



# Orienteering by Troop 599

AMAZING Video from REI on how to use a Compass: <https://www.youtube.com/watch?v=0cF0ovA3FtY>

## Things Scouts should bring with them:

1. Compass – Here are a few we recommend.
  - a. [KanPas Basic](#): Training Competition Thumb Orienteering Compass for Foot Cross-Country Directional Movement – Cost about \$15. This one is a GREAT beginner choice for the sport of orienteering.
  - b. [KanPass Elite](#): Thumb Orienteering Compass Fast Needle Setting for Outdoor Adventure Map Reading - Cost about \$27. This one costs more because its settles faster and is better for competition.
  - c. [SUUNTO M-3 Compass](#): Quality, precision compass for demanding conditions - Cost about \$30. This is a good all around compass.
  - d. [SUUNTO MC-2 Compass](#): Top-of-the-line compass for professionals & serious hikers - Cost about \$65. Top of the line says it all, but also has a hefty price.
2. Note taking materials
3. Fun, happy, adventurus attitude

## Lingo:

**Control:** A checkpoint on an orienteering course that a competitor must visit to complete the course. These are indicated on the orienteering map with a magenta circle.

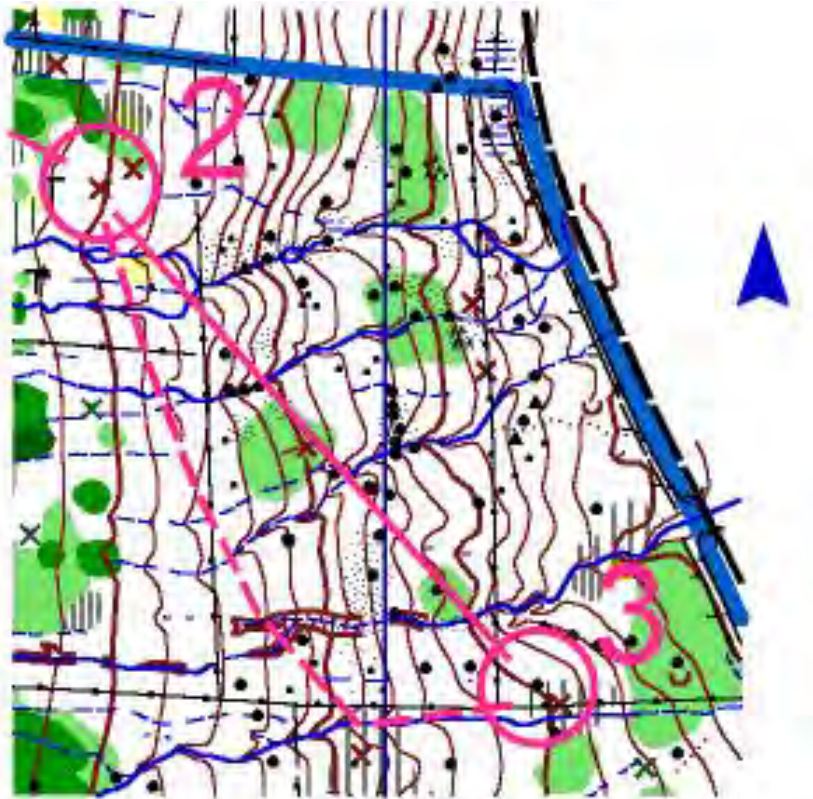
**Handrail:** A linear feature that closely parallels your route and acts as a handrail to the next control.

**Collecting feature:** An obvious feature on the map and ground located on your way to a control or other sought-after feature that indicates that you are on the right track

**Catching feature (also called backstop):** An obvious feature on the map and ground located beyond a control or other sought-after feature that indicates that the target feature has been overshot (passed by).

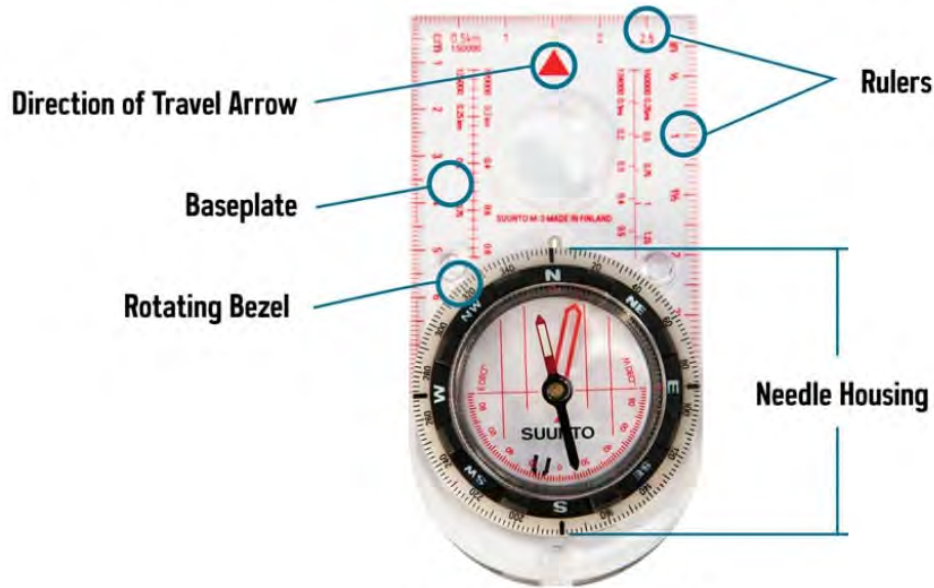
**Attack point:** An obvious feature near the control point from which the control can be located by navigating carefully with map and compass.

**Aiming off:** To deliberately aim to one side of a control or feature so that you know which way to turn upon hitting the feature before seeing the control.

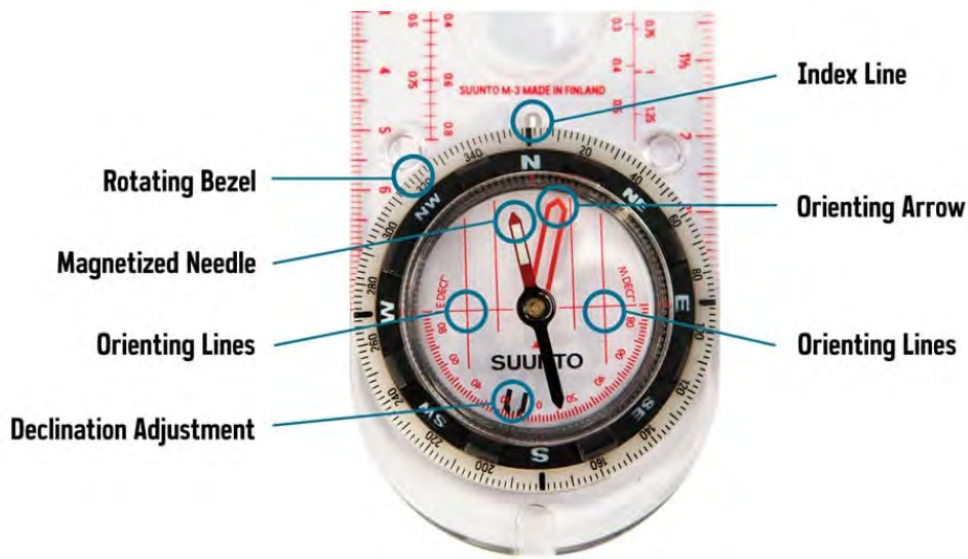


aiming off - participant aims to the right of the control to the stream and then heads left to following the stream to the control.

# 1. Get to Know the Parts of a Compass



**COMPASS ANATOMY**



**NEEDLE HOUSING DETAIL**

## Taking a Bearing from a Map



**You can use a bearing to get to a location any time you know where you are on a map:**

1. Set your compass on the map so that the straight side of the baseplate lines up between your current position (1a) and the map location for a destination like a campsite (1b).
2. Make sure the direction of travel arrow is pointing in the general direction of that campsite (in other words, it's not upside down).
3. Now rotate the bezel until the orienting lines on the compass are aligned with the north-south grid lines and/or the left and right edges of your map. (Be sure the north marker on the bezel is pointing north on the map, not south.)
4. Look at the index line to read the bearing you've just captured.



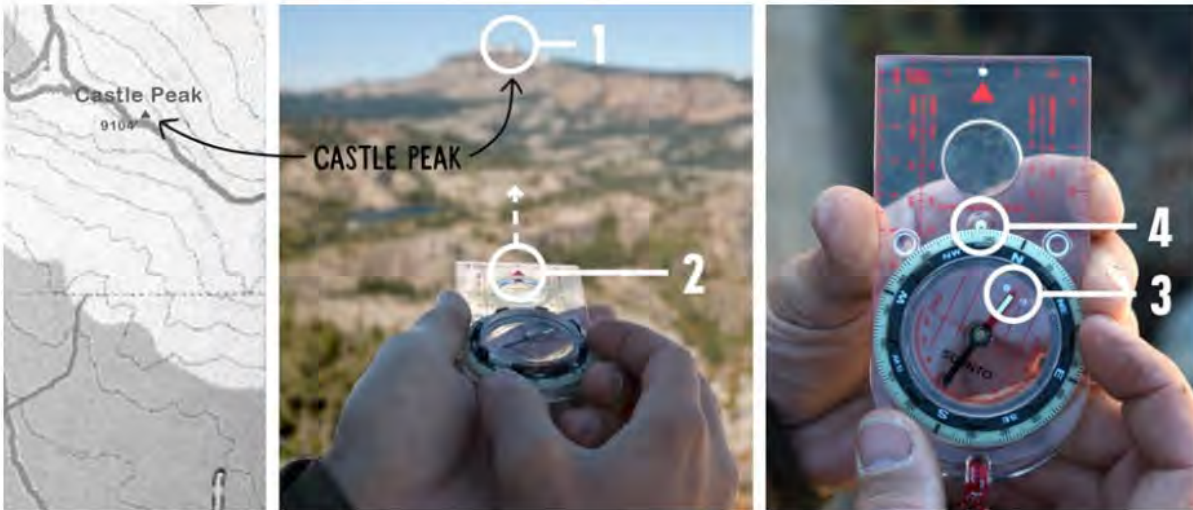


**Now you can use the compass to follow that bearing to your destination:**

5. Hold the compass with the direction of travel arrow pointing away from you.

6. Rotate your body until the magnetized needle is inside the orienting arrow. The direction of travel arrow is now facing the bearing you captured and you can follow it to your destination.

## Taking a Bearing in the Field



**You can also use a bearing to find where you are on a map.** You might want to know exactly where you are along a trail.

1. Start by finding a landmark that you can also identify on your map.
2. Hold your compass flat with the direction of travel arrow pointing away from you and directly at the landmark.
3. Now rotate the bezel until the magnetized needle is inside the orienting arrow.
4. Look at the index line to read the bearing you've just captured.



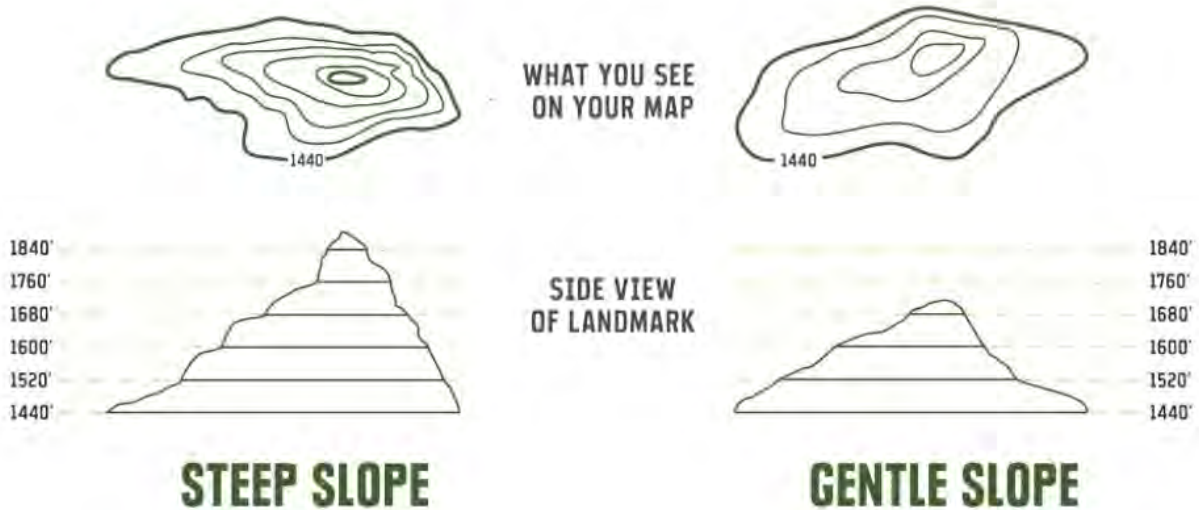
**Now you can transfer that bearing to your map to find your location:**

5. Lay your compass on the map and align one corner of the straight edge with the landmark.
6. Making sure that the direction of travel arrow remains pointed in the general direction of the landmark (6a), rotate the entire baseplate until the orienting lines are running north/south (6b) and the north marker on the bezel is pointing to north on the map (6c).
7. Now you can draw a line on the map along the straight edge of your compass (7a). The point where that line from the landmark crosses your trail is your location (7b).

# How Contour Lines Describe Terrain

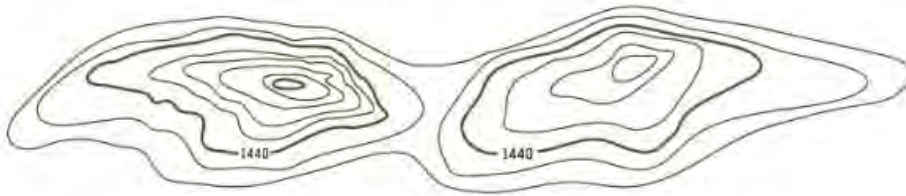
Simple trail maps are useful for trip planning but NOT for navigation in the field. Topographic maps go further, giving you the power to visualize three-dimensional terrain from a flat piece of paper. The feature that makes this possible is contour lines:

**Contour lines indicate the steepness of terrain.** Contour lines connect points that share the same elevation: Where they're close together (they never intersect), elevation is changing rapidly in short distance and the terrain is steep. Where contour lines are wide apart, elevation is changing slowly, indicating a gentle slope.





**Contour lines also indicate the shape of the terrain.** Roughly concentric circles are probably showing you a peak, and areas between peaks are passes. Studying a topo map of a familiar area is a great way to learn how to match terrain features with the contour lines on a map.



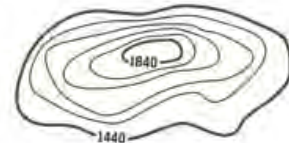
**WHAT YOU SEE ON YOUR MAP**



**3-D VIEW OF LANDMARK**

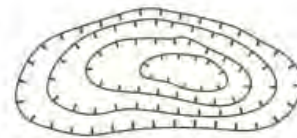
**Index contour lines:** Every fifth contour line is a thicker, "index" line. At some point along that line, its exact elevation is listed.

**Contour interval:** The change in elevation from one contour line to the next is always the same within the same map. Many maps have either a 40- or 80-foot contour interval: An 80-foot interval simply means that each contour line is 80 vertical feet away from the next closest line. You find the contour interval for your map in its legend.



**CONTOUR INTERVAL, 80ft**

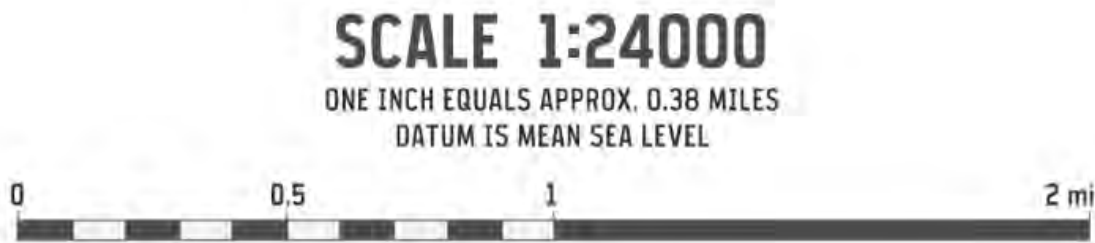
**Every once in a while, a circle indicates a depression rather than a peak.** A circle with tick marks inside it indicates a depression, rather than a peak. You should also see elevations decreasing as you get near the depression.



**DEPRESSION**

# Map Scales

The map's scale tells you how detailed your map is. A 1:24000 scale, for example, means one inch equals 24,000 inches in reality. A larger scale, like 1:65,000, means that a map covers a larger area, but that it will have less detail.



Maps also have a representative scale to help you visualize real-world distances. You can use this scale and a string or the edge of your compass to get a rough estimate about hiking distances on your map.

# Other Useful Map Details

Look closely at the map legend. It's loaded with map-reading clues and navigational data. Start by studying what each line, symbol and color means. Generally, green indicates denser vegetation, while light or colorless areas suggest open terrain. And, as you'd expect, streams and lakes are shown in blue.



The legend also lists key data like the map's scale, contour- and index-line intervals, grid systems (used for more advanced navigation) and magnetic declination (needed to set up your compass).

## Thumb Compass Design & Rationale

**Thumb compass design centers on being readily available at all times**, and in close contact with the map. Oftentimes, the compass and map are held in the same hand, with the compass strapped around the user's thumb, while grasping the map in the same hand.



My Silva Race Jet

360 compass with map at a recent training session in Cuyahoga Valley.

**Thumb compasses come in both left- and right-hand versions**, so it pays to think a bit about what works for you, what feels natural, and what will work in the woods. A baseplate compass is easy to reposition and move around the map, whereas the thumb compass stays put on your hand.