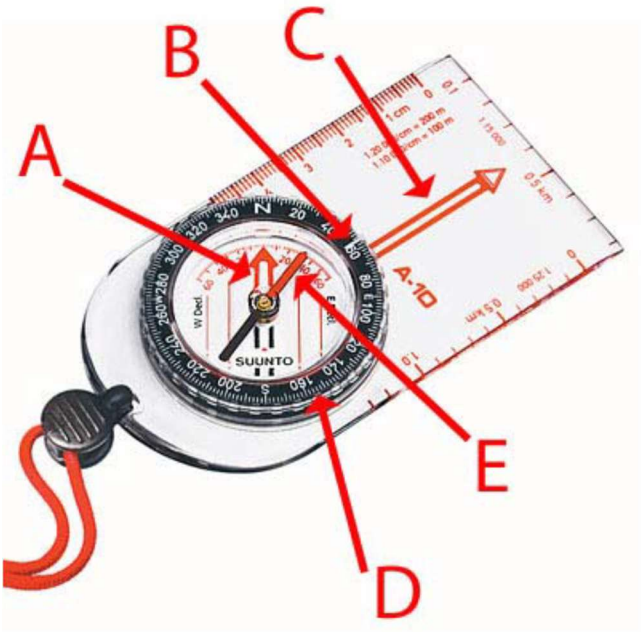
Orienteering Basics

The Compass:

Nicknames for basic components of a compass:

- "A" refers to the piece we call the "**shed".** This piece will move with "E" when you find your bearing. In our example, it has an arrow or "roof."
- "B" is the **"white line that never moves"** which helps you to line up your bearing. The bearing refers to the number of degrees you must turn to face your next marker.
- "C" refers to **"Fred"** which is the arrow you should follow when moving to your marker. Fred leads you to your next destination, not Red (E). Red will lead you north.
- "D" is the **spinning dial** which will allow you to line up your bearing on the "white line that never moves (B).
- "E" is the piece we call **"Red".** Red is the part of the compass needle that always points North.



How to use a compass:

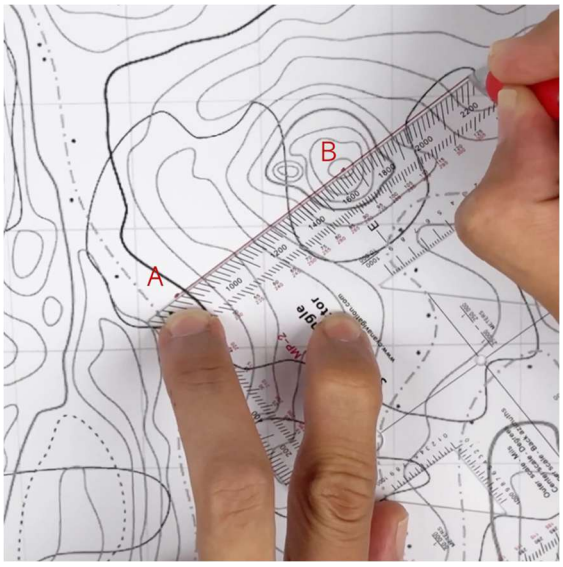
- ***To use the compass***, you first must find your bearing. A **bearing** is measured in degrees.
- The degrees are usually measured in large increments of 20 degrees which are then broken into 10 degrees and further into 2 degrees. So, each little line is equal to 2 degrees.
- For example: If you are trying to find the bearing of 55 degrees, you would turn the spinning dial (D) to line up the space between the small white lines for 54 and 56 with the "white line that never moves" (B).
- Once you have lined up your bearing, you must then turn to face the direction the bearing is pointing you in. To do this, you must turn until "Red" is in the "shed" or in other words, turn until the north pointing arrow is within the red lines.
- You will follow "Fred" (C). When holding the compass, it needs to be level and not near any metal that could confuse the compass needle. Hold the compass near to your body to help you to go in the correct direction when following "Fred" (C). It is important to follow "Fred" because following "Red" will make you always travel North.
- *The rhyme "Put **Red** in the **Shed** and Follow **Fred**" is helpful in remembering what to do.*
- Before you start walking, it is important to know how to count your paces.

