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EVEREST

On Top of the World



Written by Ned Jensen

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Introduction



Every year, when weather conditions permit, hundreds of men and women with an incredible spirit of adventure start a grueling climb. It is a climb they hope will take them to the top of the world. It is a climb to the **summit** of the world's tallest mountain, Mount Everest.

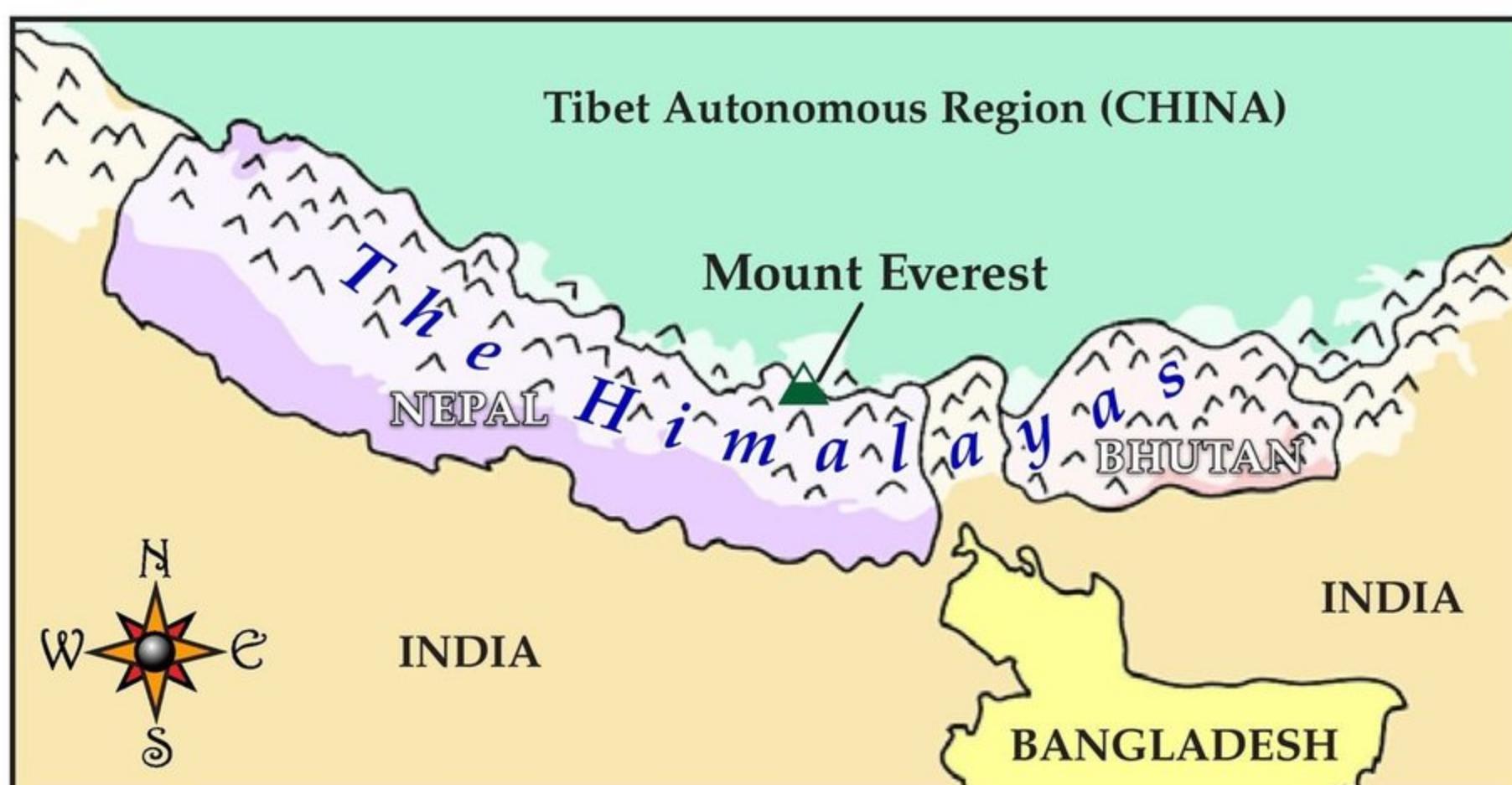


Strength, careful planning, good weather, the right equipment, and a measure of luck all contribute to a successful summit.

Mount Everest

Mount Everest is located in Asia, along the border of Nepal and the Tibet Autonomous Region of China. It is 60 million years old and is the tallest mountain in a chain of extremely high mountains called the Himalayas.

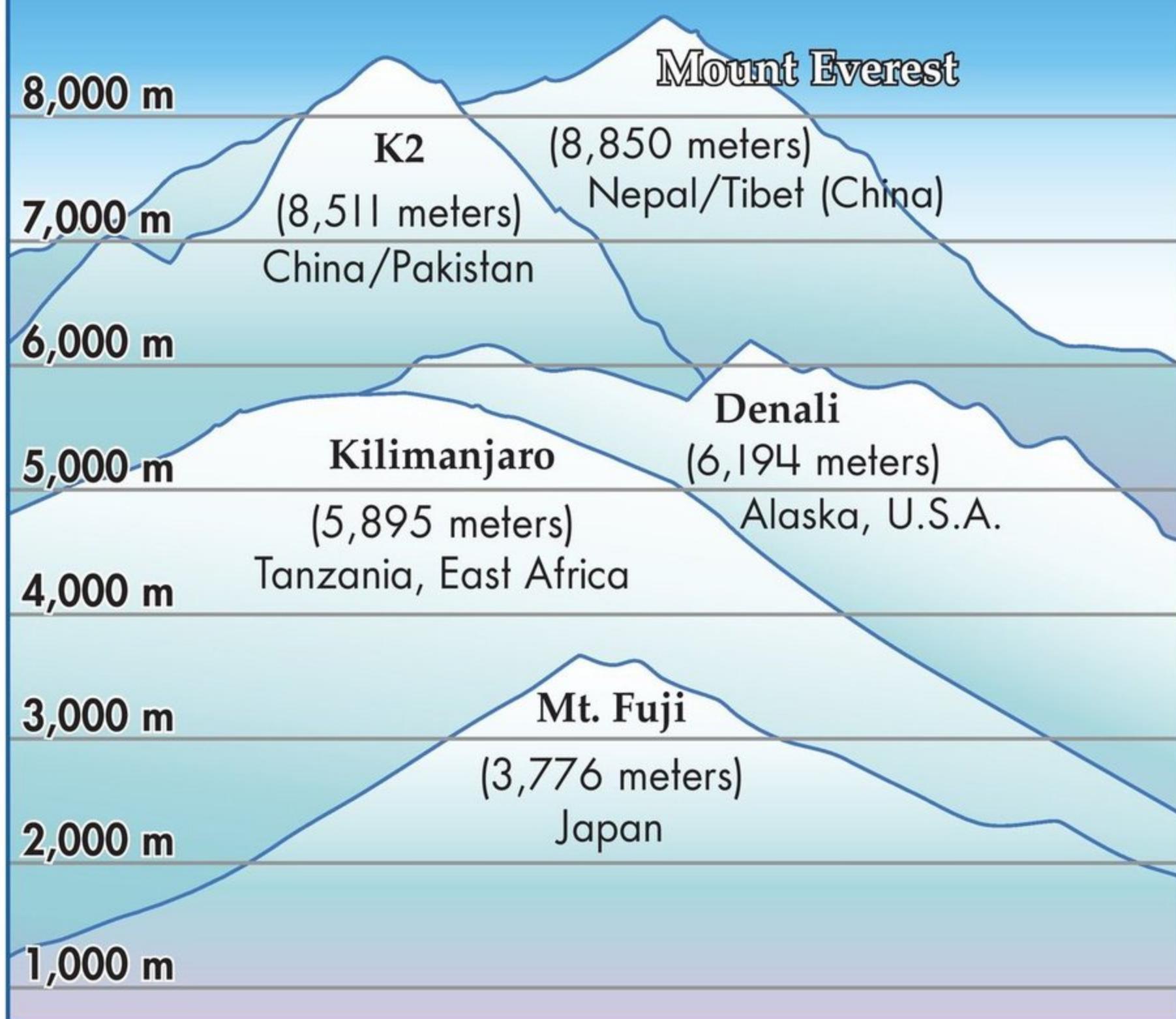
Location of Mount Everest and the Himalayas



The Himalayas and Mount Everest are located near a **fault** between two moving plates, or pieces of Earth's crust. One of the plates is moving under the other, forcing the top plate to rise and form mountains. Mount Everest continues to grow about 6 centimeters (2.4 in) per year.

Mount Everest towers 8,850 meters (29,035 ft) above sea level. That is almost as high as a passenger jet flies, and almost 305 meters (1,000 ft) taller than K2, the world's second tallest mountain.

A Comparison of Well-Known Mountains



Many people consider it the ultimate challenge to reach the tallest point on Earth. The climb to the top of Mount Everest is filled with dangers. Steep cliffs of rock and ice, deep crevasses, and moving slabs of ice and snow stand between climbers and the summit. The air near the top of Mount Everest has far less oxygen than the air at lower elevations. This makes breathing very difficult, and climbers tire easily. Add to these factors the possibility of high winds and subzero temperatures, and the top of the world seems almost unreachable.



Constantly shifting chunks of ice make the Khumbu icefall one of the most dangerous parts of the southern route up Everest.

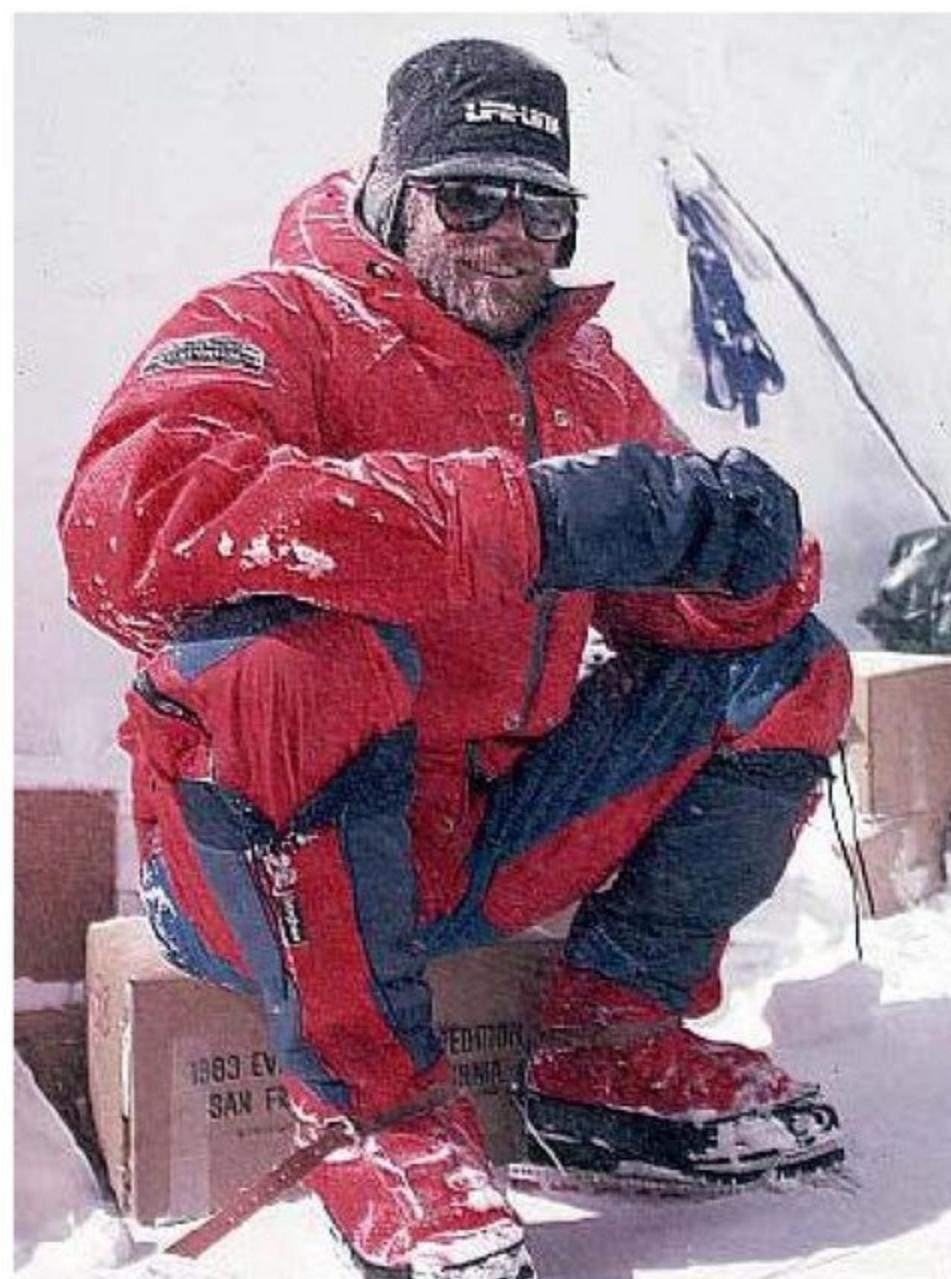
Preparing for the Climb

If you ever want to climb Mount Everest, you better make sure that you are in tip-top shape. The climb is very **strenuous** and will place huge demands on your body. Climbers spend years getting in shape and practicing their skills by climbing other challenging mountains. Climbers also spend extra time at high elevations to **acclimate** to the thinner air.

