MSU Science Zone

No. 29

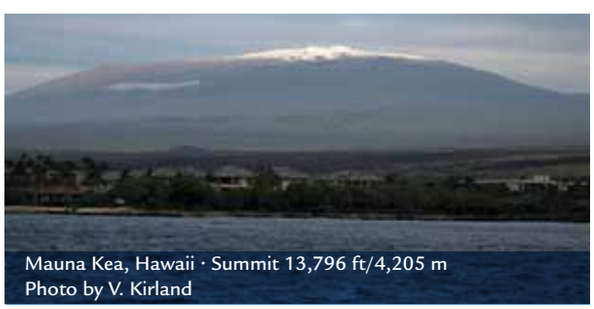
What is the world's tallest mountain?

The world's tallest mountain is Mount Everest—a huge pyramid-shaped peak in the Himalaya Mountains. Part of it is in the country of Nepal and part is in Tibet. Scientists still debate exactly how tall Mount Everest is, but it is approximately 29,029 ft (8,848 m), which is about the altitude that jet planes fly. It is so high that there is only about ⅓ as much oxygen available to breathe as at sea level.

Surprisingly, there are several other mountains that could also be called the world's tallest mountain if you use a different way to measure. **Mount Everest** is the place where the Earth's surface is the greatest distance from sea level. However, if you measured the mountain that is highest from top to bottom, in other words from its base on land to its highest point, then **Mount McKinley** in Alaska (also called Denali) would be the tallest. It rises about 18,400 ft/5,600 m from the ground below it. If you measured the mountain that is tallest from its base and included mountains that have a base underwater, then **Mauna Kea** in Hawaii would be the tallest. It is a volcano that has risen 33,464 ft/10,200 m/6.3 miles above the sea floor. One last mountain that could be considered the world's tallest is **Chimborazo** in Ecuador. It is only 20,565 ft/6,268 m tall, but it is located at the Equator where the Earth swells out. So the summit of Chimborazo is over a mile further from the Earth's center (3,967.1 miles/6,384.4 km) than the summit of Everest (3,965.8 miles/6,382.3 km).

During the spring of 2012, a team of climbers including an MSU scientist and several Montanans will be attempting to climb Mount Everest on the Everest Education Expedition. Your class can track the progress of the climbers and learn about the science of the region as the team sets out to commemorate the 50th anniversary of the first American ascent of Everest. Follow along and join the adventure! Visit ***www.montana.edu/everest*** to learn more.

Mount Everest, Nepal & Tibet · Summit 29,029 ft/8,848 m



Mauna Kea, Hawaii · Summit 13,796 ft/4,205 m
Photo by V. Kirland

Mount McKinley, Alaska · Summit 20,320 ft/6,194 m

Chimborazo, Ecuador · Summit 20,565 ft/6,268 m
Photo by David Torres Costales

Try this!

1. Which way of measuring the world's tallest mountain do you think is the best:
   1) tallest from sea level (Mount Everest);
   2) tallest from its base on land (Mount McKinley);
   3) tallest from its base on land or in water (Mauna Kea);
   4) tallest when measured from the center of the Earth? Why?

   _____

   _____

   _____

2. With the help of an adult, go online and find out the elevation (the distance above sea level) of the place where you live. Write it down here _____. Are you at a higher elevation than the places listed below?

   · The top of the highest mountain in Australia—Mount Kosciuszko. *It is 7,310 ft/2,228 m*
   Yes / No

   · The highest mountain in England—Scafell Pike. *It is 3,209 ft/978 m*
   Yes / No

   · The elevation of Old Faithful in Yellowstone National Park. *It is 7,349 ft/2240 m*
   Yes / No

   · The top of Montana's highest building—the First Interstate Center in Billings. *It is 272 feet/83 m tall (20 stories). Billings is at an altitude of 3,123 ft/952 m*
   Yes / No

   · The top of the Montana state capitol building. *The state capitol building is 165 ft/50 m tall. Helena is at an altitude of 3,875 ft/1237 m*
   Yes / No

3. One story in a house is approximately 10 feet. Other types of buildings can have much bigger stories than 10 feet. If you could build a house at sea level as tall as Mount Everest, how many stories would it be?

   _____

3. 2,902 stories