Orienteering

A guide to Orienteering at Girl Scouts Arizona Cactus-Pine camps.

By Jack Kelly

Camps

Girl Scouts Arizona Cactus-Pine has four camps with an Orienteering course. The four camps are: Parsons Leadership Center at the base of South Mountain in Phoenix, Camp Maripai just South of Prescott, Willow Springs Program Center just West of Prescott and Shadow Rim Ranch just North of Payson.

Orienteering

Orienteering is an exciting and challenging sport. The aim is to navigate around several controls marked on a specially drawn map in the quickest time possible. The challenge involves picking the best route and successfully navigating it as quickly as possible. Orienteering is a "thinking" outdoor sport.

Orienteering is a very flexible sport and is suitable for all levels of fitness and all ages – competitors at orienteering events range from age 6 to 90! There is absolutely no obligation to run while doing an orienteering course, and beginners usually find they are better off going slowly to concentrate on reading the map accurately rather than rushing round.

Orienteering events can be divided into two main types: Sprint and Score-O.

Sprint

At a Sprint Orienteering event the participates find the controls in a specified order, the winner is the person with the fastest time. The participates start at different times (staggered start) usually separated by two minutes, to discourage following.

For younger participates the course can be only a few Controls and not the compete set of Controls. These can be Controls closer to the Start.

Score-O

At a Score-O Orienteering event all participates start at the same time. Participates visit as many controls as they can, in any order, within a specified time limit (ie 90 minutes). Each Control is worth one point. There is a one-point penalty for each minute that you finish over the time limit. The winner is the person with the most points.

At the Start

The participates are grouped in groups of two. Each participate receives a map, a compass and each group paper and pencil.

At the Finish

The finish area is located near the start area. Check at the finish to see if your two letter designations are correct for each control.

If this is a timed event, check at the finish to get your finish time. Then subtract your finish time from the start time to get the course time.

The Map

The map is your main tool for completing the orienteering course.

Your orienteering map is a topographic map that is customized to cover the meet area in rich detail. It includes many symbols unique to orienteering. Declination does not come into play, because all orienteering maps align with magnetic north, not true north. That simplifies map reading when you navigate while moving quickly. Measurements are in meters as Orienteering is an international sport.

The course has a series of controls where you must record your visit. At each control you will find a 3-inch brass marker set into the ground. It will look like this:

Orienteering
Control 1
JK

At each control write down the two-letter designation on the control marker.

Walking—and stopping—are perfectly fine. A common mistake is to run off with only half a notion of where you are headed because it's a "race." Smart route choices can save more time than a speedy pace.

Equipment each participate has with them on an Orienteering course

1. Orienteering map for each participate (given out at the starting point)
2. Compass (see some examples in a later section)
3. Water
4. Whistle (used for emergencies only)
5. Small backpack – optional
6. Sun hat – optional
7. Paper
8. Pencil or pen (to write the Control two letter designator)

For emergencies blow the whistle 6 times wait 1 minute and blow again 6 times. This is the International Distress Signal. Keep repeating this pattern. Listen between blowing the whistle for a single whistle sound. This is a signal that someone has heard your distress call and is tracking your sound to come and help you.

Orienteering Ethics

1. Stop and help anyone that has a medical emergency.

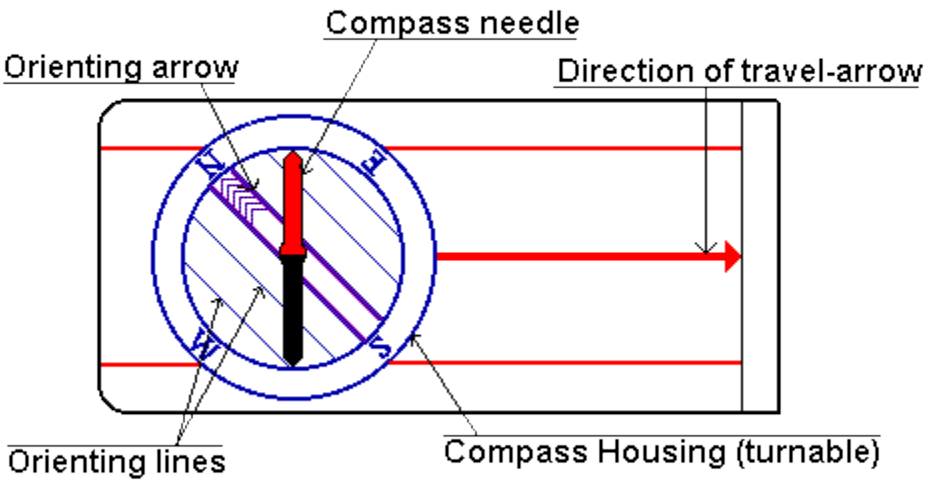
2. Find and help anyone who is whistling a distress call.