Climbing Mount Everest does not come cheap. Joining an expedition led by experienced climbers can cost as much as \$65,000 (U.S.), not including personal gear, air fares, and insurance costs.

The least expensive climb is estimated to be around \$30,000. Even oxygen, at \$300 a bottle, is very expensive, and each climber needs to take up to 20 bottles of oxygen—that's \$6,000. You need \$10,000 just to get a permit from the government of Nepal.

Your gear and preparation can save your life. An Everest climber needs to stay warm, dry, rested, and hydrated.



To survive on the mountain, climbers need a huge amount of special clothing, climbing gear, camping gear, and high-altitude food, some of which is shown below.

Clothing

Gore-Tex® pants and jacket



Lightweight down coat

Heavyweight down suit

Warm head gear



Several pairs of thermal socks

Sunglasses and goggles

Water-resistant gloves

Heavy down mittens

Fleece top and pants

Climbing Gear

Heavy climbing boots (two sizes too big, for extra socks)

Harness

Crampons (metal shoe spikes)

Ice ax

Face mask



Maps, Compass



Oxygen (20 canisters)

15 meters of rope

Camping Gear

Large tent for base camp

Bottled gas

Smaller, high-quality tents for higher elevations

Cooking stove

Down sleeping bags (2–3)

Water purifier

Sleeping pads





The Climb



The safest times to climb Mount Everest are spring and fall, and May is the most popular month. A climb can take two months, so it must be carefully planned to avoid dangerous weather. During the winter, temperatures on Mount Everest can reach -50° Celsius (-58°F). During the summer, enormous storms dump meters of snow on the mountain.



Climbers often tour ancient temple sites in Nepal's capital city of Kathmandu before beginning their trek up Everest.

