

SOME COMPASS BASICS

WHAT IS MAGNETIC NORTH POLE?

It's the point on the surface of Earth's Northern Hemisphere at which the planet's magnetic field points vertically downwards. The magnetic North pole is in continuous movement. The Magnetic North Pole is the point that traditional magnetic compasses point toward.

WHAT IS THE GEOGRAPHICAL NORTH?

"Geographical North" is also called "True North" and is the direction from any point on Earth toward North Pole.

WHAT IS INCLINATION?

A compass will react to the Earth's magnetic field and the compass needle will tilt (vertical direction) downward or upward depending where you are location on Earth. It means that the needle will always be parallel to the Earth's magnetic field.

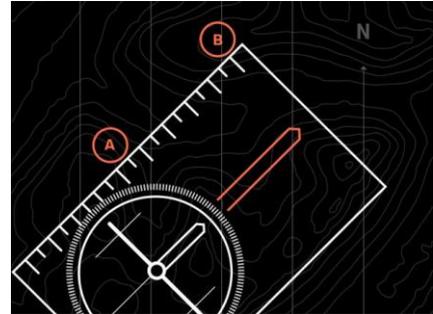
WHAT IS DEVIATION?

The difference between True North (geographic North) and Magnetic North. Magnetic deviation will occur in some places of the world, often caused by high amounts of metallic ore in the ground. This will cause the needle to divert either west or east and the deviation varies between 1 and several degrees depending on the amount of material that influence the needle at the place where you are. Most maps will have a note regarding the local magnetic deviation and on how to calibrate for it.

HOW TO FIND A BEARING

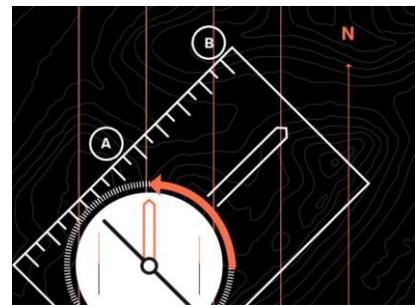
STEP 1

Place your compass on the map and use the baseline to make a straight line between your current position and your destination. Make sure direction-of-travel arrow points towards your destination.



STEP 2

Turn the compass housing until the red part of the north/south arrow is parallel with the map meridians (vertical lines), and points north on the map. North is most likely marked with N.



STEP 3

Lift your compass from the map and hold it horizontally in your hand. Turn yourself and the compass until the red end of the needle is inside the red north/south arrow. Now the direction-of-travel arrow will point towards your destination. Take a landmark and start moving.



Video Showing how to take a bearing: <https://vimeo.com/265721095>

Traveling on a bearing

You travel on a bearing by sighting a recognisable landmark along its path and then travelling to that point and repeat until you reach your destination. It is not advisable to follow your bearing by looking at the compass and watching the movement of the needle. As you walk you will have to move from side to side to avoid obstacles so this method of following the bearing is discouraged in favour of line of sight identification method. However, if you find yourself in heavy fog or out at night you will use the method of looking at your compass to find your way. In fog or at night you could use members of your patrol to line up on a bearing under your direction and you then travel to these members. This is a more accurate method than simply looking at the compass.

Finding your position on a map

To find our position on a map, we use a process called resection. This is performed by plotting at least two points on the map to determine your position. First, select a landmark that you can identify on the map and from the position you are standing. Point the compass at the landmark and move the housing (the round twistable bit) until the needle and north-south marking align. Read off the bearing on the dial. Now subtract 4 degrees (magnetic variation) from that bearing (e.g. bearing of 84 degrees less 4 degrees total 80 degrees). You then place the compass on the map with the edge of the base plate on the symbol or identifiable feature. Without adjusting the compass move the whole compass round this point until the north-south lines are parallel with the grid lines. If you have a pencil, draw a light line along the side of the base plate. Your position is somewhere along this line.

Now select another feature which can be seen and identified from your position and repeat the process. If possible, choose a feature which is nearly 90 degrees from your position. By doing this your new line will cross the line drawn from the other feature at your precise location. If the two points selected are too close to each other then the lines will tend to merge and may result in a less accurate determination of your position. Normally, two bearings are ample, however, if you wish you can use three to confirm exactly where you stand.

Nasmiths Rule

Nasmith was a Scottish hiker. His rule for measuring distance and speed on the hills is a great method of determining our speed of travel over the countryside. It states that we walk at 3km per hour and should allow 1 minute¹ for every 10 metres climbed. That is 20 minutes per kilometre on flat easy ground with a light pack.

Walking on flat easy ground should take about 20 mins per 1 kilometre, 10 mins per ½ kilometre, 2 minutes per 100 metres.

PLUS ADD 1 minute for every 10 metres climbed. Each contour on your map shows every 10 metres gained. Do NOT add for descent.