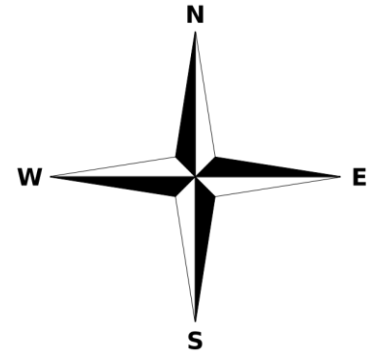


# Determine Direction without a Compass

Which way is north? Whether you're lost in the woods or camping, you're bound to want to find true north from time to time. Chances are when the time comes you won't have a compass. What's more, even if you do have a compass, it will point to magnetic north, which, depending on your location in the world, can vary a great deal from true north. So what's an intrepid explorer to do? Read the following to discover several different ways to find your direction without a compass.



## Note these four facts:

Fact 1: The sun rises in the East and sets in the West.

Fact 2: When you face North, East is to your right, West is to your left, and South is to your back.

Fact 3: The Big Dipper is a pattern of stars that resembles a soup ladle.

1. Determine direction using the shadow-tip method.
  - a. Place a stick or branch into the ground vertically at a fairly level spot where the sun will cast a distinct shadow. Mark the shadow with a stone, twig, or other means (Figure 1).

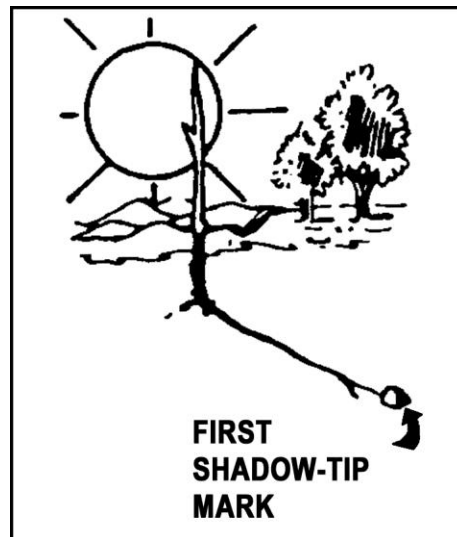


Figure 1: First shadow-tip mark.

- b. Wait 10 or 15 minutes until the shadow tip moves a few inches. Mark the new position of the shadow tip just like the first (Figure 2).

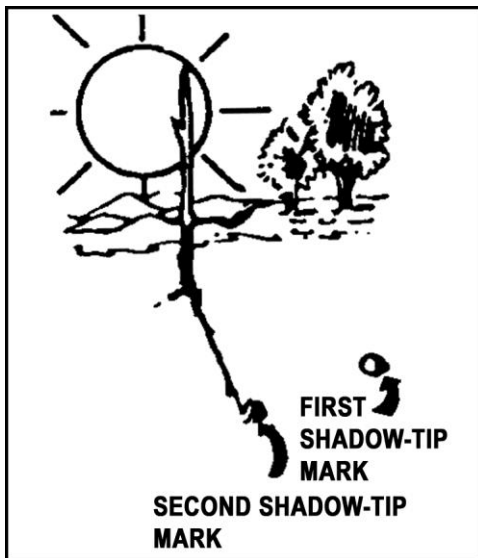


Figure 2: Second shadow-tip mark.

- c. Draw a straight line through the two marks you made on the shadow tips. This line is an East-West line (Figure 3).

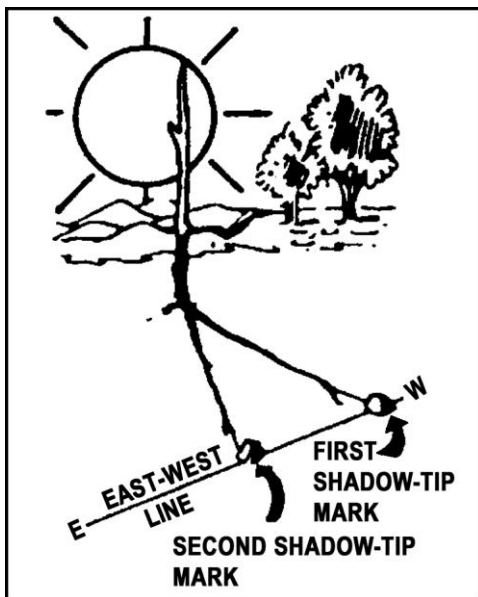


Figure 3: East-west line.

- d. Determine which is the East end of the line and which is the West end.
- (1) The sun rises in the East and sets in the West.
  - (2) The first shadow tip you mark will always be West, and the second mark will always be East.
  - (3) The shadow tip moves in the opposite direction.
- e. Determine North and South. Draw a line at a right angle to the East-West line at any point (Figure 4). This is the North-South line.

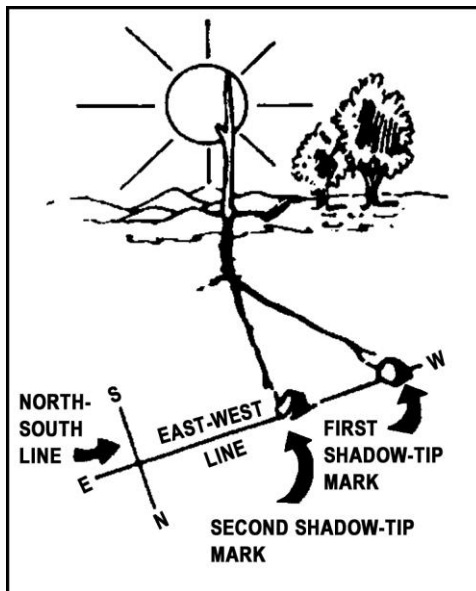


Figure 4: North-south line.

2. Determine direction using the watch method without a compass.
  - a. Point the hour hand at the sun when you are North of the equator. South will be halfway between the hour hand and 12 o'clock (Figure 5).

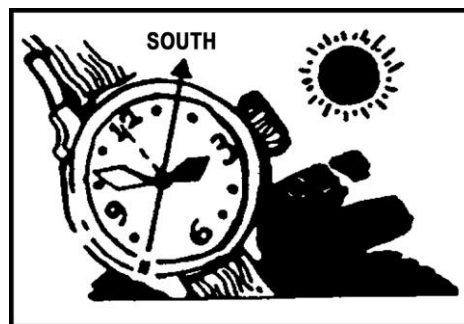


Figure 5: Watch method.

- b. Point 12 o'clock at the sun when you are South of the equator. North will be halfway between the hour hand and 12 o'clock.
3. Use the North Star method to determine direction at night. At night, you can locate north by finding the North Star (Polaris). First, find the Big Dipper. The last two stars in the cup point directly at Polaris, which is about five times as far out as the distance between those two stars in the cup. Facing Polaris, you are looking North, with East on your right and West on your left (Figure 6).

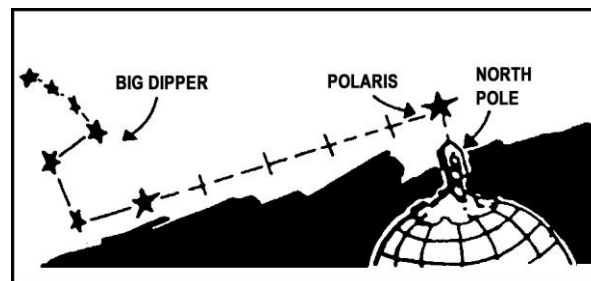


Figure 6: North Star method.