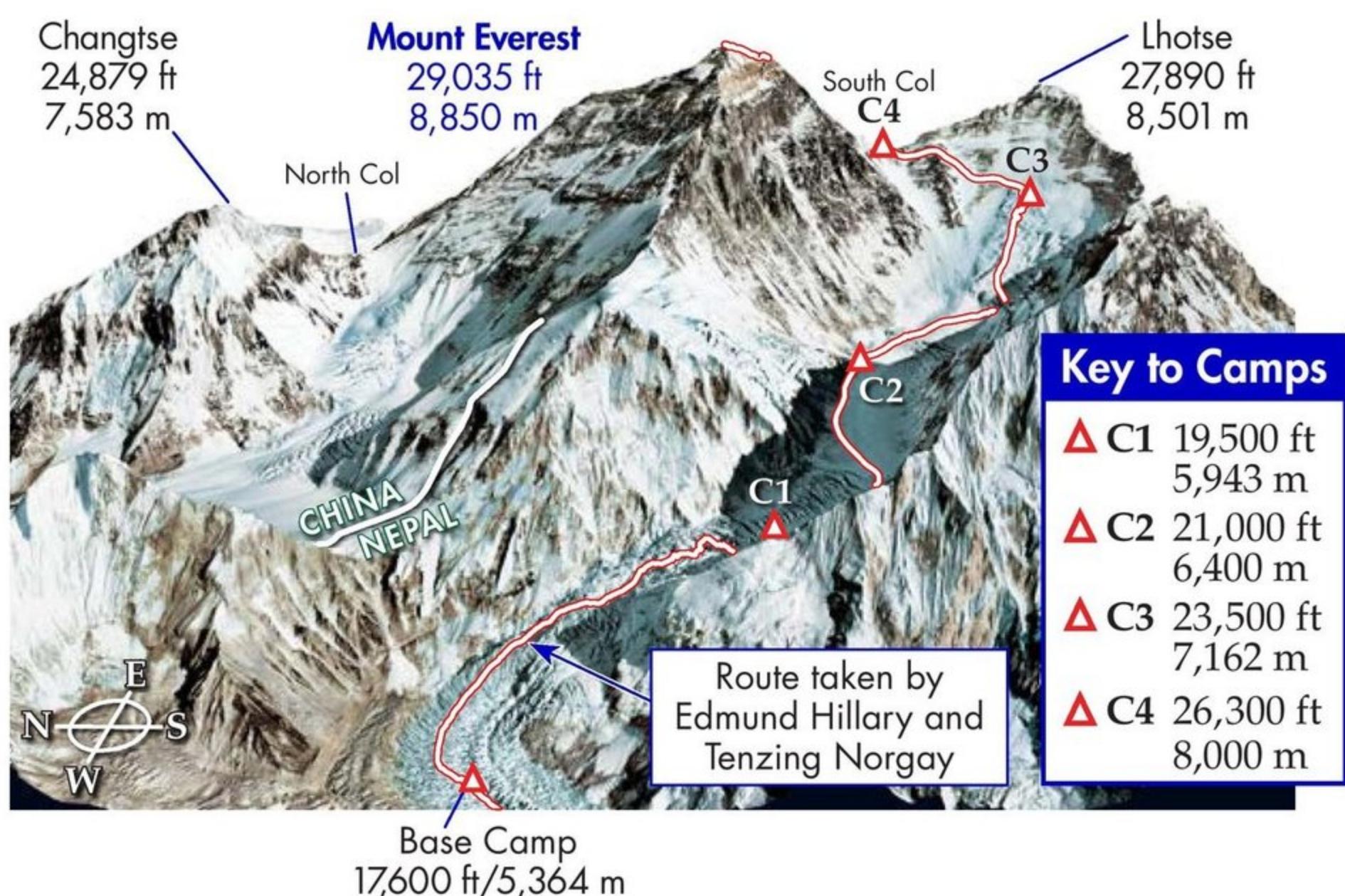


The Advance Base Camp on the northern slope of Everest sits at 21,000 feet.

There are up to 15 routes to the top of Mount Everest, and most begin at Base Camp. Base Camp lies almost 5,500 meters (18,000 ft) above sea level, but is still 3,219 meters (11,000 ft) below the summit. The trek to Base Camp alone can take 10 days. At Base Camp, climbers must spend about a week resting and acclimating to the high altitude. Then, climbers spend a few weeks hiking up to higher camps and back down. They must go back and forth to each camp several times before moving on to the next one. This gives them the chance to get used to working hard in the thin air.

