

**IMPORTANT:** Please refer to the Preface for Topographic Map Activities for preliminary instructions and information common to all Topographic Map Activities in the series.

## Topographic Map Activity 11 - Contour Lines (Revision 07-28-20)

Objective: To understand and work with contour lines.

Background: Contour lines on Topographic Maps make these maps unique. All the points on the same contour line have the same elevation above sea level. The elevation difference between adjacent contour lines is called the *contour interval*, and is shown below the bar scale at the bottom of the map. The closer contour lines are spaced the steeper the slope of the land. Wider spaced contour lines indicate the land is more level. The darker brown contour lines are printed with the elevation, in feet, and are called *index contour lines*. The lighter brown contour lines between the index contour lines are called *intermediary contour lines* and, while not printed with the elevation, they do indicate an elevation change equal to the contour interval. Thus, by examining these contour lines we can get a visual sense of what the terrain looks like.

Activity: In the photo below, pay close attention to the changes in elevation (photo from the Pine Creek Canyon Trail Virtual Hike). Mescalito Peak is in the center, rising steeply from the trail to an elevation of 5,440 feet. The trail here is at about 4,100 feet, and relatively flat. This is a 1,340 feet increase in elevation, most of it abrupt! The peak is at 36.1227° N, 115.4965° W. The photo was taken near 36.1236° N, 115.4878° W, about a half mile from the peak. Let's look at the Topo Map and see how contour lines indicate this geography.



Open the [Blue Diamond](#) 7.5' x 7.5' quadrangle topo map (if you previously saved it on your computer you don't need to download it again). Once the map is downloaded and open, check that the imagery layer is not being shown so that the contour lines are most visible. Use your mouse or fingers (depending on the device you are using) to scroll and zoom in to the northwest corner of the map. Use the Geospatial Location Tool to find the grid coordinates given above for Mescalito Peak. Note: 1) the seven closely spaced *index contour lines* all around the peak (4200', 4400', 4600', 4800', 5000', 5200', and 5400'), and the *intermediary contour lines* between them, indicating a very steep slope all

around the peak, and an elevation gain of at least 1,000 feet from the base; 2) the *contour interval* of 40 feet; 3) the two widely spaced *index contour lines* (4000' and 4200'), and the four *intermediary contour lines* between them, at the relatively flat location where the photo was taken; and 4) the two very widely separated *index contour lines* (4000' and 3800'), and the *intermediary contour lines* between them, that straddle the much more level Scenic Drive area. With a little imagination you can look at this Topo Map and visualize this photo. A Topo Map can also be consulted to identify potential challenges and dangers for a planned excursion!