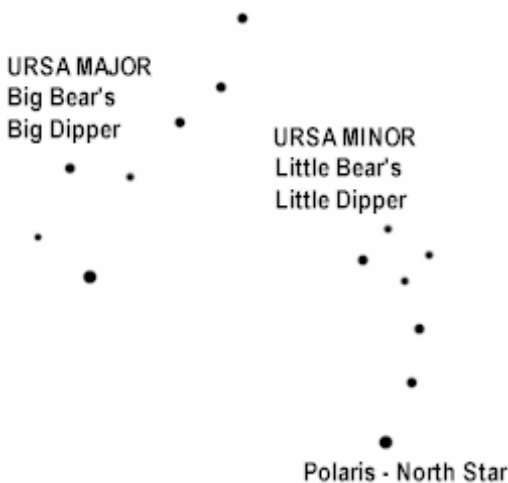


# Finding North without a Compass

With a compass, finding north is easy. However, a compass may not always be within reach when you need one. In extreme cases such as these, there are a number of methods of find where north is. These methods are not accurate and sometimes unreliable.



## North Star Method

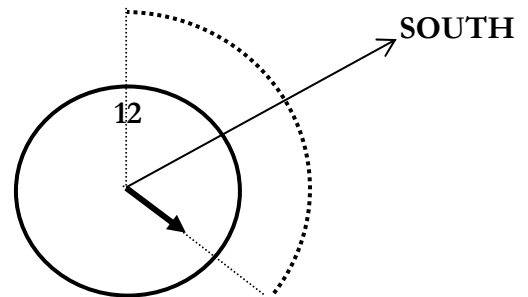


On the left is a rough figure of the big and little dipper. The edge of the little dipper's handle is the star known as *Polaris* or *North Star*. Most definitely, this method can only be used during a clear and dark night. Ambient city lights will interfere with visibility of these constellations.

Drive a pole, at least 2 feet long, into the ground. Hold a short stick in your hand and sight the North Star from the top-edge of the short stick and the top-edge of the longer stick. Drive the short stick into the ground where you are able to sight North Star. A line stretched between the two markers draws the North-South line.

## Watch Method

A watch with an hour hand can be used to find true South during the morning, when the sun is out. Place the watch flat on the ground and turn the entire watch in such a way that the hour-hand points towards the direction of where the sun is located. To do this accurately, hold a twig or a matchstick vertically and align the hour with the shadow cast by the twig or the matchstick.



Have an imaginary line from the center of the watch dividing the smallest angle made by the hour hand and the number twelve in half. That imaginary line points towards the true South direction.

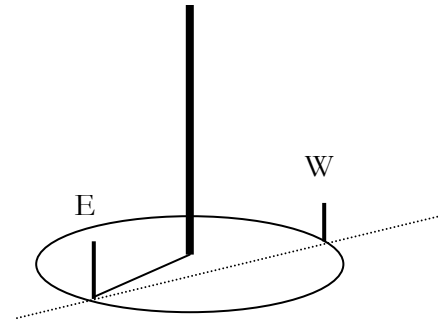
Note that the time on your watch may be incorrect and areas observing daylight savings should factor in the time change.

## Shadow Stick Method

Drive a stick into the ground, such that it is at an angle with the ground with its tip pointing towards the sun. If the stick is driven into the ground correctly, it should produce as little shadow as possible. Allow sometime for the stick to produce a six inch shadow. The shadow will point towards East.

## Equal-Length Shadow Method

This method can only be done if you start before twelve noon. The earlier in the morning you start, the better the result will be. Drive a staff into the ground. Draw a circle with the staff being the center and the shadow produced being the circle's radius. Drive a marker into the tip of the shadow touching the circle.



In the afternoon, as soon as the shadow touches the circle. Place another marker where the tip of the shadow once again touches the opposite side of the circle. A line made between the two markers is the East-West line, with the first marker being the West direction.

## Plants May Point the Way

Plants tend to grow where the sun is, so abundant vegetation will grow more towards the direction of the equator (so, North for those located in the Southern Hemisphere).

Moss on the other hand will grow on the side of a tree facing North, because the wind is more humid on that side. Moss will be greener on the North side and will be yellowish or brownish towards the South side.

Tree stumps on fallen trees can also tell where North is. More growth will happen towards the equator. So the tree rings will be more widely spread on the side facing the equator compared to the side facing the other way.

## Needle Method

If a needle and a silk cloth are available, you can stroke the needle repeatedly towards the same direction to make it magnetized. If a magnet is available, then that is even better.

The magnetized needle can then be suspended on a line to freely align itself to the North-South line. It can also be placed directly on water, on paper or a leaf that in turn is placed on water.

## References

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