Once the climbers are settled at the highest camp, they watch the weather reports and look to the sky. It may take several tries over several days to reach the top, and the weather conditions must be favorable. Winds should be no more than 32 kilometers per hour (20 mph), and the skies should be clear of snow. If the weather turns **inhospitable**, climbers may have to spend several days inside their tents. They may even have to return to Base Camp.

It takes about 12 hours to reach the summit from the highest camp. The final trip usually starts around midnight so that climbers will be able to return before dark the next day. The last 100 meters (300 ft) is the most difficult. It includes the Hillary Step, a cliff of ice and rock named after Sir Edmund Hillary.



After climbers reach the top, they may spend an hour or so enjoying the view and the sensation of sitting on top of the world. Then they try to make their way down before sunset. Descent back to the highest camp usually takes about four hours.



Sunset at the top of the world. Climbers have little time to enjoy the view.

2004 and climbed in a record 8 hours, 10 minutes. Sherpas can climb much faster than most other people because their bodies are adjusted to the high altitude.

Not all climbers take their time getting to the top. In 2003, on separate occasions, two **Sherpas** climbed from Base Camp to the summit in under 13 hours. One of them, Pemba Dorje, then returned in



Sherpas



About 500 years ago, the first Sherpas crossed over into Nepal from a region known as Tibet. They were originally herders and traders, but since settling under the shadow of Mount Everest, they have become known for their skill in guiding climbers up the mountain.

Living in such a high-altitude region has allowed Sherpas to adapt to the thin air and cold temperature of the Himalayas. Their bodies are better suited to breathing less oxygen, and they easily outperform people who come from lower-altitude regions. This explains why Sherpas make such good guides and **porters** for mountain climbers. But even most Sherpas need extra oxygen when they get near the top of Mount Everest.



People plant new trees above a Sherpa village. The Himalayan Trust Foundation, begun by Sir Edmund Hillary, supports re-forestation, teacher training, and hospital programs in Sherpa villages in Nepal.



Nepalese Sherpa guides and route strategists are an invaluable asset to any Everest climb.

Strong, knowledgeable, and adaptable, Sherpas are synonymous with climbing Everest. Their understanding and skills provide a very important service to other climbers. They act as guides and consultants, carry gear, and prepare food. They are justifiably proud of their mountaineering **heritage** and legend.

Do You Know?

Sherpa men are often named for the day of the week on which they were born, or for a particular virtue. This explains why many Sherpas have the same first name. Most Sherpas use only one name. Common names include Tenzing, Ngawang, Tashi, and Dorje.



The First to the Top

A team of climbers from Great Britain was the first to attempt to reach the top of Mount Everest. They set out for the summit in 1921, but failed.

In 1924, George Mallory (who tried in 1921) and Andrew Irvine attempted to reach the summit. They were last seen above Camp VI (Camp 6). Years passed without anyone knowing their fate. In 1999, a group of climbers came across Mallory's body 305 meters (1,000 ft) below the summit. No one knows for sure if he made it to the top and was heading back down when he fell to his death, but it is doubtful that he succeeded.

In 1953, another team set out to climb the world's tallest mountain. On May 29, 1953, Sir Edmund Hillary and Tenzing Norgay crept slowly up the frozen side of the mountain and became the first to reach the summit. It had taken them seven weeks from the day they arrived at Everest base camp.

Edmund Hillary was a beekeeper from New Zealand (he was made a knight after he climbed Everest, making his name "Sir" Edmund Hillary), and Tenzing Norgay was a Sherpa. Hillary and Norgay's achievement was celebrated around the world.



Sir Edmund Hillary (left) and Tenzing Norgay on the summit of Mount Everest after their historic 1953 climb.

