Name: Date:

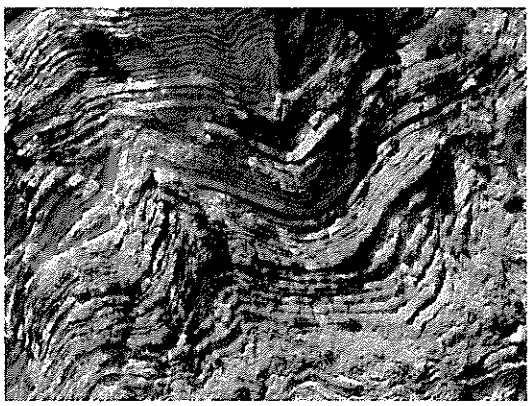
What Are Fold Mountains? How Are Fold Mountains Formed?

You are standing on K-2, the second-highest mountain on the Tibetan Plateau, an area that is known as "the roof of the world" because of its height. You breath comes in ragged gasps as you struggle to get enough oxygen in the thin air. You look down, and then around. You are far above the clouds, that is how high you are! All around you are jagged, snow-covered peaks. These are the mountains of the Himalaya Range, the world's newest chain of fold mountains. Fold mountains, also known as "folded" mountains, are the most spectacular mountains in the world.

Fold Mountains Are Formed When Continents Collide

Earth's rocky upper surface is broken into giant pieces called plates. These plates move slowly and constantly, riding atop a layer of hot rock that circulates up and around under the plates. This motion is driven by the super-hot core. The core acts like the fire under a pot of boiling water, and it is what causes the movement of the heated rock and the plates above it.

The sharp peaks of K-2, Everest, and the other mountains of the Himalayas form when two of those plates move toward each other. If both plates carry continental rock, the rock is slowly squeezed. Tremendous pressure causes some of the rock to crumble and break, forming jagged mountain tops like those in the Himalayas.



As the rock is squeezed and compressed, it also heats up. The heat is generated by the forces that squeeze the rocks between them. As the rock is squeezed and as it heats up, it softens. Rock layers that had stayed undisturbed for millions of years now bend and fold. You can see the folds as you look at the sides of some folded mountains. Bands of different-colored rock are bent into wave-like shapes.

Famous fold mountain ranges include the Himalayas, the Alps, and the Canadian Rockies.

The Himalayas are Earth's youngest mountains. The Himalayas are still growing! What is causing the Himalayas to form?

The subcontinent of India is actually one of Earth's plates. Over about a hundred million years, the India Plate moved slowly from a position near Antartica toward Asia. As the India Plate moved, it pushed rock from the ocean floor before it. Then, as it pushed into the Eurasian Plate, it caused the formation of the Tibetan Plateau and the Himalayas

The Alps are Europe's tallest mountains. Skiers, hikers, and tourists from all over the world flock to these beautiful mountains. How did the Alps form? About 300 million years ago, as the supercontinent Pangea began to break up, parts of the old Pangea collided with each other. This collision formed the Alps.

The Rocky Mountains were formed when terranes, pieces of land smaller than continents, collided with North America between 80 and 55 million years ago. The northern Rockies, in Canada, are fold mountains, formed when continental rock collided.

Check your understanding:

1. Explain how fold mountains are formed.

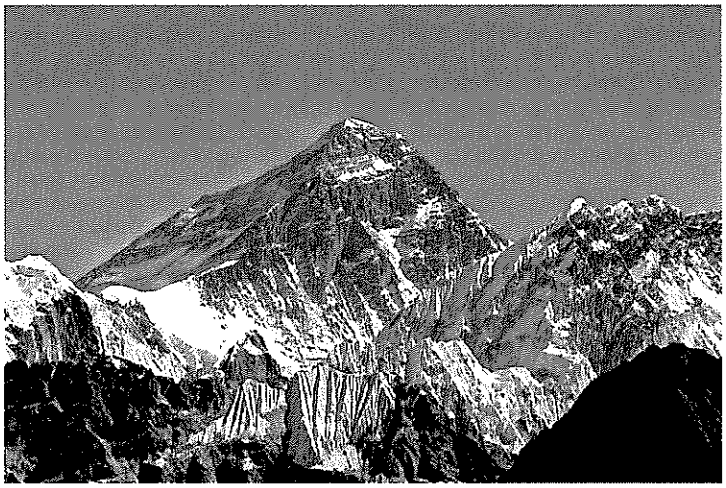
2. How does the rock in fold mountains become soft enough to bend and fold?

3. Name three famous fold mountain ranges. Pick one and explain how and when it was formed.

Name: Date:

What Is the Tallest Mountain in the World? Mount Everest Has Rivals!

Mount Everest: The Highest Altitude[1]



Almost everyone knows that Mount Everest is the highest mountain in the world. Climbers from all over the world travel to Everest hoping to earn the distinction of climbing the "World's Tallest."

The peak (highest point) of Mount Everest is 8,848 meters (29,028 feet) above sea level. This high elevation gives Mount Everest the distinction of being the mountain with the highest altitude.

Chimborazo: Highest Above Earth's Center

Chimborazo in Ecuador has an altitude of 6,310 meters (20,703 feet), which is less than Mount Everest. Chimborazo, however, has the distinction of being the highest mountain above Earth's center.

This is because Earth is not an exact sphere. Earth is widest at its equator. Chimborazo is just one degree south of the equator. The peak of Chimborazo is 6,384 kilometers from Earth's center, the center of the inner core. This is 2 kilometers further from Earth's center than the peak of Everest!

---

[1] Everest image credit: Rdevany, Creative Commons Attribution-Share Alike 3.0 Unported

Mauna Kea: Earth's Tallest Mountain

Mauna Kea is part of the Hawaiian Islands. Mauna Kea has an altitude of 4,205 meters (13,796 feet) - much lower than Mount Everest. Mauna Kea is an island, however. Mauna Kea is actually a volcano that rises from the ocean floor. If we measure the distance from its peak to its base on the ocean floor, we find that it is more than 10,000 meters tall!

At more than 10,000 meters tall compared to Mt. Everest's 8.848 meters, Mauna Kea is the world's tallest mountain - but only if you count the part that's under water!

Check your understanding by finishing these sentences:

1. Mt. Everest is the mountain with the highest altitude because:

2. Chimborazo's peak is the furthest from Earth's center because:

3. Mauna Kea can be called the tallest mountain because: