

Types of Mountain Formation

Mountain Formations describe the geological processes that lead to the formation of different types of mountains. Through processes of faulting, folding, volcanic activity different mountain formations are created.

This article will talk about the different types of mountain formations found around the world as well as those in India.

The information from this article will be useful in the geography segment of the IAS Exam.

How many types of mountains are there in the World?

Mountain formations are classified under the following categories:

1. Volcanic Mountains
2. Fold Mountains
3. Block Mountains
4. Residual Mountains
5. Dome Mountains

Details of each mountain type is given below:

1. Volcanic Mountains: When tectonic plates move about, volcanoes are formed, and when volcanoes erupt, mountains are formed in turn.

A shield volcano has a gently sloping cone due to the low viscosity of the emitted material, primarily basalt. Mauna Loa is the classic example, with a slope of 4° - 6° .

The composite volcano or stratovolcano has a more steeply rising cone (33° - 40°), due to the higher viscosity of the emitted material, and eruptions are more violent and less frequent than for shield volcanoes.

Most volcanic mountains occur in a band surrounding the Pacific Ocean. Collectively they are known as the Pacific Ring of Fire. The famous volcanic mountains are stratovolcanoes or shield volcanoes. Examples of a stratovolcano are Vesuvius and Mount Fuji, while a shield volcano is Mauna Loa on Hawaii.

2. Fold Mountains: Fold mountains are created where two or more of Earth's tectonic plates are pushed together. At these colliding, compressing boundaries, rocks and debris are warped and folded into rocky outcrops, hills, mountains, and entire mountain ranges.

3. Block Mountains: The raising of a fault block leads to the formation of block mountains. Higher blocks are called horsts and troughs are known as grabens. When the surface is spread apart, it leads to tensional forces coming into place when these tension forces split apart; it causes the centre block to drop down.

An example of this is the Sierra Nevada Range in the United States.

4. Residual mountains: Through an erosion of an elevated area residual mountains are formed. Alternatively such formations are also known as mountains of denudation.

The Scottish Highlands, Scandanavian Mountains, and the landmass of the Balkan Peninsula are examples of Residual Mountains.

5. Dome mountains: Dome mountains are formed when large globs 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 creates a large dome of harder rock under the surface, which erosion sometimes reveals.

Types of Mountains in India

The table below shows the type of mountains found in India

Types of Mountains in India	
Fold Mountains	The mountains of Himalayas are an example of fold mountains
Residual Mountains	Hills like the Nilgiris, the Parasnath, the Girnar and Rajmahal in India are examples of this type
Block mountains	The mountains of Satpura and Vindhya found in the central-western part of India are an example of block mountains.
Volcano Mountains	The only known instance of a Volcanic mountain is located on Barren Island in the Andaman Sea
Dome Mountains	Kedar Dome peak is a dome shaped mountain in the Garhwal range of the Himalayas in Uttarakhand.