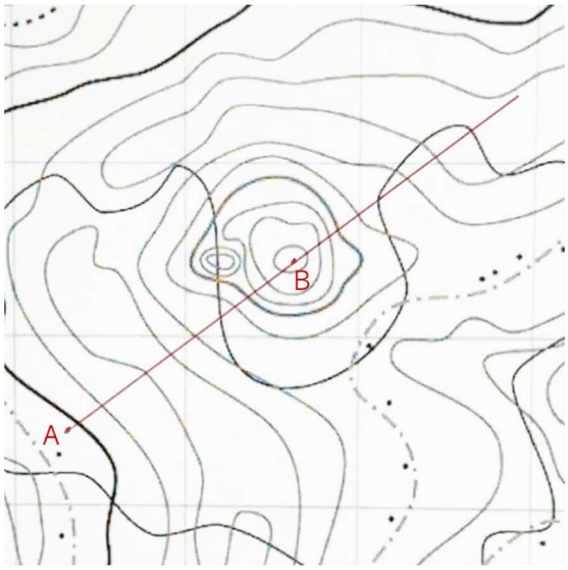
The Protractor:

Measuring Relative Azimuth Between Two Points:

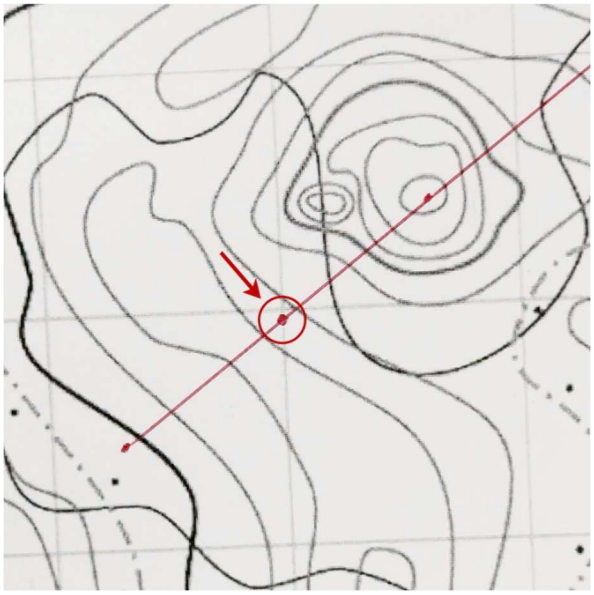
- Let's say you have a map with two known points, A and B, and you want to determine the direction from point A to point B, which is essentially the relative **azimuth**.

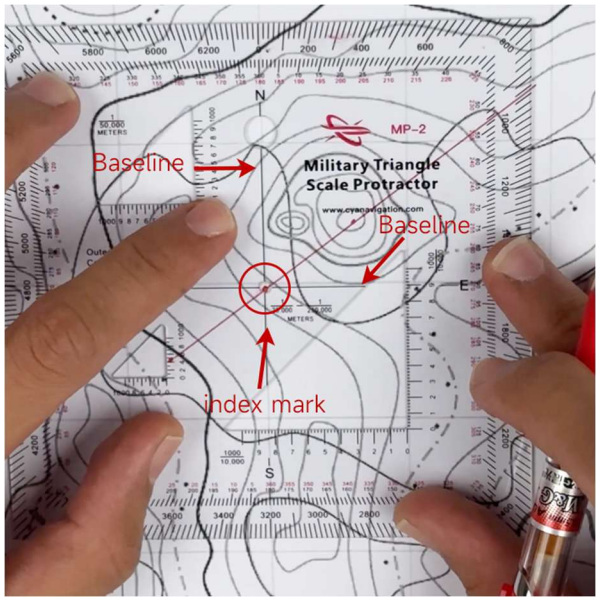
Step 1: Connect points A and B on your map with a line, extending it beyond both points.