3. Help anyone that is lost. You can show them where they are on the map.

4. Do not follow other participates on the Orienteering course.

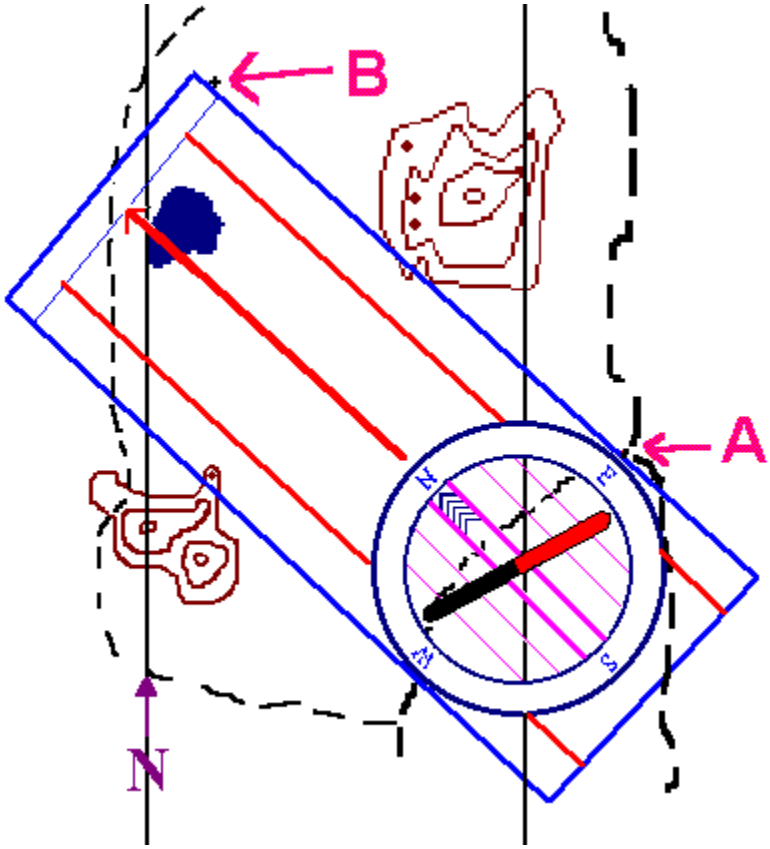
5. Do not disturb the Controls. But please clean off any leaves or other debris covering the Control.

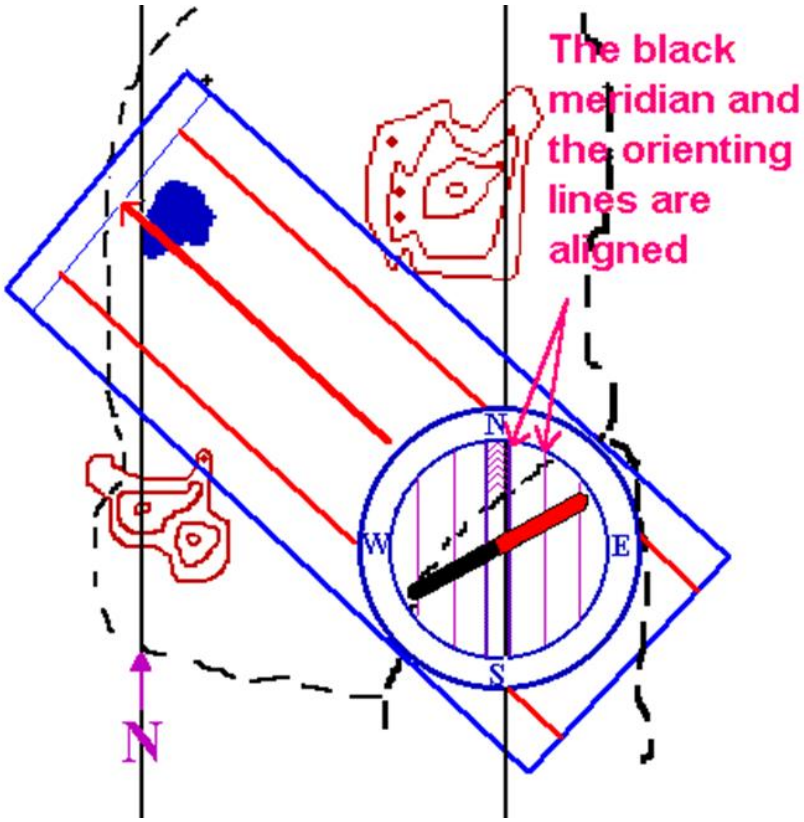
Using the Map and Compass



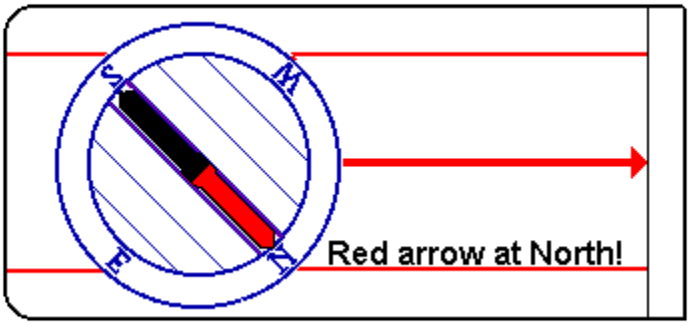
The map is the most important tool for orienteering. The compass is the next tool for use on the orienteering course.

