

Learning to Hunt

Hosting a hunting-
based outdoor skills
event in your
community



Mary Kay Salwey, Ph.D.
Wisconsin
Department of Natural Resources
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Credits

Project Director

Mary Kay Salwey, Ph.D.
Wisconsin DNR
Bureau of Wildlife Management
Box 7921
Madison, WI 53707-7921

Editorial Assistance

Nancy Williams
Carrie L. Armus

Artwork

Eric DeBoer
Mary Kay Salwey
Dynamic Graphics
Cindie Brunner

Photos

Robert Queen
Mary Kay Salwey
Mike Roach

Design Concept

Blue Raven Graphics

Electronic Layout

Mary Kay Salwey, Wisconsin DNR

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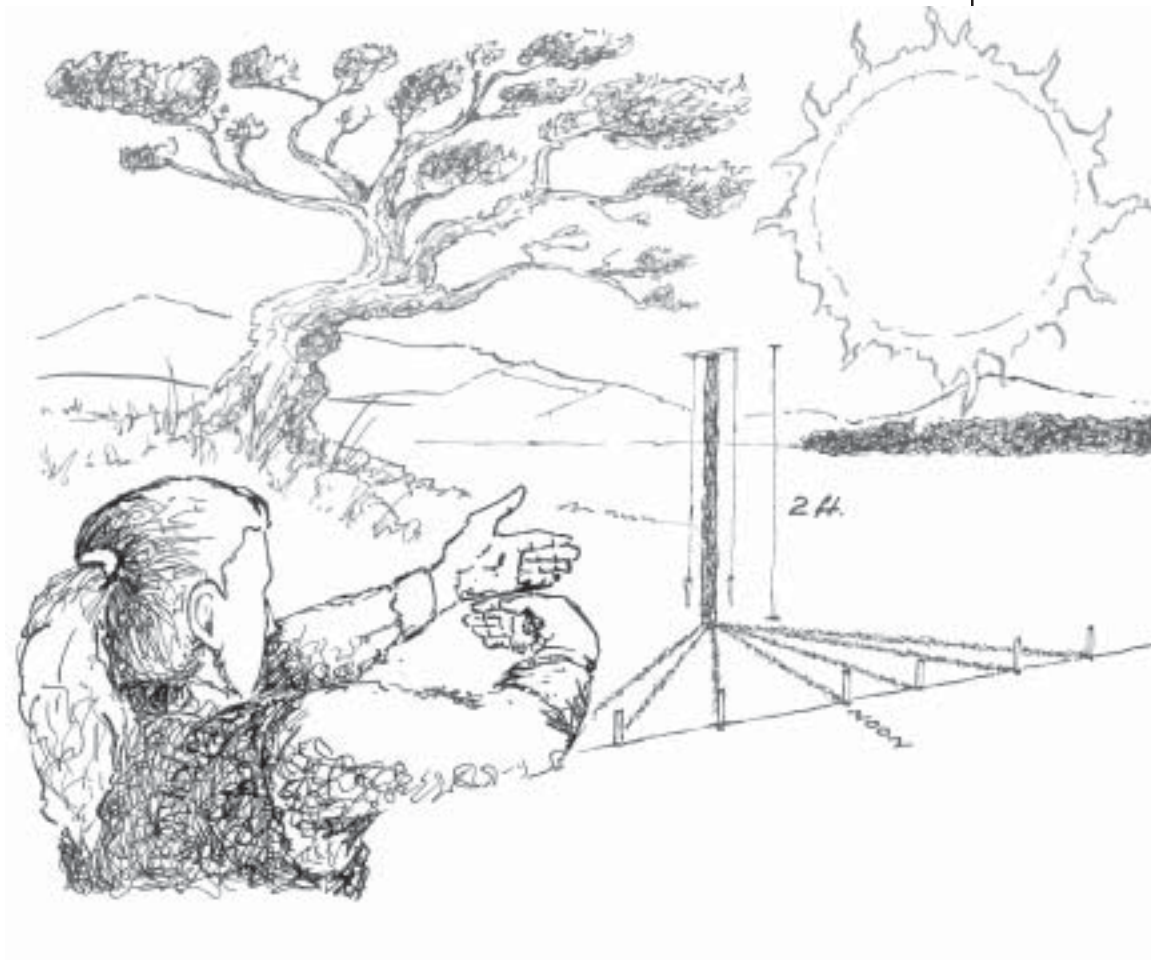
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Navigating Naturally

