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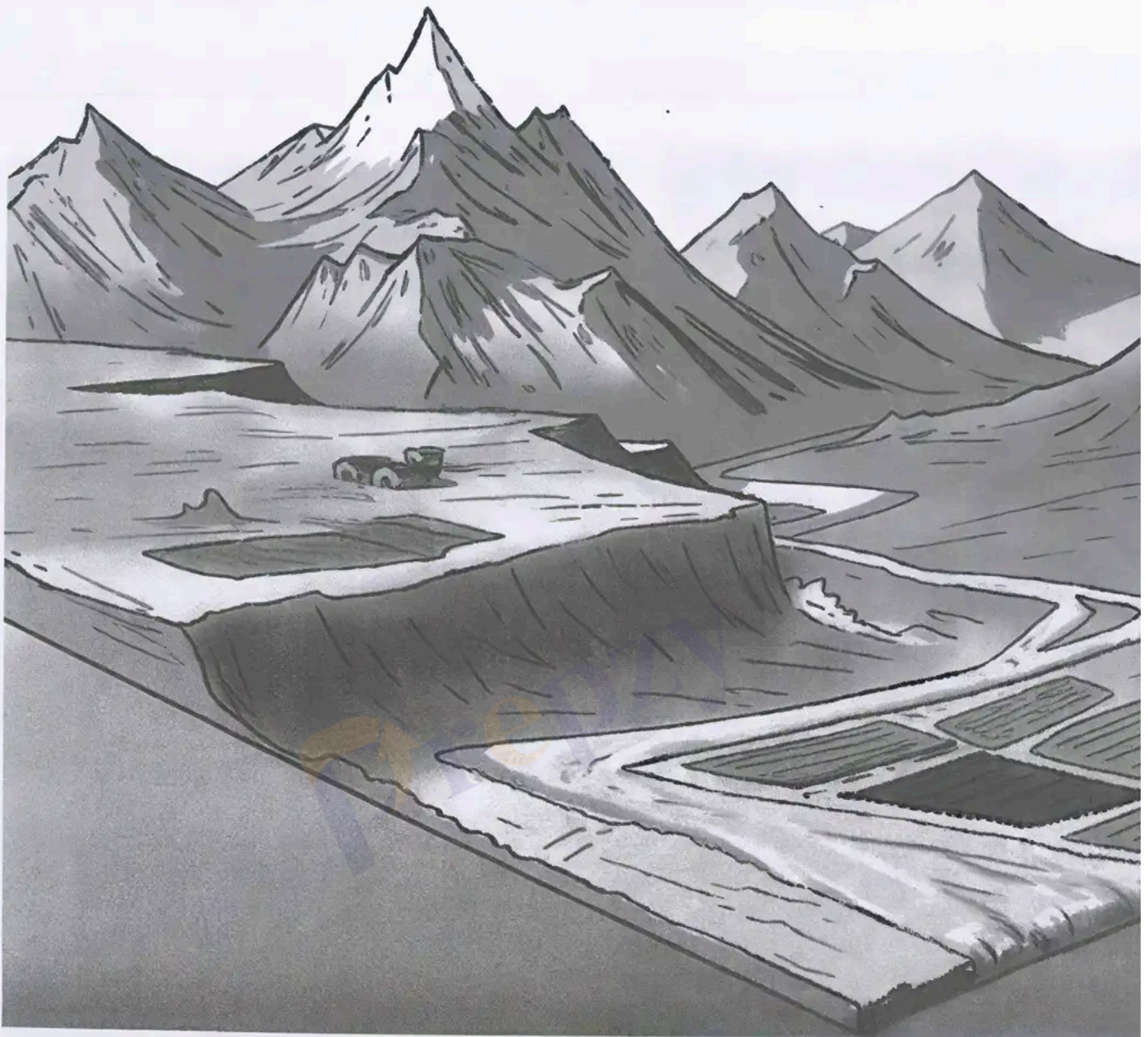
## Introduction

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Humans, like most mammals, live on land.

A landform is a geographic feature found on Earth's surface. With millions of years to form, landforms play a crucial role in environment and

These landforms support a diverse range of flora and wildlife and have varying climates. All landforms have been adapted to by humans, ye



The image shows a glacial valley with a glacier flowing down from the mountains, carving out the land. There are fields and buildings near the valley floor.

**Step-by-step explanation for high school students:**

1. A glacier forms when snow accumulates and compresses into ice over many years in the mountains.
2. This glacier slowly moves downhill due to gravity.
3. As the glacier moves, it scrapes and erodes the land beneath it, creating a deep U-shaped valley.
4. The glacier carries rocks and debris, which shape the valley sides and floor.
5. When the glacier melts, it leaves behind fertile soil in the valley.
6. People use this land for farming and building homes, as shown by the fields and buildings near the valley in the image.