You want to go from the trail-crossing at A, to the rock at B. You put your compass on the map so that the edge of the compass is at A. And then, put B somewhere along the same edge, like it is on the drawing. The direction arrow now points from A to B.





You now align the orienting lines and the orienting arrow with the meridian lines of the map. During this process, you do not mind what happens to the compass needle. 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 number of degrees off the housing, from where the housing meets the direction arrow.



The final step is to hold the compass in your hand. And now you will 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 does not turn, and turn it until the compass needle is aligned with the lines inside the compass housing. This is called “Putting red in the shed”.

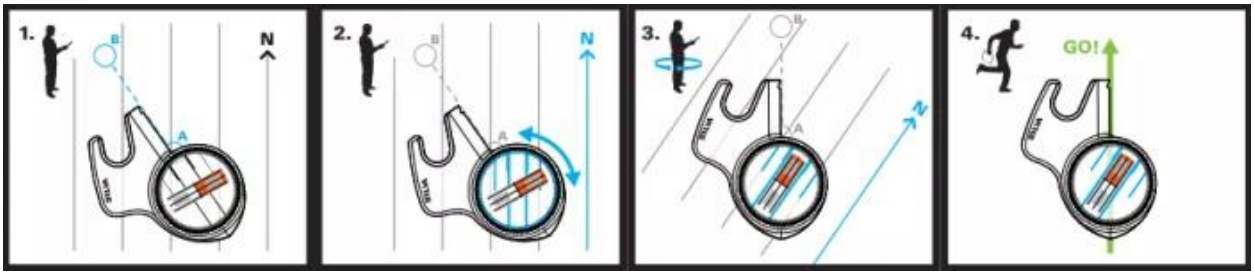
Using the Map and Compass to Navigate to the Next Control

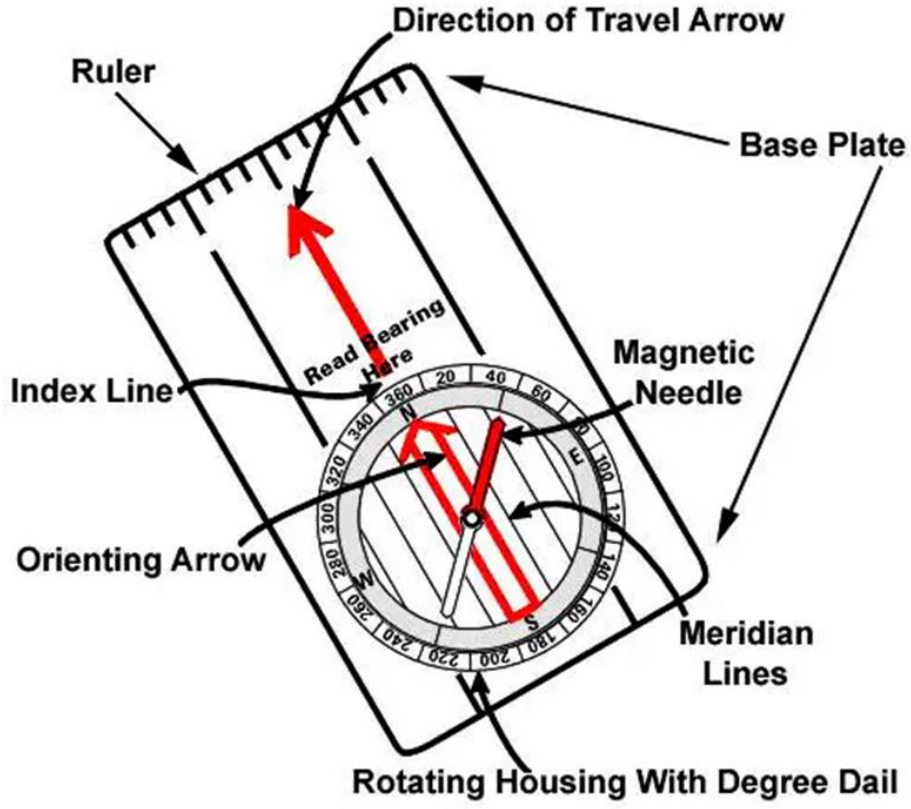
(Step 1) Simply line up the edge of your compass (base plate) using the direction of travel arrow to point from Point A to Point B.

