

Compass Exercise

What you need:

- 100-Foot tape measure or equivalent
- Map of Gettysburg Area (Both a street map and Topographic map are included in this document)
- Compass
- Pen or Pencil, (Calculator (Optional))

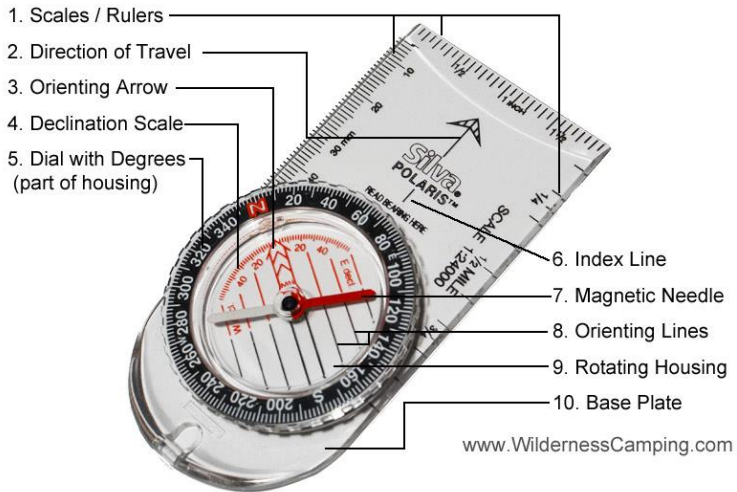
Instructions

1. In an open area, use a tape measure and count out how many paces you take to travel 100 feet or 100 meters. Use the chart below to indicate number of steps for each distance. Use a normal gate or step when doing this.
2. 1 meter = 3.28 feet

Feet		Meters	
Distance Traveled Feet/Yards	Steps to walk the distance in Feet	Distance in Meters	Steps to walk the distance in Meters
100 feet		50 Meters = 164 feet	
200 feet		100 Meters = 328 ft	
300 Feet = 100 Yards		150 Meters = 492 ft	
400 feet		200 Meters = 656ft	
500 feet		300 Meters = 984ft	
600 feet = 200 Yards		400 Meters = 1312ft	
700 feet		500 Meters = 1640ft	
800 feet		1 Kilometer = 3281ft	
900ft = 300 Yards		1.5 Kilometers = 4,921 ft	
1000 feet			
1 mile = 5,280 feet			

COMPASS INSTRUCTIONS:

Parts of a Compass



Setting a Heading/Bearing with a compass

You are asked to head in a direction using degrees or cardinal points.

Example: Head in the direction of 113 degrees OR Bear 113 degrees.

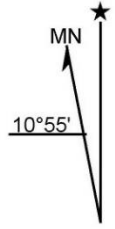
Steps:

1. Most Silva compasses have a “Direction of Travel Arrow” on them labeled “Read Bearing Here”. Find that arrow on your compass.
2. Turn the dial with degrees marked on the compass so the Direction of Travel Arrow is aligned with the degrees or bearing you plan to travel. In this example it is 113 degrees.
3. Hold the compass above waist high with that “Direction of Travel Arrow pointing directly away from you. Make sure the compass is not near any metallic object like a belt buckle.
4. While holding the compass in that position, turn your body until the Red North Needle is perfectly aligned within the compass’s “Orienting Arrow”



Magnetic North, True North and Declination

There are two types of North. True North (TN) and Magnetic North (MN). Maps normally are printed in True North alignment. To use them with a compass they must be adjusted for a declination of Magnetic North. Declination is the difference between True North and Magnetic North and is stated in degrees and minutes. For example, on your printed map you can see in the bottom right corner that the declination is 10 degrees and 55 minutes (Almost 11 degrees since there are 60 minutes in each degree).



Why does the current known declination matter?

Be sure your map is a current version with stated MN declination shown. Why? The magnetic fields change over time. For Example: in 1973, the declination of Magnetic North was about 8 Degrees. In 2018 the current declination is now about 11 degrees. Those 3 degrees can make a difference in finding your target. If traveling just 100 yards and using a declination of 8 degrees instead of 11 degrees will have you miss the target to the right by 15 ½ feet. Over a mile you will miss the target by 276 feet to the right.

Orienting a Map with a Compass

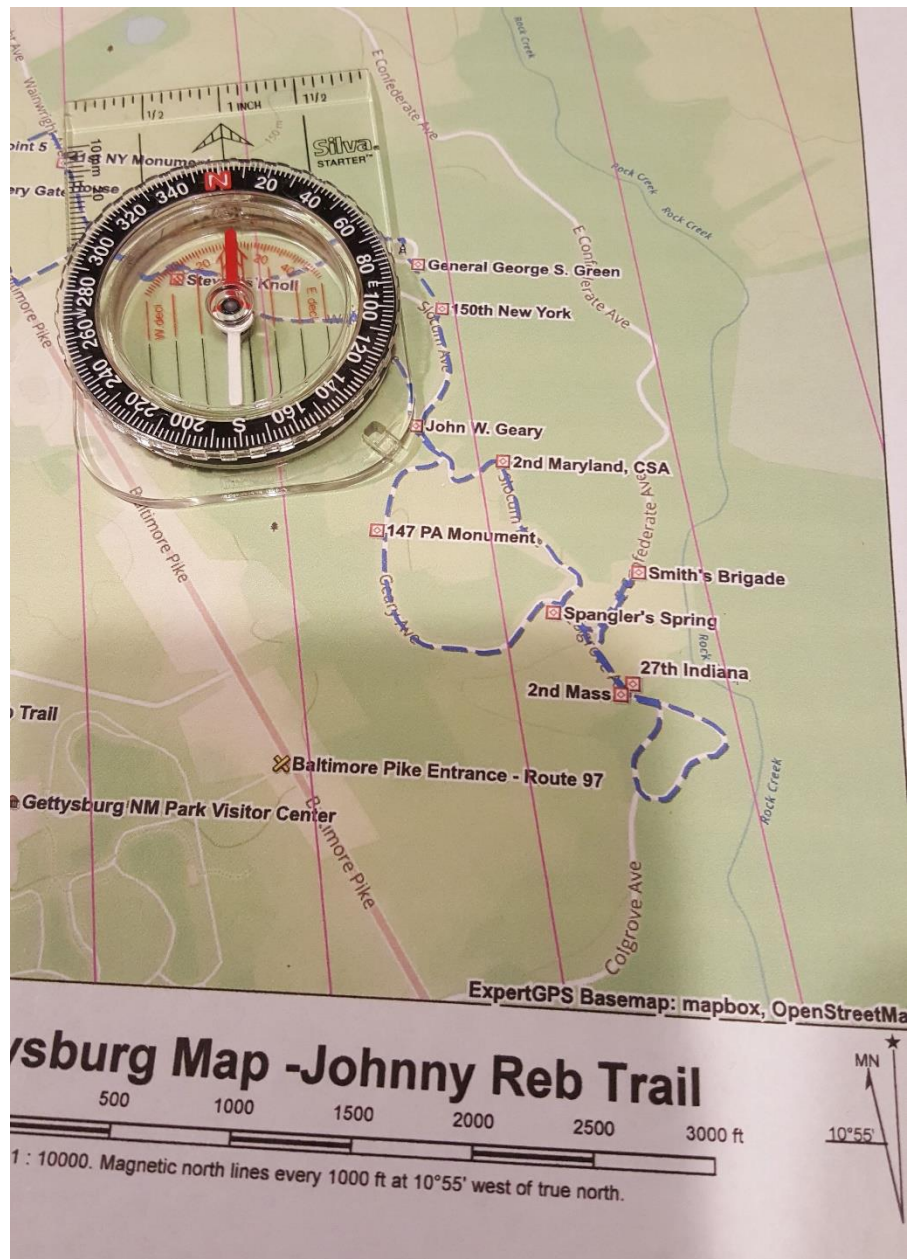
A map represents features of the real world. By orienting a map, you are positioning it so its North is actually pointing north. When you orient a map and know where you are on the map, you can look in a certain direction and see a real landmark and find it on the map.

The map provided contains 7 to 14 pre-printed declination lines that align with Magnetic North. These lines are used to orient the map. If the map does not have these lines, then you could draw them yourself based on the known declination of degrees shown in legend of the map.

Steps:

1. Place the map on a flat surface.
2. Turn the dial on the compass so that the North indicator on the Dial with degrees is in line with the compasses Direction of Travel Arrow.
3. Align the left side of the compass edge along one of the Magnetic North Declination lines.
5. Keeping the compass and map aligned, turn the map until the Red North Needle is perfectly aligned within the compasses "Orienting Arrow"

Your map is now oriented to its surroundings and features of the world.



Determining a Bearing from one Point to Another on an Oriented Map

You are requested to reference your map and determine the bearing or direction from one point to another.

Example: Determine direction from the Meade Head Quarters to Control Point 4.

Steps:

1. Orient your Map using a compass. See previous section for instruction for doing this.
2. Place the compass on the map
3. Align the left edge of your compass so that the edge of the compass connects both points on the map. This also means that your Direction of Travel arrow is also heading in the same direction as the two points. The edge of the compass is used because it is simpler to align the two points instead of using the Direction of Travel Arrow.
4. Keeping the compass on the oriented map with two points aligned with the edge of the compass, turn the compass DIAL. Read the degrees that are aligned with the Direction of Travel Arrow and where that arrow is labeled "Read Bearing Here".



Determining Distance between Two Points on a Map

Use the edge ruler of your compass to measure from one point on the map to another.

Example: Measure distance between Control Point 4 and the Meade Head Quarters.

Steps:

1. Place the compass on the map with the top edge of the ruler at one point and the other edge (left Edge) of the compass running through the other point.

2. The left ruler (in mm) shows 35mm as the distance between the two points. **Note: Your compass and map distance scale may be different than the one illustrated.**

3. Next, place the compass ruler along the Legend's Distance Scale.

Start at zero and see what the distance is at 35mm as determined in step 2. See photo below. The distance along the legend's scale where the ruler reads 35mm is about 1135 feet. The straight-line distance between Meade's Head Quarters and Control Point 4 is 1135 feet.