Neither of these climbers sought fame or fortune, but they used their fame to benefit the people of Nepal. Sir Edmund Hillary established a foundation that has built hospitals, medical clinics, schools, and bridges. The foundation is also responsible for planting hundreds of thousands of trees in the Himalayas.

Tenzing Norgay established a climbing school, and dozens of his students have reached the top of Mount Everest. Like Hillary, Norgay used his success to help improve educational opportunities for Sherpa children.



Climbers



Many people thought that after Hillary and Norgay reached the top of Mount Everest, no one would want to do it again. But the opposite is true. Since the 1920s, thousands of people have attempted to reach the summit of Mount Everest. By 2010, over 3,300 had accomplished their goal.



Men and women, young and old come from all over the world to make the attempt. Climbers from Austria, Bosnia, China, Germany, Great Britain, Canada, Italy, Japan, Mexico, Russia, the United States, and many other countries have reached the top.

Japanese mountaineer Takako Arayama, then age 70, approaching the summit of Everest from the Tibetan side, May 2006

There have been many new firsts over the years. In 1975, Junko Tabei, from Japan, became the first woman to scale the mountain. In 1978, the first person climbed to the summit without the aid of bottled oxygen. In 2000, a climber skied all the way down from the top. A year later, another climber snowboarded down from the summit. In 2001, Eric Weihenmayer became the first blind person to reach the top. No one knows what future firsts there may be.

A Sherpa by the name of Apa Sherpa has made it to the top of Mount Everest a record 20 times.

He reached the summit for the twentieth time in May 2010. Also in May 2010, 13-year-old Jordan Romero became the youngest to climb Everest, a record previously set in 2001 by a 15-year-old Sherpa. That same May 2010 weekend, over 200 climbers made it to the summit. The oldest person to reach the summit by May 2008 was a 76-year-old Nepalese climber.

Do You Know?

World expeditionist Peter Hillary, the son of Sir Edmund Hillary, followed in his father's footsteps. Peter has climbed to the top of Mount Everest twice, once in 1990 and again in 2002.

Timeline of Major Everest Climbing Feats



High altitude Nepali guide Apa Sherpa reached the summit of Mount Everest for a record twentieth time in May 2010.

- 1921** First attempt—British team
- 1924** George Mallory disappears
- 1953** Sir Edmund Hillary and Tenzing Norgay reach the top
- 1975** First female climber makes the summit
- 1978** First climber to reach the summit without bottled oxygen
- 1980** First solo climb
- 1996** Storm kills 15—most in a single year
- 1999** George Mallory's body found
- 2001** First blind person reaches the top
- 2004** Fastest climb recorded at 8 hours, 10 minutes
- 2008** Oldest person to reach the summit (age 76)
- 2010** Apa Sherpa beats own most-climbs record (20)
- 2010** Youngest person to reach the summit (age 13)



Dangers



Nearly 10 percent of those who attempt to climb Mount Everest die. The year 1996 was a particularly fatal year for climbers when a single storm claimed 15 lives. From 1922 to 2009, more than 220 climbers died climbing the mountain.

The greatest cause of death on Mount Everest is avalanches. Many climbing routes follow glaciers, which are moving rivers of ice. As the ice flows slowly downhill, enormous chunks can break off and collapse. The moving ice also has huge cracks called crevasses, which are sometimes hidden by a thin layer of snow. One misstep can send a climber plunging to his or her death.

Years	Successful climbs	Deaths
1922 to 1972	30	29
1973 to 1982	107	33
1983 to 1992	350	55
1993 to 2002	1,170	58
2003 to 2010	2,800+	48+
Estimated totals*	4,457	223

*Official counts are often in dispute. Many sources estimate that by the end of the 2010 climbing season, 5,000 people will have reached the summit of Mount Everest.

Climbers must be prepared to deal with the effects of climbing in an oxygen-poor environment. Even at heights above just 3,000 meters (10,000 ft), humans can experience **nausea**, headaches, confusion, loss of muscle coordination, and even **hallucinations**. At higher elevations, climbers can suffer from a life-threatening condition known as **edema**, a condition where fluid begins to collect in the brain or the lungs.