(Step 2) Rotate the housing so that the meridian lines line up with the north index lines on the map.

(Step 3) Then remove the compass from the map and rotate yourself so that the red of the magnetic needle and the red orienting arrow in the housing are both on top of each other. This is called "Putting red in the shed".

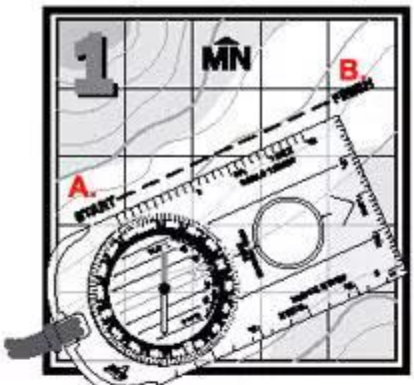
(Step 4) head off.



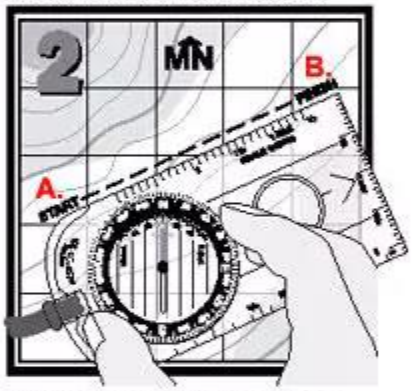


Taking a Bearing from a Map

Taking a bearing from a map.



On the map align either the left or the right edge of the base plate through landmarks A and B with the direction of travel arrow pointing toward B.



Turn the compass housing until the orienteering arrow points to the top of the map .

Read the bearing at the compasses index line, and follow the bearing in the field.

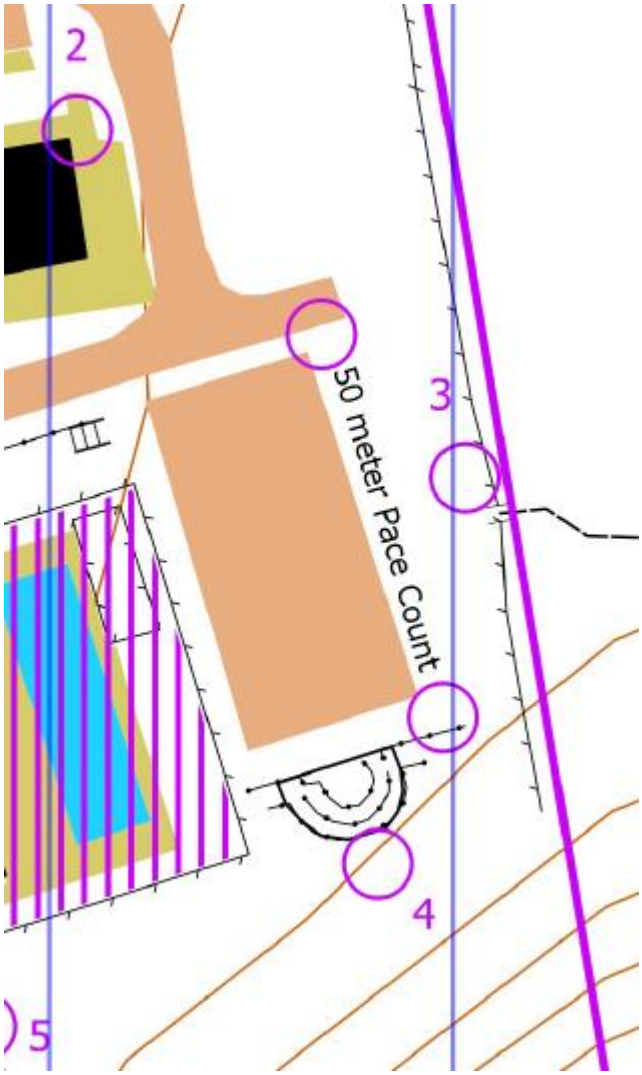
Pace Counting

Pace Counting

Pace Counting is another tool for use on the orienteering course.

A pace is measured every time your right foot hits the ground. A pace count is the number of paces per 100 meters. On the map below are two purple circles with the words "50 meter Pace Count" in between. Walk from one marker to the other marker and back to get your pace for 100 meters.