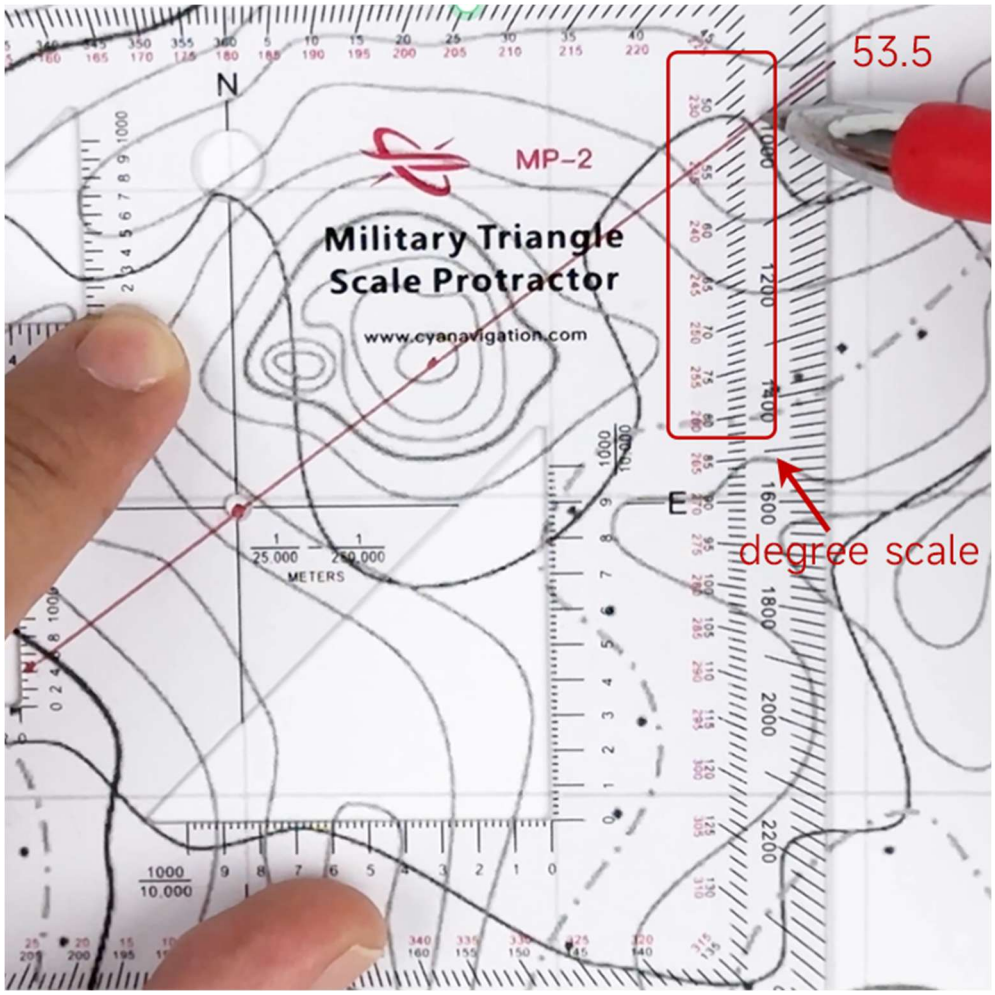


Step 2: Place the protractor's index mark where your line crosses a north-south **grid line** and align the protractor's baseline with the north-south grid line.





Step 4: Read the degree value at the intersection of your extended line with the protractor's degree scale. This reading represents your grid azimuth from point A to B in degrees.

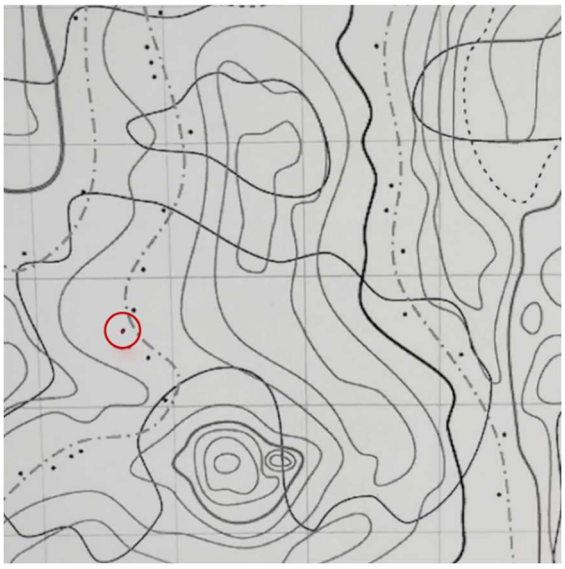


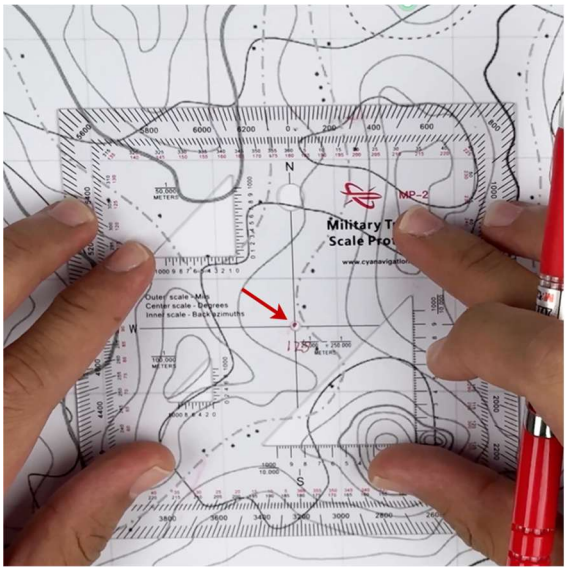
Plotting an Azimuth from a Known Point:

- Imagine you receive an order to move from your current position, which we'll call point A, in a specific direction.
- To ensure accurate navigation, you need to plot an azimuth on your map.
- This azimuth will help you visualize the terrain and obstacles you might encounter along your intended route.