Using natural objects to find your way in the woods

Participants take an exploration hike and learn to navigate in the woods without the use of map and compass.



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Objectives

Participants shall:

use the sun to help determine direction while navigating in a forest.

use individual trees, rocks, and landscape features to help navigate in the woods.

demonstrate how to use their hands to estimate the amount of time until sundown.

demonstrate how to use a wristwatch as a compass.

describe how to use a sundial compass.

describe how to navigate using the Dipper constellations.

Equipment

Water bottles, first aid kit, insect repellent

Two-way radio or cellular telephone (turned off and hidden from hikers)

Large roll of blaze orange flagging or several dozen blaze orange flags on wire stems

Detailed topographic map of the hiking area including gradients and vegetation

Compass

Long piece of lath or straight stick

Plumb bob or string with a weight

6-12 small sticks

Wristwatch with minute and hour hands

Wooden matchstick

Station Setup

Use good judgment when selecting a location for your exploration hike. Keep the safety of participants in mind, as well as the sensitivity of the off-trail site to trampling. Choose an area with level or gently rolling land. Avoid selecting sites with obviously difficult terrain such as steep slopes, swamps, or dense, thorny brush. Also avoid sites with infestations of poison ivy. Check out your site prior to your group's arrival to ensure that the mosquitoes, black flies or deer flies are not overwhelming.

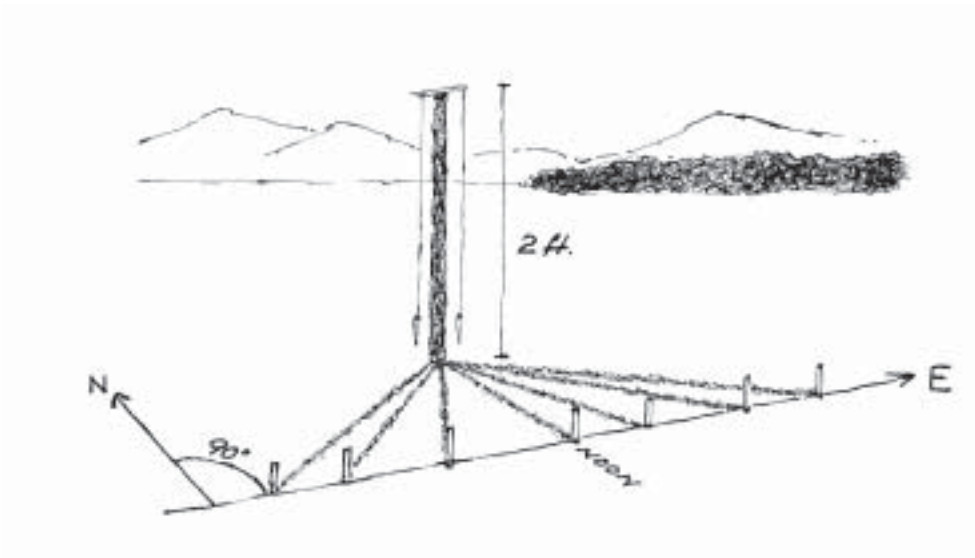


Two-way radios are important safety devices in remote areas.

Select a place unfamiliar to your participants. An ideal spot is an acre of forest marked off with blaze orange flags. Choosing a forested area ensures that participants will be reasonably isolated from the sight of buildings, and at least somewhat shielded from loud, unnatural sounds. Select an area with few or no trails. If trails are present, avoid using them.

As hike leader, try to select an area where you can take your group up to one-half mile from any roads or heavily used trails. This will provide you with a route approximately one-mile in length. State forests or National Forests are excellent for this type of activity since they have large tracts of land containing no hiking trails or roads, and the landscape can withstand the impact of the group.

One or two days before your group arrives, prepare a sundial using a set of sticks. You can use this sundial after your exploration hike to demonstrate how to tell direction. Here's how to set it up: Sometime before midday, push a stick or rod at least two feet tall into the ground. The taller the stick, the faster this trick works. Use the plumb bob to make sure the stick is as vertical as possible. Clear away debris and smooth the dirt in the area where the stick's shadow falls. Mark the position of the end of the shadow with a small stick pushed into the ground. Continue marking every few minutes, noting the time for each mark. The shadow will become progressively shorter. Keep doing this until the shadow begins to lengthen again.



Leader's Trip Tips

It is important to be careful on any nature hike. In the case of an exploration hike, be extra cautious because your participants will be farther from roads, trails and, as a result, medical help. The following added precautions are suggested:

1. Carry a two-way radio or cellular telephone. Keep it turned off and out of sight so hikers don't become dependent on a lifeline to civilization while out in the woods.
2. Be aware at all times of the fastest possible route back to the starting point in case of illness, injury, bad weather or excessive mosquitoes and deer flies.
3. On extremely windy days, keep the hikers away from large, dead trees that can drop heavy branches.
4. On extremely hot days, walk slowly and rest more often, especially if elderly people or small children are in your group. Encourage participants to drink frequently from their water bottles.
5. Always carry at least one good compass, especially when going into large forested areas without roads or trails.
6. Avoid walking through very dense brush, thorny shrubs, vines and brambles. Stay away from rough, rocky terrain and areas with large numbers of downed trees. Walk around patches of poison ivy, stinging nettle, wild parsnip and other irritating plants.
7. For rest periods, choose a place with few downed branches or other debris. Watch out for red or black mound-building ants.
8. Watch the ground for entrance holes to yellow jacket nests. Watch for hanging nests of bald-faced hornets. Do not allow hikers to kick rotting logs, as they are often home to yellow jackets.
9. Be aware of slippery logs and rocks when crossing small streams or low wet areas.
10. If the same area is used many times, do not use the same lines of travel on successive hikes. This will reduce the likelihood of new, unwanted trails that interfere with the teaching of navigation skills.
11. Guide the hikers away from areas containing rare plants.
12. **NEVER** jokingly say "Gosh, I've lost the compass," or "I think we're lost." Some people are truly afraid of the woods and statements like these can cause panic. The well being of the group rests in your hands.



Poison Ivy: Three Leaves, Let it Be



Background Information

People were moving around this world long before there were maps and compasses. How did they do it? They sharpened their eyes and memory for details. They became very familiar with the surrounding landscape so that trees, rock outcroppings, hills, ridges, streams, and ponds became unique and memorable.

An exploration hike is different from a typical nature hike, in that it takes the leader and participants off the site's traditional hiking trails. The primary purpose of an exploration hike is to teach participants how to find their way into and out of a forested area using the sun, the wind, and the features of the surrounding landscape.

While it is generally wise to carry a topographic map with you when you are hunting in a large, unfamiliar or wilderness territory, there are some methods you can use to help you navigate without a map.

Stay on a trail, and make note of which side branches you take.

Keep a mental map. This last method is the least reliable, since human memory can usually only recall about 7 (plus or minus 2) pieces of information such as telephone numbers. This method can come in handy, however, when you want to travel a short distance. For instance, if fishermen want to leave their car to travel to a trout stream that runs through some thick woods, and they can't see long distances in order to relate to reference points



Native Americans knew how to navigate naturally, using sun, moon, stars and natural landmarks.