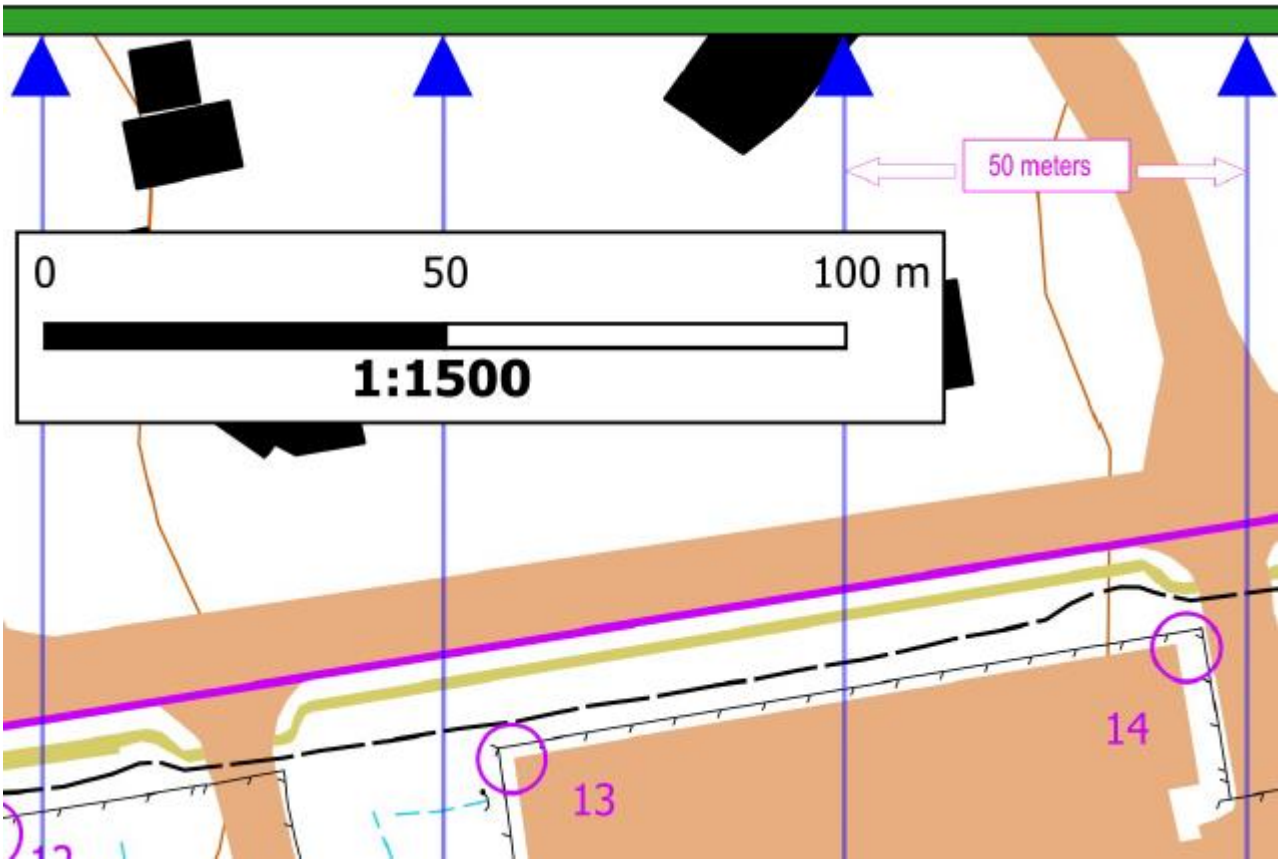
Your pace for 50 meters would be half your pace for 100 meters.



Using Pace Counting

Using Pace Counting

Pace Counting is a tool that you can use to help navigate successfully. Look at the orienteering map below. Between each magnetic blue line is 50 meters. From Control 13 to Control 14 is a little less than 100 meters. Thus if you go 100 meters from Control 13 and can not find Control 14 then you would look behind your location at 100 meters.