## Identifying features

A broad base, steep slopes and a narrow summit are characteristics of mountains. Depending on their height, some mountains may be covered in snow at higher elevations, the snow may never melt, leaving the mountain perpetually snow-capped. Hills are other highlands that are lower in elevation. Mountains are arranged in mountain ranges, such as the Andes in South America, the Alps in Europe, and the Himalayas in Asia. A few of these

## Exam Question

**Q:** What are the main characteristics of mountains and how do they differ from hills?

**A:** Mountains have a broad base, steep slopes, and a narrow summit. They can be snow-capped depending on height. Hills are lower in elevation.

## Mountain environment

A type of forest known as montane forest, which is home to conifer species like pines, firs, spruces and deodar, is frequently seen covering mountains. Higher up, lichen, mosses and grasses replace the trees.

The two tallest peaks in the Himalayan range are Mount Everest, which is situated between Tibet (China) and Nepal, and Kanchenjunga, which is between Nepal and Sikkim. The tallest peak in the Andes is Mount Aconcagua, which is located in South America. Located in eastern Africa, Mount Kilimanjaro is a solitary peak that is not part of a range. Europe's highest mountain is Mount Blanc. South India's highest mountain is Anamudi, sometimes called "Anai Peak" because it is located in Kerala.

## Exam Question

**Q:** Name some of the tallest mountains in the world and their locations.

**A:** Mount Everest (between Tibet and Nepal), Kanchenjunga (between Nepal and Sikkim), Mount Aconcagua (South America), Mount Kilimanjaro (Africa).