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on the horizon, they can make mental notes of distinctive trees or other significant natural features. Anytime an outdoors person begins traveling longer distances where their memory can fail, they should draw a crude map, keep track of the walking times between landmarks, and record the various identifiable features along the way, especially at junctions where they begin traveling at a different bearing.

Draw a map of your own including significant features such as an unusual tree struck by lightning, a particular rock outcropping, or an overhanging clump of trees near a stream.



A distinctive tree can help you recall your path on your return trip.

Navigating rules to remember

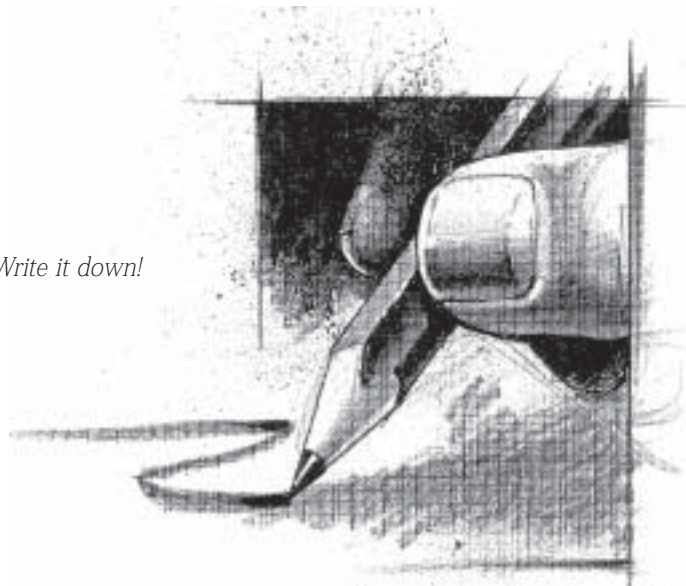
Always look behind you. The route will look quite different traveling back from the direction you came.

Write it down! If you hike back later that day, or a day or week later, your memory may not recall the detail you thought. Also, if you think you may be lost, the panic you feel will also affect your ability to recall accurately.

Pick out very distinctive features in the landscape for recording on your map. A tree that seems unmistakable when you first see it may well merge its image with hundreds of others by the next day or a week later. By describing its unique qualities on paper, you will find out just how easy it is to recognize these objects later.

In general it takes about 15 minutes to cover one mile walking on a highway; about 25 minutes to cover a mile walking through a field; about 30 minutes walking through open woods and about 40 minutes in mountainous areas.

Write it down!



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Activity

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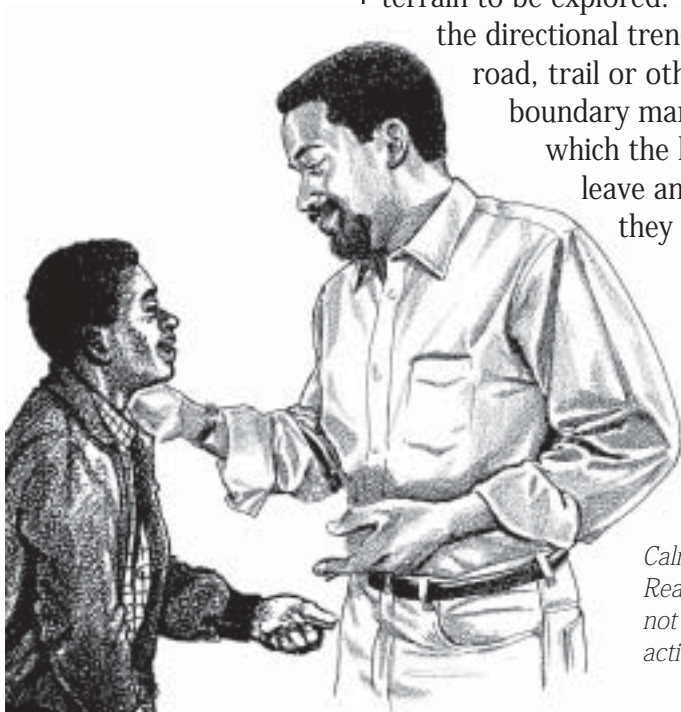
Procedure

Before your exploration hike begins, ask your participants to envision what early explorers must have felt as they traveled through the state's uncharted wilderness. Did they have map and compass two hundred years ago? Discuss the thoughts of your participants. Explain that this activity's primary objective is to help them learn some "woods navigation" the art of navigating in the woods without map or compass.

Accurate initial orientation is essential. Use a detailed topographic map of the area to orient participants to the exact location of the starting point, the boundaries of the area in which they will hike, and the type of terrain to be explored. Point out the directional trend of the road, trail or other obvious boundary marks from which the hikers will leave and to which they will return.

Reassure the group that you will not allow them to get lost. Many people experience fear or even panic at the thought of getting lost in a remote forested area devoid of human habitation. Take the time to alleviate any fears they may be expressing verbally or through body language. Ask participants to be reasonably quiet and use subdued voices during the hike. This will greatly increase their chances of seeing or hearing wildlife and other sounds of nature. Questions should be encouraged and quiet dialogues established, but kept within reasonable limits.

Take your participants to the area you just outlined on the map and have them explore the acre of forest. Have them look carefully at the trees or other plants, as well as physical features such as rocks, bodies of water, and high or low spots in the terrain. Don't tell them to look for the position of the sun at this point. See if any of them do this on their own.



Calm the fears of your group. Reassure them that they will not get lost during this activity.

Ask participants to use their senses of sight, smell, touch and hearing. Pause for three- to five- minute rest periods where hikers can sit on the ground or lean against trees. While resting, encourage the group to engage in quiet discussions of concepts, principles or objects seen nearby.

Take everyone to a far edge or corner of the parcel of land and find one particularly interesting tree with unique characteristics. Tell them a story about the tree. Talk about the kind of tree that it is (oak, maple, spruce, etc.) and where these types of trees normally grow. Ask them to feel the bark of the tree and point out any unusual characteristics, such as a forked trunk or unusual angle among the branches.

Now lead participants well out of the hiking area. Ask them how they felt about being in a novel setting. Did they feel uncomfortable at first because it was unfamiliar? Did they grow more comfortable as time went on? Have them think about the story tree. Ask them to create a mental picture of how they would find it again. Lead participants back to the edge of the activity

site, but by a different route. Ask them to find the tree. See who finds the tree first. Gather them back together and ask how they felt while they were trying to orient themselves on their own. What cues from the environment did they use? Discuss some of the methods that can aid one in navigating naturally without the use of map or compass. These include the methods discussed on the following pages.

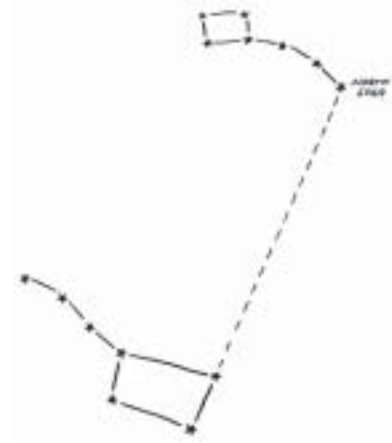
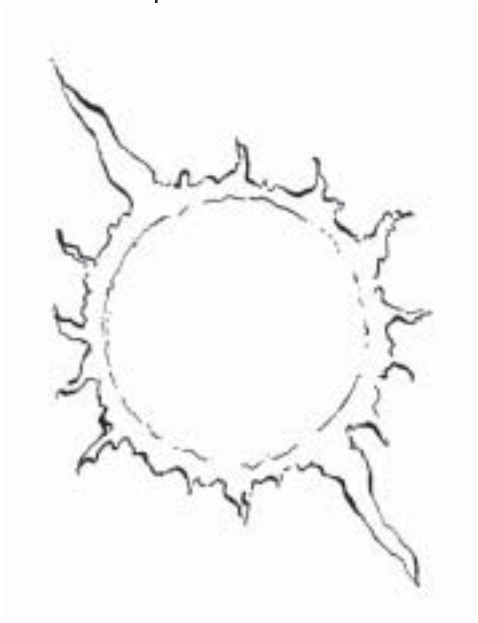


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Sun. It rises in the east and sets in the west. At any time of year, the sun is at true south at its highest point (as is the moon). Depending on where you are in your time zone, the highest point may or may not be reached at noon. Only those people in the middle of the time zone will experience the highest point at 12:00 noon. Explain that even on an overcast day when one can't pinpoint the sun's position, a stick, ski pole or knife blade will often cast a faint shadow on a light surface such as paper or snow. Also explain that if hikers were caught out in really poor visibility, they would be wise to sit tight and await improved conditions or rescue.



Stars. Since ancient times, people have navigated by the stars. Explain that the North Star remains at a constant location in the night sky all through the night. Explain, too, that the North Star is the last star in the handle of the Little Dipper and that the two front stars of the Big Dipper point toward the North Star.

Wind. Generally, in good weather, the prevailing wind direction in Wisconsin is from the west. Prevailing winds are so constant in most places that tree branches are shorter on the side of the tree facing the wind. Observe and discuss cloud movement, especially on days when strong winds are blowing.

Moss. The old adage is that moss grows on the north side of trees. Explain that this method is generally unreliable, but in certain forest environments moss really does grow denser on the trunks' north sides.

Landmarks. Ask participants to look at the surrounding landscape. Can they see distinctive ridges, unusual trees such as those that are dead, those struck by lightning, or those with unusual forks in their trunks, or any other distinctive landmarks to use in navigating naturally? Finding and recalling distinctive features while walking into an area can be used later to help them navigate out. For example, a birder might recall a bright opening in the middle of the forest where grassland songbirds were singing. These birds, having different songs from forest songbirds, can be used to help the birder find the way out of the forest.



Even the song of a bird...such as that of a meadowlark...in the middle of a forest can give you clues as to where you may be.

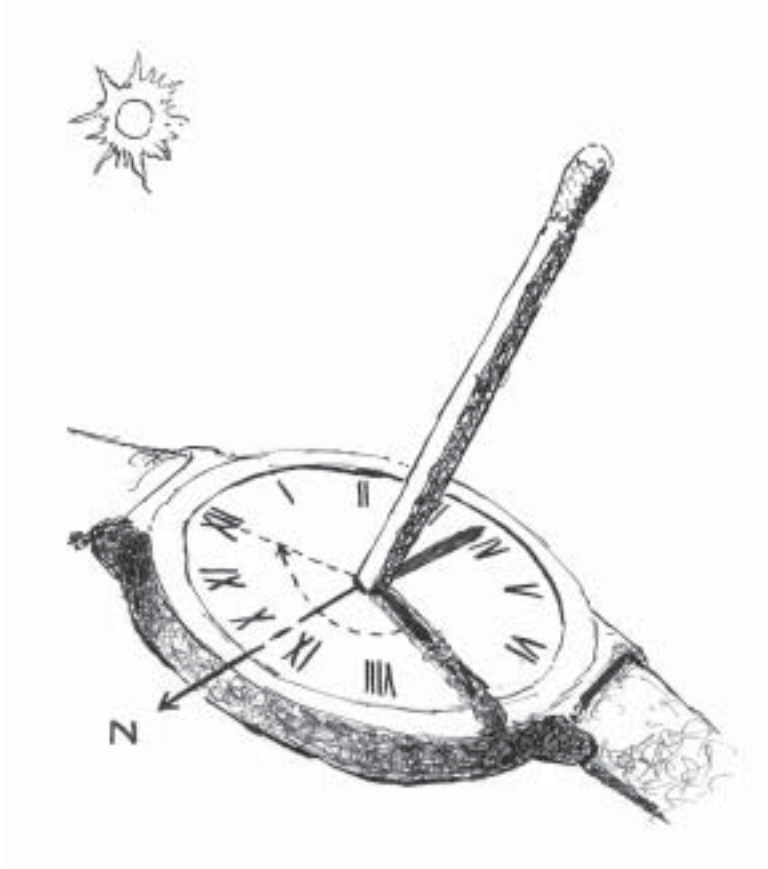
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Waterways. Water always flows downhill, leads to larger rivers and eventually the sea. Following a creek downstream will usually lead to a human dwelling.