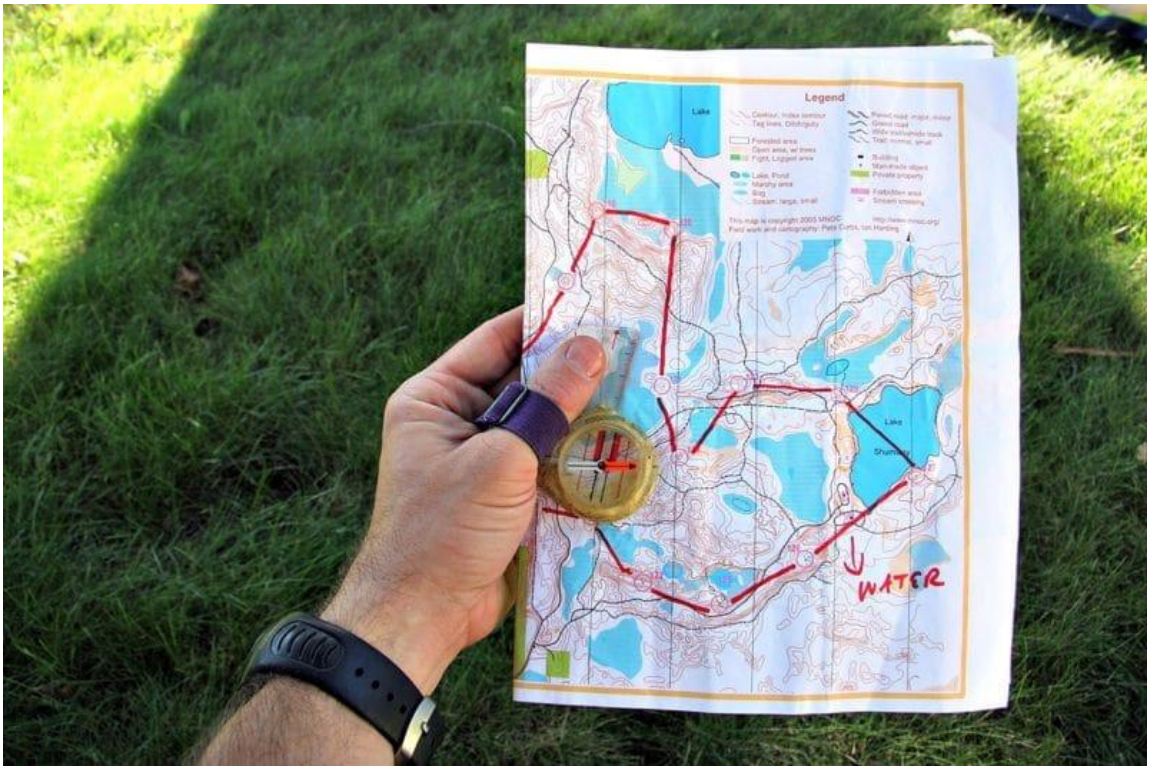
Compass Types

Used in Orienteering

Thumb Compass

Base Plate Compass

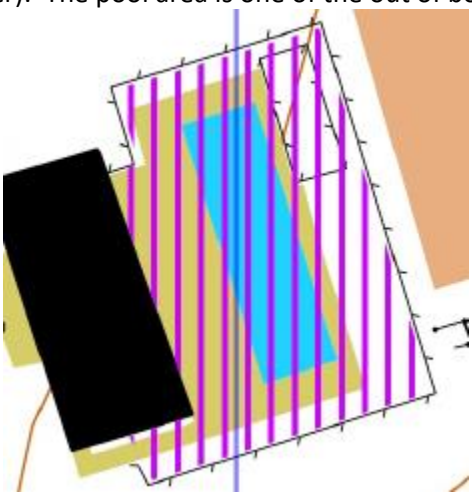

39
50
49
52
46
54


Legend
Lake
WATER

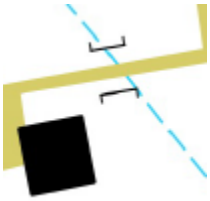
Map Symbols

The course start is a triangle. The finish is a double circle.

Out of Bounds Area (Do not enter). The pool area is one of the out of bounds areas.

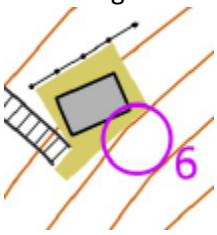


Bridge with intermittently water

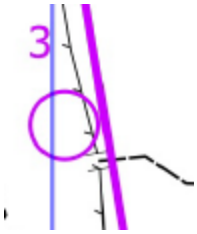


A junction of two fences and a power pole (T) North of the fence junction. The purple lines are do not cross out of bounds.

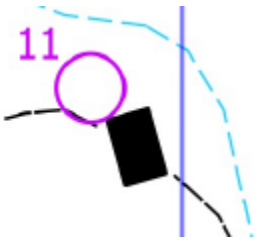
A stairway to a ramada (open sides with no walls) with a control behind the ramada and a wall in front of the ramada. The brown contour lines are close together showing that it is steep here.



South of the Control is a gate along the fence. The gate leads to a trail.



The black rectangle is a building. The building is on a trail. An intermittent stream is to the East of the building. The Control is on the Northwest corner of the building.



The Control is North of a boulder or large rock pile.

CAR

Use CAR when on an Orienteering course.

Control

Find the Control on the map. Check that the Control you are looking at has the correct number.

Attack Point

Pick an Attack point for the Control. The Attack Point is a clear, obvious location near the control that you can easily find. Attack Points can be buildings or trail intersections or bridges or stream crossings.

Attack Point – an unmistakable "you-can't-miss-it" feature that tells your brain to go from cruise control to careful navigation mode.