Step 1: Position your military map protractor on the map, placing the center hole of the protractor over your current position, point A.

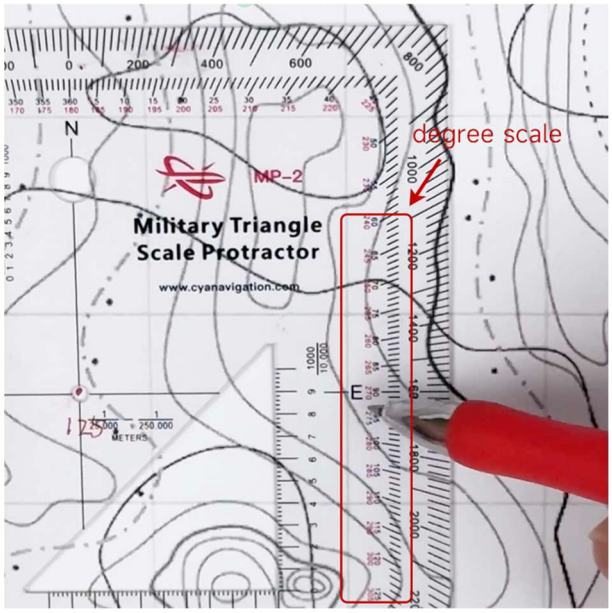
Step 2: Orient the protractor so that the North-South grid lines align with the map's grid lines. This alignment ensures the protractor is correctly oriented.





Step 3: Identify the desired azimuth or direction you've received as an order. This azimuth is usually given in degrees.

Step 4: Find the corresponding degree mark on the army protractor, starting from the center hole. This mark represents your intended azimuth.



Step 5: Now, draw a straight line from the center hole to the degree mark along the protractor's edge. This line represents the azimuth you need to follow.

Step 6: As you move, keep the map oriented according to your azimuth line. This way, you can continuously assess the terrain and objects along your route, ensuring a safe and precise journey.

How to count paces:

- First, it is important to know that the **distance to each marker is measured in meters.**
- To find the number of paces to take, simply complete the 25 meter pace count at Kettle Run Rd East Trailhead Kiosk.
- Walk normally for the 25 meters, counting every other step you take to find your pace count for 25 meters.
- Using the pace count for 25 meters helps you calculate what your pace count should be for longer distances as well.
- By dividing the distance needed to travel by the **length** of your pace count (25 meters) and multiplying that number by your pace count, you will get the number of paces you will need to count for the distance you must go.
- It is important to walk normally and at a relatively constant speed as adjusting step size and speed will change your pace count; making your pace count inaccurate.

Staring a Course:

- **Every course begins at a starting course. The bearings will lead you to markers labeled with numbers 1-20.**
- It is often helpful to work in pairs. Take turns doing each job. One person can do the pacing and the other person can find the bearing on the compass.
- Doing orienteering in pairs is helpful for those who are new to orienteering because the person who found the bearing can help the person pacing stay on track.
- It is important for both participants to use landmarks to stay on course. Spying a tree in the distance that is in the direction of your bearing can help you to continue straight toward your marker without having to check your compass all the time.
- Once the person pacing has reached the marker, you can check to make sure the correct marker was found.
- To check, the pace walker will use his or her compass. The bearings should be set to the same bearings the compass reader set his or her compass to at the last marker. The pace walker will turn until the BLACK side of the compass needle is within the shed. If FRED points back to his or her partner, they got the right marker.
- At each marker there is a number. On the course sheet, record the number.

Remember:

- **It is important to pay attention to the bearing and pacing in order to be accurate.**
- **If you don't successfully find a marker, go back to the last one and try again.**

Credits:

Cya. *"How to Use a Military Protractor for Land Navigation - Home - CYA Aviation." Home - CYA Aviation - Inspire Your Passion For Aviation, CYA, 17 Nov. 2023, cyanavigation.com/how-to-use-a-military-protractor-for-land-navigation/*.

Orienteering Basics, St. John's Outdoor University, 26 Nov. 2013, www.csbsju.edu/documents/OutdoorU/csbsjueducation/Orienteering Basics(0).pdf.