

# Make a 3D Topo Model of Denali

Explore North America's highest mountain by making a topographic model!



Activity adapted from *Instructables: How to Make a Topographic Model* by Kelly U.B. [www.instructables.com/How-to-Make-a-Topographic-Model/](http://www.instructables.com/How-to-Make-a-Topographic-Model/)

**Materials:** 3 sheets craft foam cut into quarters (or recycled cardboard), topographic template of Denali printable, scissors, marker, glue.

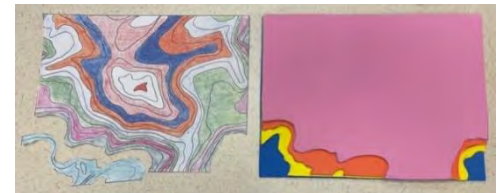
## How to Build Your Model:

**First layer:** Trace the template outline onto the foam. Cut out the rectangle. This will be your base layer.

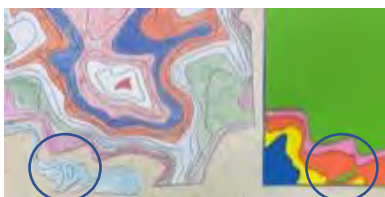
**Second layer:** Cut out the lowest elevation layer (yellow area: 10,000 ft). Trace the outline of what is left of the template onto a piece of foam. Cut out the foam shape and glue on top of the first layer.

**Third layer:** Cut out the next elevation (light brown: 11,000 ft) and repeat the process. Glue on top of the second layer.

**Next layers:** Repeat the same process for each elevation layer in the following order: blue (12,000 ft), gray (13,000 ft), pink (14,000 ft), green (15,000 ft), light purple (16,000 ft), orange (17,000 ft), dark purple (18,000 ft), light red (19,000 ft), white (20,000 ft), dark red (above 20,000 ft).

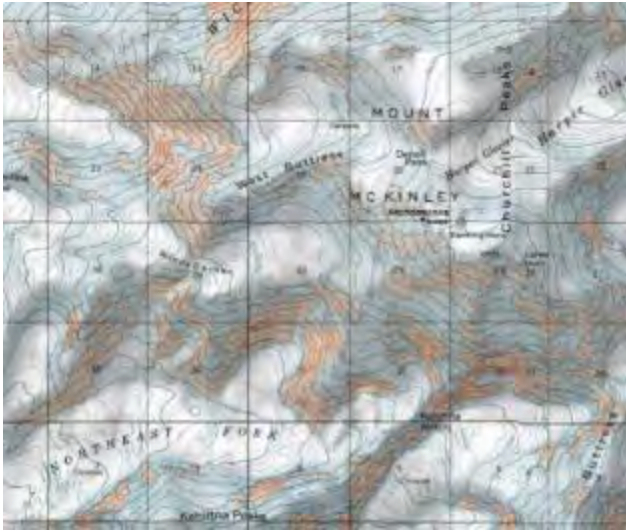


Enjoy your Denali topographic model! Can you find the steepest areas of the mountain? Explore the history of climbing Denali: trace a route to reach the summit!



*Hints: Save the pieces which include an additional elevation layer so you can cut the small shape out in the next layer. For a more detailed model with twice as many layers, include the 500ft elevation lines between each 1000ft elevation. Print the template in a larger size for a larger model.*

# Explore Topo Maps and Denali



Denali Topo Map by Topozone.com

**What is a topographical map?** A topographical or “topo” map is a special kind of map that uses contour lines to show the shape of the Earth’s surface. Imaginary lines are drawn between points that have the same elevation. The elevation is measured above or below sea level, which usually has an elevation of 0ft. Topo maps make it possible to show height, shape, and steepness of slopes. Topo maps are used to plan outdoor travel, especially in hiking and mountaineering.

**Watch an introduction to topo maps:**

[www.pbs.org/video/whats-topographical-map-mvag63/](http://www.pbs.org/video/whats-topographical-map-mvag63/)  
(courtesy of PBS Kids)

**How high is Denali?** Denali is the highest mountain in North America, at 20,310 feet. In other parts of the world, there are much higher mountains, yet Denali distinguishes itself as one of the tallest with an 18,000 foot rise from base to summit. More than 32,000 people have tried to climb Denali, but far fewer have succeeded.

**Learn more about climbing Denali:**

[www.youtube.com/watch?v=QnR0cG8uJ78](http://www.youtube.com/watch?v=QnR0cG8uJ78)

(Courtesy of PBS Kids)



NPS photo.