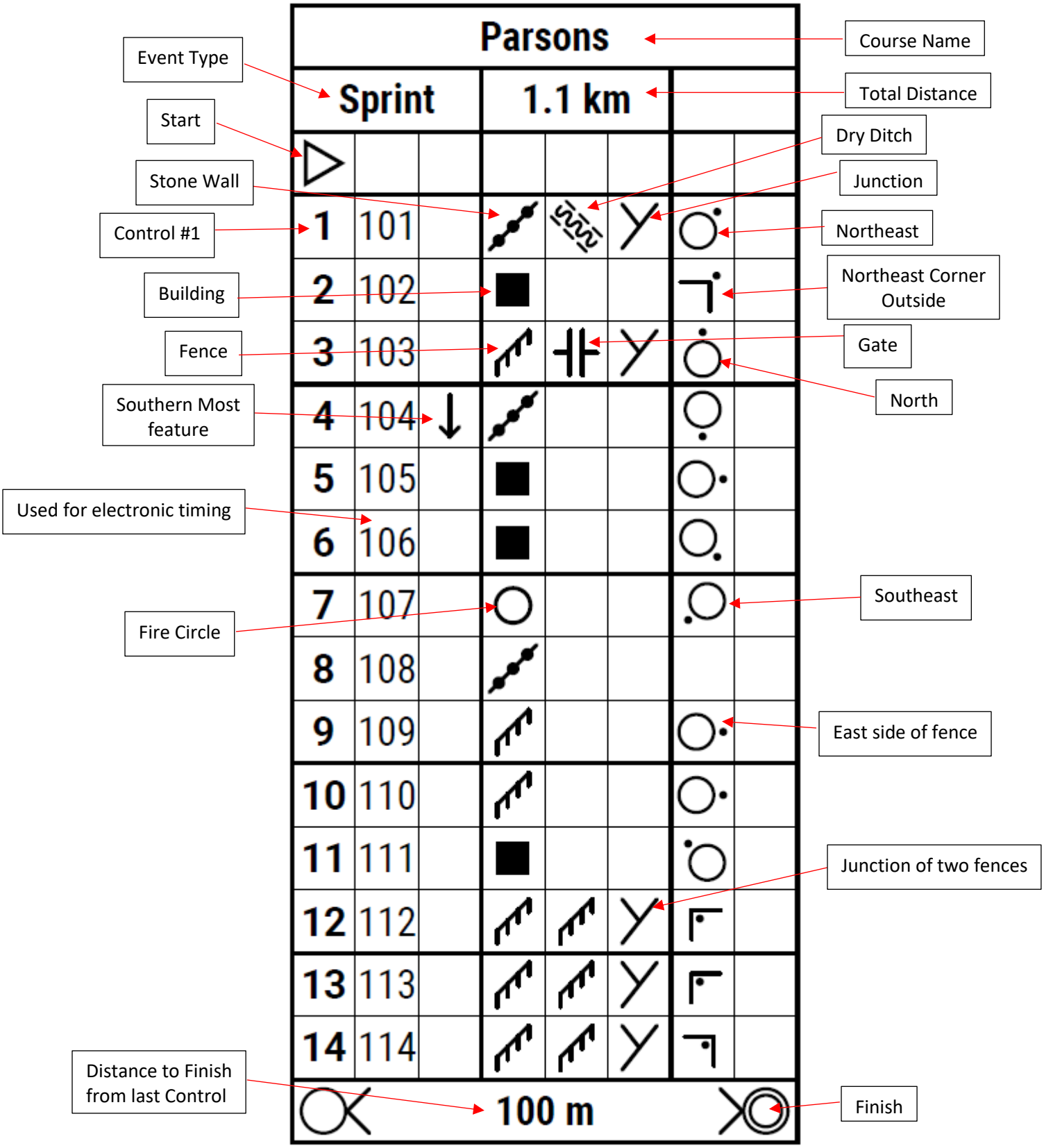
When you reach it, you know it is only a short distance to your destination. When you reach your Attack Point use careful navigation and the Control Descriptions on the back of the map.

Route

What is the best route to the Attack Point. This may not be the shortest path. Because scrambling in the woods will take longer than following a trail. The trail will be the fastest in the long run. Look for Handrails. Simple straightline (called "linear") features like trails, fences, lakes, and edges of fields "to hold onto" that will lead us most, if not all, of the way to our next target.

Catching Feature – any easily identifiable feature that you should not be running into before the control. So if it's staring right at you, you've just missed your target. But not to worry, this is a good sign. It means all you have to do is turn around and backtrack a short way. That is why it's always good to have a Catching Feature in mind. Since no one is perfect (not even the elite runners), catching a mistake right away is a major tactical skill to cultivate (a close second to actually admitting the mistake in the first place).