The higher up the mountain a person climbs, the more difficult it becomes to breathe. At 5,500 meters (18,000 ft), a climber is breathing only half of the normal amount of oxygen.

Near the summit, breathing capacity drops to 30 percent of normal. A climber's heart pounds and breathing is very difficult. Climbers must stop and rest even when putting on their boots.

At high altitudes, the thin air blocks out fewer of the Sun's harmful rays. Exposed skin can be severely sunburned, and without proper eye protection, the Sun can burn a climber's eyes in a matter of minutes. Light reflecting off the white snow can cause a person to go temporarily blind. It is very important to wear eye protection, even during cloudy periods.

Winds on Mount Everest can blow at hurricane force, more than 161 kilometers per hour (100 mph). These frigid winds can freeze exposed skin in less than a minute. Frostbite is a serious danger, and some unfortunate climbers have had fingers, toes, and even their noses **amputated**.

Dehydration is also a serious problem for climbers, so it is important to drink lots of water. Because of the low temperature, all water must be re-melted before climbers can drink it.



A porter carries an injured climber in a straw basket on his back. It will take two days of hard traveling for them to reach an area where the injured man can be flown by helicopter to a hospital.



Conclusion



Climbing Mount Everest is not for the faint of heart. In fact, when you consider the danger posed by freezing temperatures, high winds, blinding snow, and lack of oxygen, to say nothing of avalanches, crevasses, and icy slopes, you wonder why anyone would do it. It is the thrill of adventure, the sense of accomplishment, and the feeling of being on top of the world that brings thousands of people to Mount Everest.



Thirteen-year-old Jordan Romero became the youngest person to climb Everest in May 2010.



At the Library

Ask your librarian to help you find books on Mount Everest. You can find biographies of famous climbers, real-life adventure stories about climbing expeditions, and even guides on how to start climbing mountains yourself. For more adventures, look up other subjects, such as mountain climbing, arctic exploration, and the Himalayas.

You can also find many films, movies, and television specials about Mount Everest at your local library or video store.

On the Internet

- A. In the address window, type *www.google.com*.
- B. In the search window, type the subject you are interested in, such as *Mount Everest records*, *Edmund Hillary*, or *Sherpas*. Click on “Google Search.”
- C. Read the colored links. Click on one that looks interesting.
- D. When you want to explore more links, click on the back arrow at the top left.
- E. You can even find websites that track Mount Everest climbers as they go up!



Glossary



acclimate (<i>v.</i>)	to get used to a new climate or situation (p. 8)
amputated (<i>v.</i>)	cut off (p. 23)
crevasses (<i>n.</i>)	deep cracks in glacier ice (p. 6)
dehydration (<i>n.</i>)	a dangerous lack of water (p. 23)
edema (<i>n.</i>)	a condition in which fluid collects in organs or body tissues (p. 22)
fault (<i>n.</i>)	a crack in Earth's crust along which movement occurs (p. 5)
hallucinations (<i>n.</i>)	things a person sees or hears that aren't really there (p. 22)
heritage (<i>n.</i>)	a characteristic or culture handed down through family (p. 15)
inhospitable (<i>adj.</i>)	harsh, unwelcoming, challenging to live in (p. 12)
nausea (<i>n.</i>)	feeling sick to one's stomach (p. 22)
porters (<i>n.</i>)	people who carry goods and equipment (p. 14)
Sherpa (<i>n.</i>)	Himalayan people who live in Nepal and Tibet, near Mt. Everest (p. 13)
strenuous (<i>adj.</i>)	requiring great effort, energy, or strength (p. 8)
summit (<i>n.</i>)	the highest point of a mountain (p. 4)

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Front cover: The peak of Mount Everest shrouded in mist

Title page: Climbers crossing the difficult Hillary Step at the peak of Mount Everest

Back cover: Climber approaching the summit of Mount Everest

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