.

**Cool climate:** The higher parts of the plateaus even in tropical and sub-tropical regions have a cool climate.

**Animal rearing and agriculture:** plateaus have large grassland areas suitable for animal rearing especially sheep, goat, and cattle. The lava plateaus when compared to other plateaus are richer in minerals and hence used for agriculture as the soil is very fertile.

## ❖ Plains

Plains are the most important landforms found on the earth surface.

A plain is nothing but a low-lying relatively flat land surface with very gentle slope and minimum local relief.

About 55% of the earth's land surface is occupied by plains.

Most of the plain have been formed by deposition of sediments brought down by rivers.

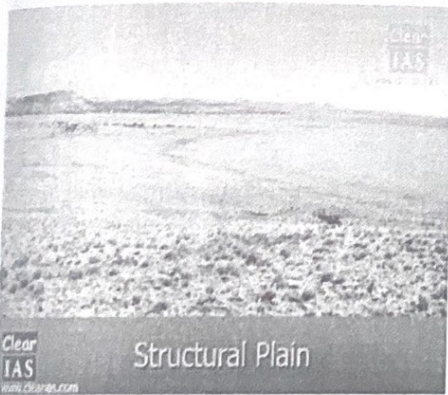
Beside rivers, some plains have also been formed by the action of the wind, moving ice and tectonic activities

Classification of plains.

On the basis of their mode of formation, plains can be classified as:

- Structural plain
- Erosional plains
- Depositional plains

### ● Structural Plains:

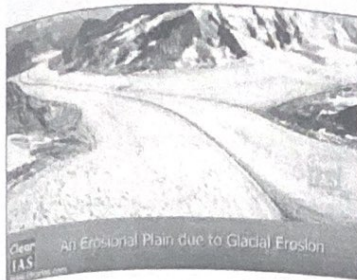


These plains are mainly formed by the upliftment of a part of the sea floor or continental shelf.

They are located on the borders of almost all the major continents.

The structural plains may also be formed by the subsidence of areas.

### ● Erosional Plains (Pen plains):



Erosional plains are formed by the continuous and long time erosion of uplands.

The surface of such plains is hardly smooth and hence, they are also called as Pen plains, which means almost plain.

### ● Depositional Plains:



These plains are formed by the depositional activity of various geomorphic agents.

When plains are formed by the river deposits, they are called as riverine or alluvial plains.

The depositions of sediments in a lake give rise to a Lacustrine Plain or Lake Plains. The Valley of Kashmir is an example of lacustrine plain.

When plains are formed by glacial deposits, they are called as Glacial or Drift Plains.

When the wind is the major agent of deposition, those plains are called as Loess Plains.

## **Economic significance of Plains**

### **Fertile soil:**

The plains generally have deep and fertile soil. As they have a flat surface, the means of irrigation can be easily developed. That is why plains are called as the 'Food baskets of the world'.

### **The Growth of Industries**

The rich agricultural resources, especially of alluvial plains, have helped in the growth of agro-based industries. Since the plains are thickly populated, plenty of labour is available for the intense cultivation and for supplying the workforce for the industries.

### **Expansion of means of transportation:**

The flat surface of plains favors the building of roads, airports and laying down railway lines.

**Centers of civilizations:** Plains are centers of many civilizations.

### **Setting up of cities and towns:**

Easy means of transportation on land and the growth of agriculture and industries in plains have resulted in the setting up and expansion of cities and towns. The most developed trade centers and ports of the world are found in the plains only and as much as 80% of the world's population lives here.