**The legend of Denali:** In the Dené language, Denali means “The Great One”. Learn about the traditional legend behind the mountain from Chief Mitch Demientieff of Nenana:

[www.nps.gov/dena/learn/historyculture/legend-of-denali.htm](http://www.nps.gov/dena/learn/historyculture/legend-of-denali.htm)



Bradford Washburn in Ruth Gorge in 1995.  
Image: Brian Okonek.

**Who was Bradford Washburn?** Washburn was one of the leading American mountaineers from the 1920s through the 1950s. He climbed Denali three times (1942, 1947, and 1951). The 1951 climb was the first ascent of Denali using the West Buttress route. His wife, Barbara Washburn, was the first woman to summit Denali (in 1947). Washburn also pioneered the use of aerial photography to map mountains in Alaska. In 1960, he published a topographical map of Denali.

**Listen to interviews with Bradford and Barbara Washburn:**

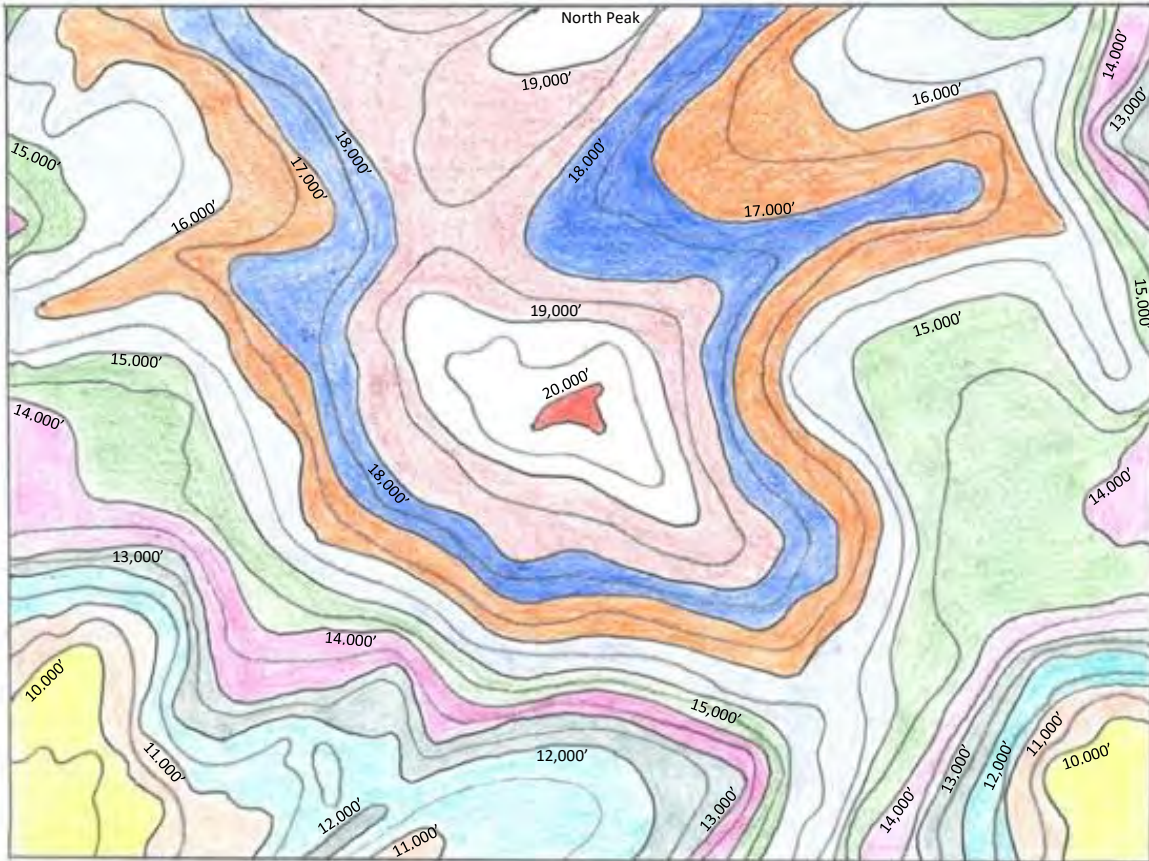
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[jukebox.uaf.edu/site7/p/2735](http://jukebox.uaf.edu/site7/p/2735)



# Topographic Template of Denali

The topographic template of Denali shows approximate lines of elevation. The highest point is the star marker on the summit of Denali. The lines are spaced every 500ft in elevation, and each color shows an area within a 1000ft elevation change.



*Note: This template was created for craft activity only. Elevation lines are only approximate. It should not be used as a map and is unsuitable for navigation purposes.*