Control Descriptions



Orienteering Terms

Aiming off	Technique where you deliberately aim not to hit the control straight on but instead to approach it from a certain direction, usually from either the left or the right.
Attack Point	An obvious feature near the control point from which the control can be located.
Bearing	The direction of travel as indicated by the compass.
Catching feature	Also called collecting feature or backstop. An obvious feature on the map and ground located beyond a control or other sought-after feature that indicates that the target feature has been overshot.
Control	A checkpoint on an orienteering course that a competitor must visit to complete the course. These are indicated on the orienteering map with a magenta circle.
Control circle	A circle drawn around a feature on the map to indicate the location of a control marker. The feature should be in the exact center of the circle.
Control descriptions	Sometimes referred to as "clues". A list given to each participant that briefly describes each control features in order. It also gives the control code.
Control feature	A natural or man-made feature on or next to the control.
Control number	A number drawn beside each control circle on a map. On a cross-country course, they indicate the order in which the controls must be visited. Information overprinted on the map (text and or control numbers) should point to Magnetic North.
Course	A sequence of control points marked on the map that are to be visited by the orienteer.
Dog-leg	Positioning of a control which favors approaching and leaving a control by the same route, thereby leading other competitors to the control. Course design which results in a dog-leg should be avoided.
Fine orienteering	Precision navigation in detailed terrain usually demanding careful use of map, compass and pace counting, and usually involving short course legs.
Finish symbol	If it shares the same location as the start, it will be a circle with a triangle overlapping. If its location is separate from the start, it is shown as a double circle (circle within a circle).
Folding the map	Orienteers fold their maps along the line of travel to aid concentration on the leg being run, and to facilitate thumbing their position.

Foot-O	Normal orienteering, i.e. running or walking between controls
Goat (billygoat) event	A long-distance endurance event similar to cross-country orienteering courses. It usually has a mass start and often includes special rules, such as permission to skip a control.
Handrail	A linear feature that closely parallels your route and acts as a handrail to the next control.
Leg	A section of a course between two controls.
Linear feature	A feature that extends in one direction for some distance; e.g., paths, fences, stonewalls, and streams. Used as handrails.
Magnetic north line	Shown on every map, it can be aligned with the north arrow of a compass to orient the map to the terrain. The spacing between north lines varies depending on the scale of the map. All words and symbols used are also aligned to the magnetic north lines.
Night-O	Normal orienteering, but in the dark. Orienteers use headlamps.
Orienting the map	Matching the orientation of the map to the features on the ground. This is one of the fundamental skills in orienteering and leads to successful navigation. The map can be oriented either by comparing the map directly with the terrain or by using a compass to orient to north.
Pace counting	A system of counting double-paces (right foot hits the ground) to measure distance covered. An orienteer would measure the distance between two points using the scale on the compass and then count his/her paces until the distance was covered. Pacing allows orienteers to know when they have gone too far and missed the feature they were looking for.
Point feature	A feature in the terrain that only occupies a small area. Frequently mapped examples are boulders, pits and mounds, stumps, and root mounds. Point features are not suitable as control sites for novice courses unless they are on a handrail.
Precision bearing	Some compasses can be used to take a precise bearing (degrees clockwise from north) which can then be followed in the terrain.
Reentrant	A small, relatively shallow valley running down a hillside, where water could flow. On a map, the contour lines point uphill where a reentrant occurs. The "spatial" opposite of a spur.
Rogaine	A long score-O, usually held in a very large area. Often the map is a USGS map, rather than a standard orienteering map, although many recent rogaines have used maps which are similar to standard O maps. Rogaines must be run in teams,

	usually of two people, and often last up to 24 hours. The word ROGAINE is said to be an acronym for Rugged Outdoor Group Activity Involving Navigation and Endurance. The word may also be a consolidation of the supposed Australian inventors of the idea, something like Rob, Gail and Ned. It has nothing to do with hair.
Safety bearing	A compass bearing that will bring a lost orienteer to a road or other major, recognizable feature. It may be added to the control description list as a safety measure.
Safety whistle	A whistle that can be used if a participant is injured or lost. The International Distress Signal is six short blasts repeated at one-minute intervals. Whistles are required at many orienteering events and are often available from event organizers for a small fee.
Setting the map	Also known as orientating the map, to hold the map so that it reflects the direction in which you are running.
Score-O	A Score-O is an orienteering event in which the controls may be visited in any order, but time is limited. Controls may have different point values; greater points are assigned to controls that are more difficult to locate or that are greater distance from the start. The orienteer must decide how many controls can be visited within the set time limit. Penalty points are applied to those out for longer than the set time. Longer Score-Os are called Rogaines. The winner has the most points. If two people are tied for points, then the person with the shortest time wins. Score-O are usually started with a mass start. Everyone starts at the same time.
Sprint	The controls must be visited in a specified order (ie Control #1, Control #2, Control #3, etc). The winner has the shortest time without missing any controls. To avoid bunching up runners, start times are staggered usually two minutes between runners.
Spur	A small ridge. On a map, the contour lines point downhill for a spur.
String-O	String orienteering is a form of orienteering designed to be easier than usual for young children. A continuous "string" (actually surveying tape) marks the route to each control. Participants can follow the String through the entire course and thus will not get lost. A simplified map is used; the route of the String and the location of the controls are marked on the map.
Thumb compass	A compass held to the thumb with an elasticated band.
Thumbing	A technique for holding the map, using your thumb to indicate your present location. To do this properly, it is often necessary to fold the map.

Orienteering Clubs

https://orienteeringusa.org/

http://gphxo.org/