**Mount  
Everest**

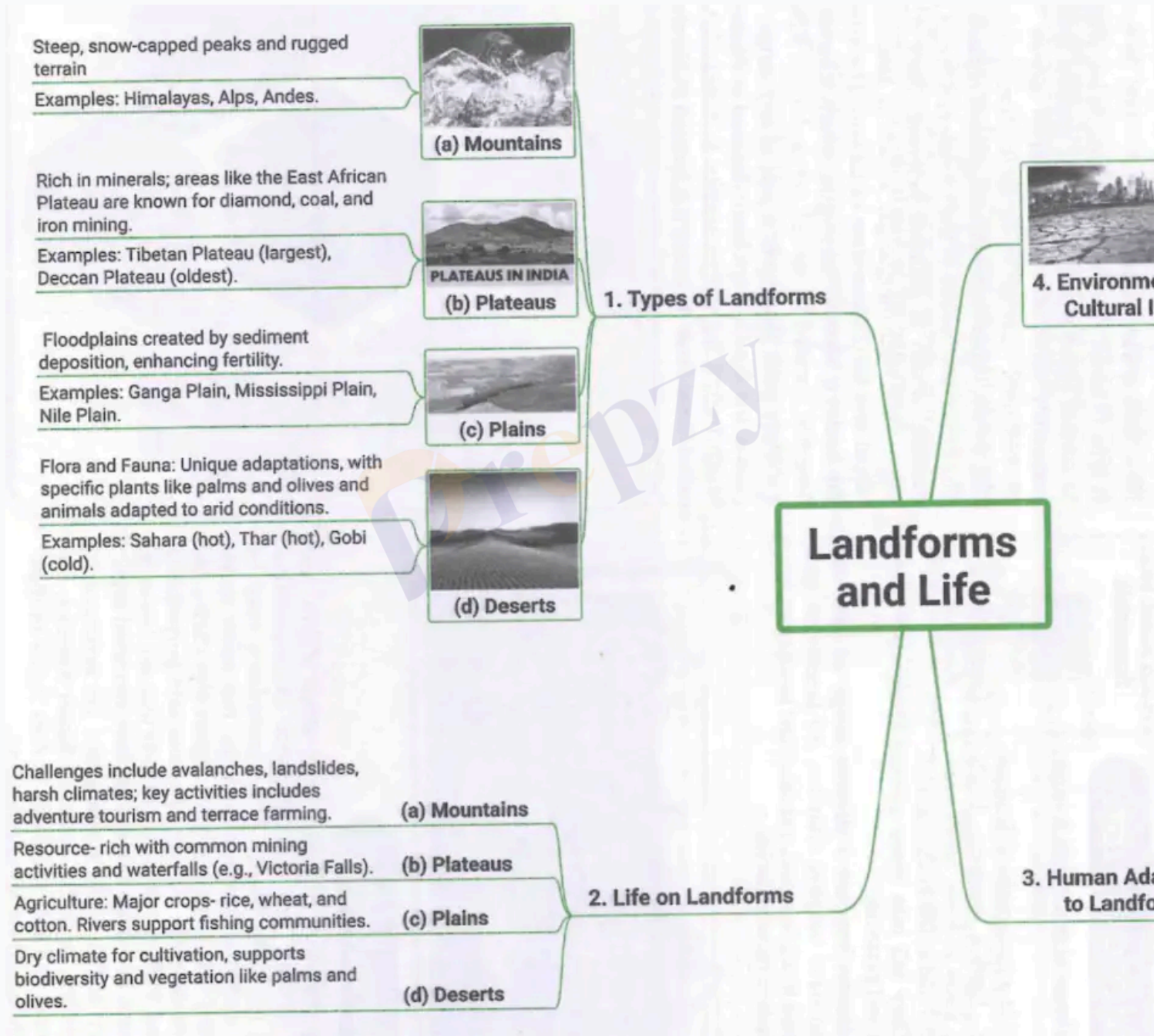
**Mount  
Kilimanjaro**

**Mountains  
of the  
World**

**Mount  
Kanchaenjunga**

**Mount  
Blanc**

This image shows a graphic organizer listing famous mountains around the world: Mount Everest, Mount Kilimanjaro, Mount Kanchenjunga, N



This mind map explains four main landforms (Mountains, Plateaus, Plains, Deserts) and covers their types, life on them, human adaptation, c

### Don't Miss Out

- **Bachendri Pal** started climbing mountains from a young age and led many women's climbing expeditions. She was the first Indian woman to climb Mount Everest (and Padma Bhushan in 2019).
- **Arunima Sinha** lost a leg in an accident when she was 31. With Bachendri Pal's encouragement and training, she managed to climb Mount Everest including Mount Vinson in Antarctica! She was awarded Padma Shri in 2015.

- The Tibetan Plateau has an average altitude of 4,500 m, which explains why it has been nicknamed the 'Roof of the World'. From east to west, it is the world's largest plateau.
- The Deccan Plateau of central and south India is one of the oldest plateaus in the world, formed through volcanic activity millions of years ago.

## Plateaus

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A plateau is a type of landform that rises from the surrounding area and has a relatively level surface, with steep slopes on some of its sides. The Deccan Plateau and the Tibetan Plateau, which is the world's largest and highest plateau, are two examples of plateaus. Plateaus can range from a few hundred meters to over 4,000 meters in elevation.

Plateaus are referred to be "storehouses of minerals" due to their abundance of mineral deposits.

Moreover, there are a lot of breathtaking waterfalls on plateaus. A few examples of these waterfalls are the Jog Falls on the Sharavati River in Maharashtra, the Nagpur Plateau, and the Victoria Falls on the Zambezi River in southern Africa. The Nohkalikai Falls, located in Meghalaya, descend 340 m from the plateau.

### Exam Question

**Q:** What are the characteristics of plateaus and name some famous plateaus and waterfalls?

**A:** Plateaus have a relatively level surface with steep slopes on some sides. Famous plateaus include the Deccan Plateau and Tibetan Plateau.

## Plains

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Landforms with a large, level surface or one that slopes gradually are called plains. There aren't any big hills or deep valleys in them. Typically, plains are found in low elevations.

The earliest civilisation emerged on fertile plains around rivers thousands of years ago. Over 40 crore people, or over 25% of India's total population, live on plains. Plains support a wide range of economic activity due to their gradual slope, which facilitates easy river navigation.

### Exam Question

**Q:** What are plains and why are they important for human settlement?

**A:** Plains are large, level or gently sloping landforms with no big hills or valleys, usually below 300 m elevation. They are important because they support a wide range of economic activity, as seen on the Gangetic plain.

## Deserts

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Generally speaking, deserts are thought to be vast, arid regions with minimal precipitation. They also have distinctive wildlife and plants. The Thar Desert in India and the Sahara Desert in Africa, are extremely hot. Some are chilly, such as Asia's Gobi Desert. As for the continent of Antarctica, some experience extreme cold.

The varied wildlife found in deep forests, flowing rivers, lakes, grasslands and mountain caves includes the golden eagle, peregrine falcon, Crow and black bear.

The greatest river that rises in the Himalayas is known in India as the "Ganga". Steps are carved into the slope to practice cultivation on the slope. The vocation over agriculture in many hilly regions of the world. Often, tourism is a major source of revenue for the locals. For those who live in the hills,

## Exam Question

**Q:** What are deserts and how do people adapt to living in mountainous and highland areas?

**A:** Deserts are vast, dry regions with little precipitation and special plants and animals. People in mountainous areas practice terrace farming.