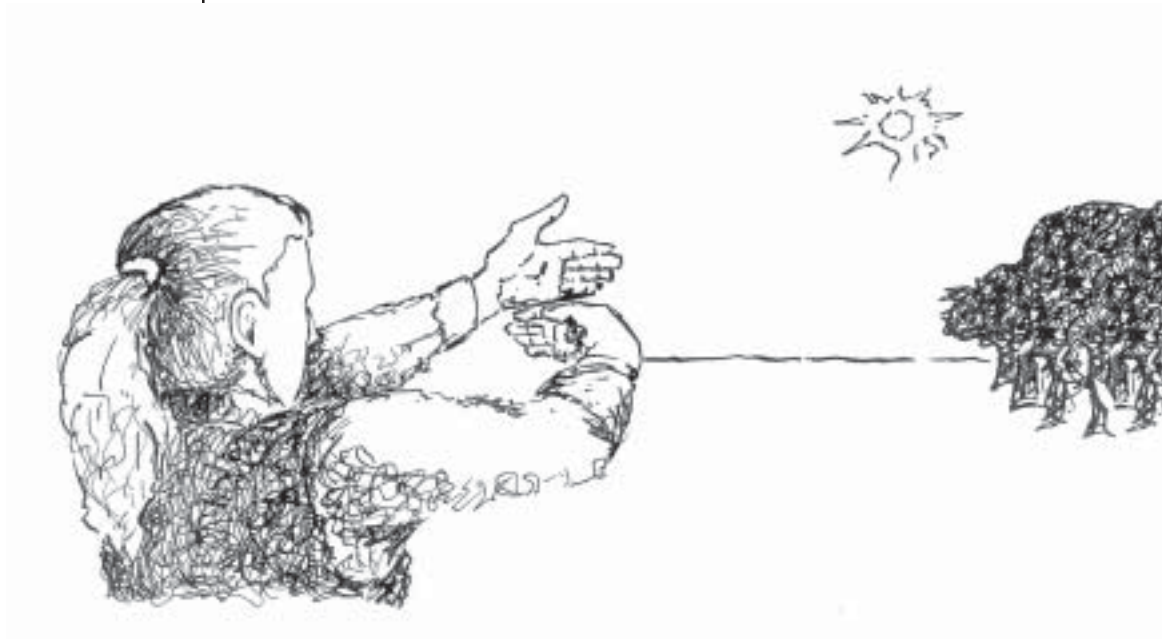
Wristwatch. Explain to your participants that they can use their wristwatches as a compass in case of emergency. The watch has to be the traditional kind with an hour hand and minute hand. This doesn't work with a digital watch. First, correct for Daylight Saving time by moving the watch's time back an hour during the summer. Hold the watch horizontally and place a wooden matchstick, vertically, in the center of the dial. Turn the watch until the matchstick's shadow lies over the hour hand. The point on the watch face that is halfway between the hour hand and 12 noon will be North.

