

Kjetil Kjernsmo's illustrated guide on

How to use a compass

Using the compass in interaction with a map

This is the important lesson, and you should learn it well.

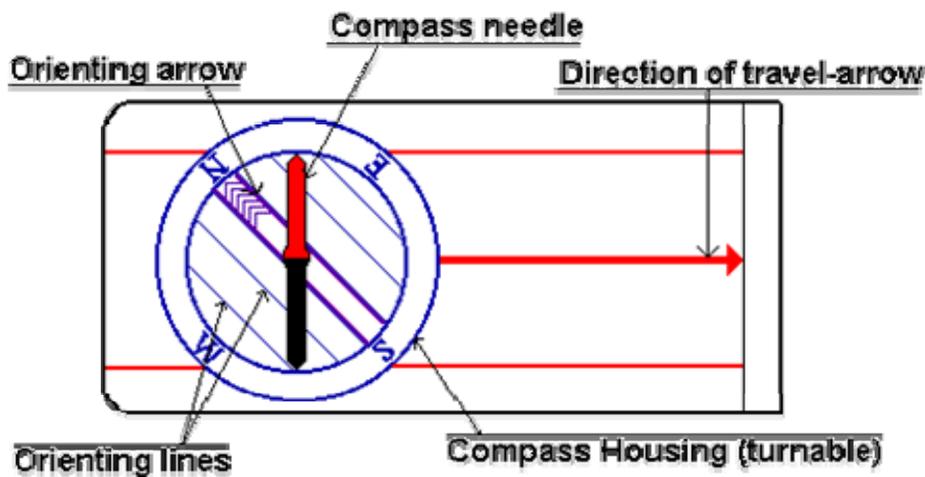
It's when you use both compass and map the compass is really good, and you will be able to navigate safely and accurately in terrain you've never been before without following trails. But it'll take some training and experience, though.

I am not covering map reading here, guess you would have to consult other sources for that, but the lesson will be useful if you have a sense of what a map says.

First, a quick summary of what you will learn in this lesson:

1. Align the edge of the compass with the starting and finishing point.
2. Rotate the compass housing until the orienting arrow and lines point N on the map.
3. Rotate the map and compass together until the red end of the compass needle points north.
4. Follow the direction of travel arrow on the compass, keeping the needle aligned with the orienting arrow on the housing.

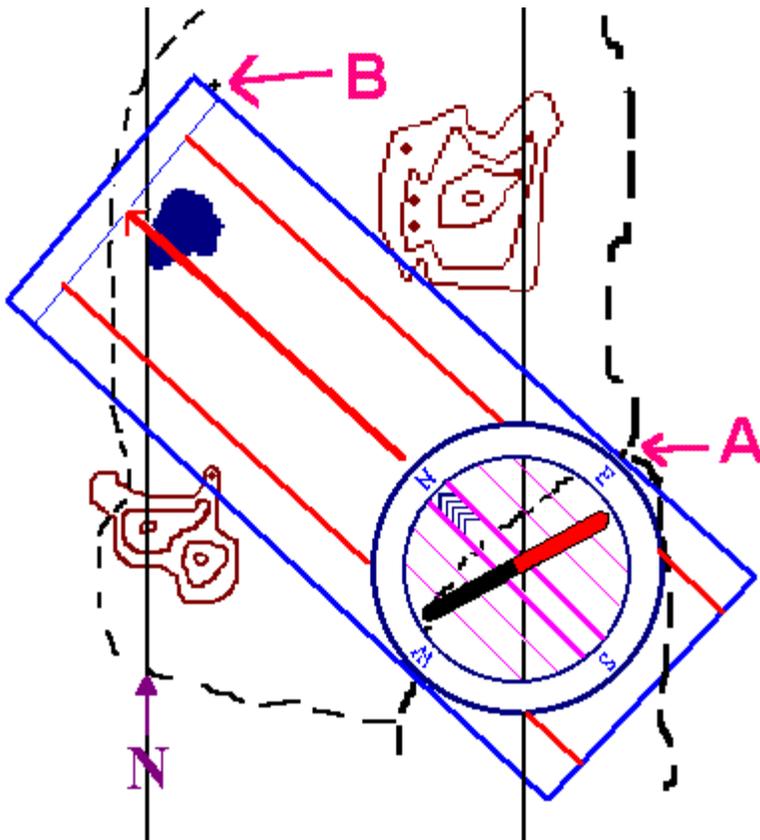
Here is our compass again:



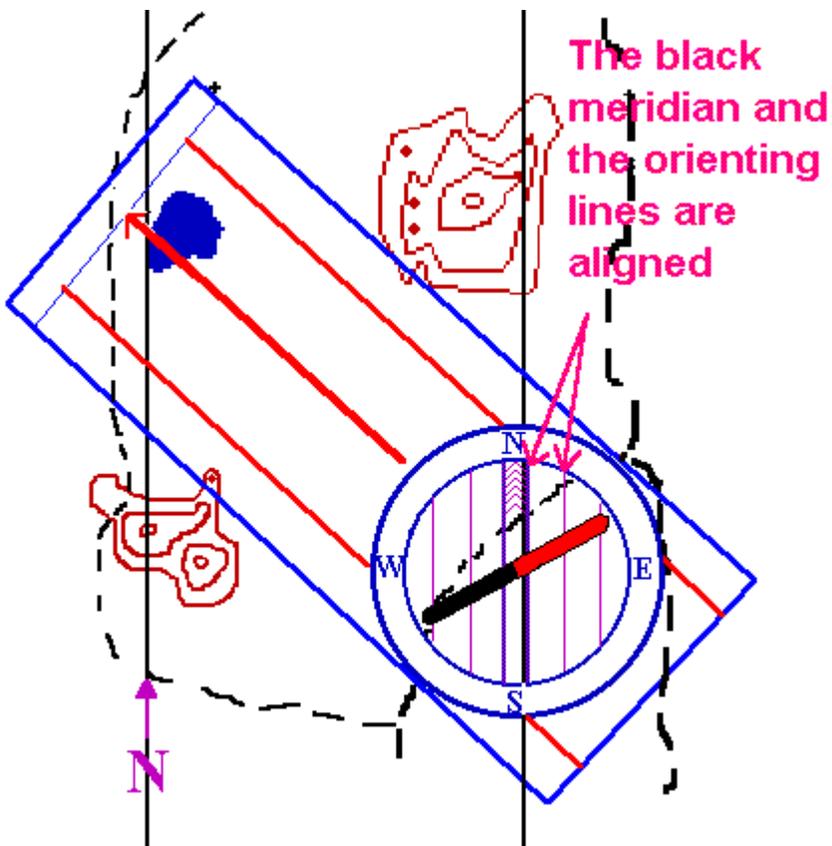
The principles are much the same as in [lesson 1](#) but this time, you are using the map to tell you which way is correct instead of your intuition.

Take a map. In our first example, we look at a map made for orienteering, and it is very detailed. Well, not really. We look at a fictitious map I drew myself, but never mind. To the point. You want to go from the trail-crossing at **A**, to the rock at **B**. Of course, to use this method successfully, you'll have to know you really *are* at **A**.

What you do, is that you put your compass on the map so that the edge of the compass is at **A**. The edge you must be using, is the edge that is parallel to the direction of travel arrow. And then, put **B** somewhere along the same edge, like it is on the drawing. Of course, you could use the direction arrow itself, or one of the parallel lines, but usually, it's more convenient to use the edge. At this point, some instructors say that you should use a pencil and draw a line along



 Time to **be careful** again! The edge of the compass, or rather the direction arrow, must point *from A to B*! And again, if you do t his wrong, you'll walk off in the exact opposite direction of what you want. So take a second look. Beginners often make this mistake as well.

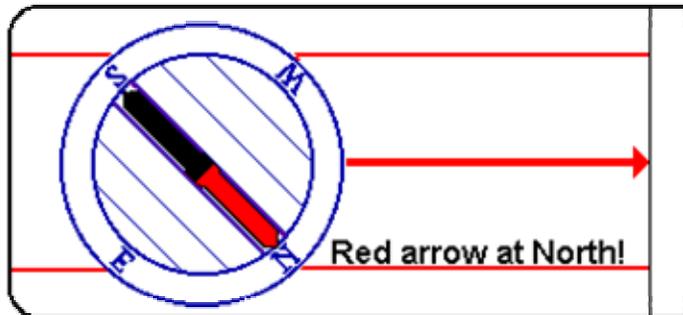


Keep the compass steady on the map. What you are going to do next is that you are going to align the orienting lines and the orienting arrow with the meridian lines of the map. The lines on the map going north, that is. While you have the edge of the compass carefully aligned from A to B, turn the compass housing so that the orienting lines in the compass housing are aligned with the meridian lines on the map. During this process, you don't mind what happens to the compass needle.

 There are a number of serious mistakes that can be made here. Let's take the problem with going in the opposite direction first. **Be absolutely certain** that you know where north is on the map, and be sure that the orienting arrow is pointing towards the north on the map. Normally, north will be up on the map. The possible mistake is to let the orienting arrow point towards the south on the map. And then, keep an eye on the the edge of the compass. If the edge isn't going along the line from A to B when you have finished turning the compass housing, you will have an error in your direction, and it can take you off your course.

When you are sure you have the compass housing right, you may take the compass away from the map. And now, you can in fact read the azimuth off the housing, from where the housing meets the direction arrow.

Be sure that the housing doesn't turn, before you reach your target B!

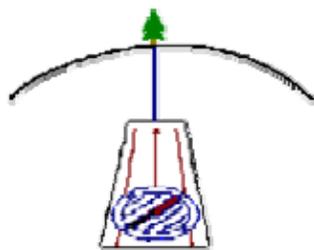


The final step is similar to what you did in [lesson 1](#). Hold the compass in your hand. And now you'll have to hold it quite flat, so that the compass needle can turn. Then turn yourself, your hand, the entire compass, just make sure the compass housing doesn't turn, and turn it until the compass needle is aligned with the lines inside the compass housing.



The mistake is again to let the compass needle point towards the south. The red part of the compass needle *must* point at north in the compass housing, or you'll go in the opposite direction.

It's time to walk off. But to do that with optimal accuracy, you'll have to do that in a special way as well.



Hold the compass in your hand, with the needle well aligned with the orienting arrow. Then aim, as careful as you can, in the direction the direction of travel-arrow is pointing. Fix your eye on some special feature in the terrain as far as you can see in the direction. Then go there.

Be sure as you go that the compass housing doesn't turn.

If you're in a dense forest, you might need to aim several times. Hopefully, you will reach your target B when you do this.

At this time, you may want to go out and do some training, so you could check out some [suggested exercises](#).

Unfortunately, sometimes, for some quite often, it is even more complicated. There is something called *magnetic declination*. And then, for hiking, you wouldn't use orienteering maps. And this is the issue for [lesson 3](#).



Kjetil Kjernsmo © 1997-2000

kjetikj@astro.uio.no