## Keywords

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- **Precipitation:** Water from the atmosphere reaching the ground in any form – rain, snow and hail are the most common forms of precipitation.
- **Altitude:** The height of an object above sea level.
- **Montane forest:** A type of forest that grows in mountainous regions.
- **Moss:** A small green plant without flowers or true roots, often spreading in a cushion-like cover.
- **Lichen:** A plant-like organism that generally clings to rocks, walls or trees.
- **Terrain:** A piece or stretch of land, from the point of view of its physical features.
- **Valley:** A lower area between hills or mountains, often with a river or stream flowing through it.
- **Flash flood:** A sudden local flood, often caused by a cloudburst.
- **Landslide:** The sudden collapse of a mass of earth or rock from a mountainside.
- **Avalanche:** The sudden fall of snow, ice or rocks from a mountainside; often occurs when the snow starts melting.
- **Cloudburst:** A sudden violent rainstorm.
- **Sea level:** The average level of the surface of the oceans, also called 'mean sea level'.
- **Sediments:** Floodplains are one type of plains formed by rivers originating in mountain ranges, where they collect particles of rock, sand and silt.
- **Resilience:** The capacity to meet challenges and difficulties, adapt to them or overcome them.
- **Confluence:** The meeting point of two or more rivers.

## Solved Examples

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### Example 1

**Question:** Explain how glaciers shape mountain valleys.

**Answer:** Glaciers form when snow compresses into ice and slowly moves downhill due to gravity. As they move, glaciers scrape and erode the valley floor that shape the valley sides and floor. When glaciers melt, they leave behind fertile soil.

### Example 2

**Question:** Why are plateaus called "storehouses of minerals"?

**Answer:** Plateaus often contain abundant mineral deposits formed over millions of years, making them rich sources of minerals. This is why they are called "storehouses of minerals".

## Practice Set

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### Easy

1. What is a landform?
2. Name the three general categories of landforms.
3. What is terrace farming?

### Moderate

1. Describe the characteristics of mountains.
2. Explain why plains are important for human settlement.
3. List two famous plateaus and one waterfall on each.

### Challenging

1. Explain how glaciers contribute to the formation of valleys and fertile soil.
2. Discuss the environmental and cultural impacts of mountains on human life.
3. Compare and contrast deserts and plateaus in terms of climate and human adaptation.

## Answer Key

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### Easy

1. A landform is a geographic feature found on Earth's surface.
2. Plains, mountains, and plateaus.
3. Terrace farming is carving steps into slopes to cultivate crops.

### Moderate

1. Mountains have a broad base, steep slopes, and a narrow summit; some are snow-capped.
2. Plains have fertile soil and gentle slopes, supporting agriculture and large populations.
3. Deccan Plateau (Jog Falls), Tibetan Plateau (Victoria Falls).

### Challenging

1. Glaciers erode land forming U-shaped valleys and leave fertile soil after melting.
2. Mountains affect climate, support unique forests, and influence human activities like farming and tourism.
3. Deserts are dry with sparse vegetation; plateaus are elevated flat areas rich in minerals; humans adapt differently to each.

## Quick Reference

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- **Landforms:** Plains, Mountains, Plateaus, Deserts
- **Mountain Features:** Broad base, steep slopes, snow-capped peaks
- **Plateaus:** Elevated flat land, mineral rich
- **Plains:** Flat or gently sloping land, fertile soil
- **Deserts:** Arid regions with special plants and animals
- **Human Adaptations:** Terrace farming, herding, mining, tourism

## Glossary

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### Precipitation

Water from the atmosphere reaching the ground in any form – rain, snow and hail.

### Altitude

The height of an object above sea level.

### Montane forest

Forests that grow in mountainous regions.

### Moss

A small green plant without flowers or true roots.

### Lichen

A plant-like organism that clings to rocks, walls or trees.

### Terrain

A stretch of land viewed by its physical features.

### Valley

A low area between hills or mountains, often with a river.

### Flash flood

A sudden local flood caused by heavy rain.

### Landslide

The sudden collapse of earth or rock from a mountainside.

### Avalanche

The sudden fall of snow, ice or rocks from a mountainside.

### Cloudburst

A sudden violent rainstorm.

### Sea level

The average level of the ocean surface.

### Sediments

Particles of rock, sand and silt deposited by rivers.

### Resilience

The capacity to adapt to or overcome challenges.

### Confluence

The meeting point of two or more rivers.