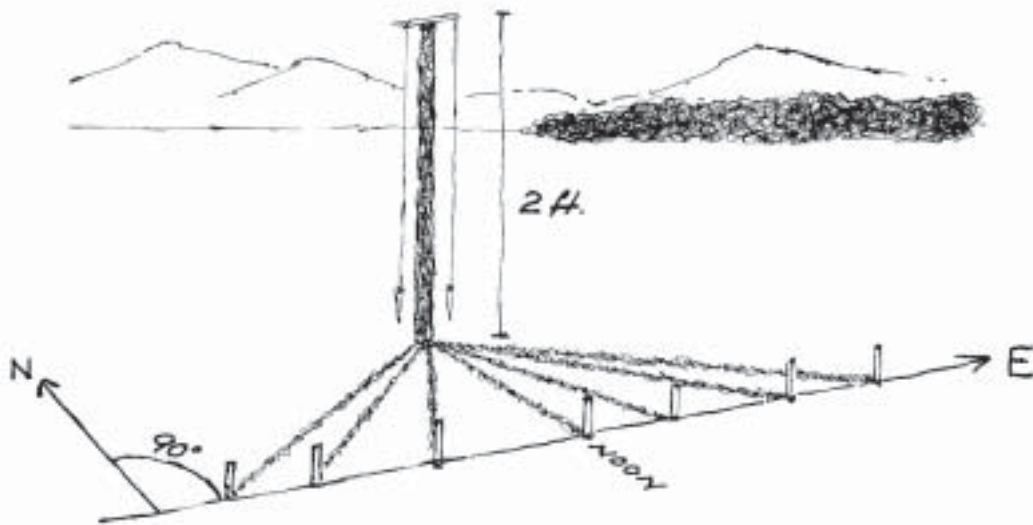
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Using your hands to tell time. When hiking remote areas, it's important to have an idea how much daylight is left, so you can determine when to begin hiking back to camp. Even without a working watch, you can estimate the time by using your hands. Stretch your arm out straight, with the palm of your hand facing you. Hold your palm with your little finger parallel to and touching the horizon. Each finger-width represents fifteen minutes, so the width of your palm is equivalent to one hour. Place your other palm on top of the first one and continue this until your palm touches the sun. This will tell you the approximate number of minutes or hours until sundown.





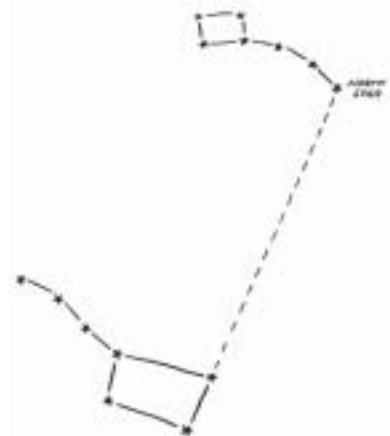
Sundial Stick. Take your participants to the area where you previously set up a sundial with sticks. Describe how you can use the sundial to determine local apparent noon and the direction north with this stick-and-shadow method. The time of the shortest shadow is the time when the sun passed the local meridian. This is called local apparent noon. The direction opposite the shortest shadow is geographical north. You may have to estimate the position of the shortest shadow by finding a line midway between two shadows of equal length, one before noon and one after. The line connecting all the little sticks falls in an east-west direction, with west being at the first little stick you pushed into the ground. This method is rough. It only produces a straight line around the spring and fall equinox. The line connecting the individual shadow lengths is curved at other times of year.

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After discussing these various ways of finding direction or time of day, allow the group to find their way out using these various methods. Let some individuals navigate by the sun to see how close they can come to the hike's starting point. Explain and use intentional direction-of-travel deviation (commonly called "bracketing") to illustrate how the group can find the starting point on the road from which they departed. For example, if the group has been hiking straight north from an east-west trending road, the starting point is obviously straight south. Therefore, when the group begins its return, it should head somewhat to the southeast until arriving at the road east of the starting point. Then by hiking west on the road, the group should find their starting point.



References

Survival: Training Edition, Air Training Command, Department of the Air Force, 1969. (training manual for Air Force)