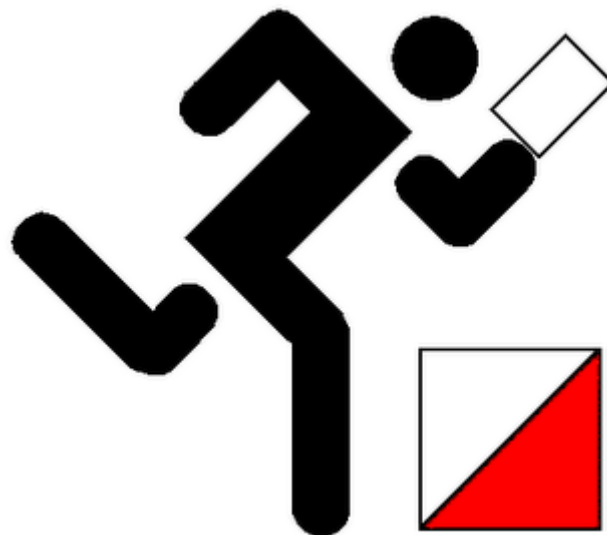


Scout Orienteering

Scouting Ireland, 2010



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Introduction

Orienteering is a sport that involves navigation with a map and compass. The typical format is a timed race in which individual participants use a special purpose 'orienteering' map and a magnetic compass to navigate through diverse terrain and collect in sequence, control points that are indicated on the map. These control points are typically only given to the competitors just after they start when they must transcribe them to the map. Competitors start at staggered intervals, are individually timed, and are expected to perform all navigation skills on their own. Full rules and principles of the sport are defined by the International Orienteering Federation.

When we look at the skills that the sport requires it is quite easy to see parallels to the Scout Method. Participant scouts are learning by doing in the outdoors with nature navigating around a course that is a personal challenge to the individual at their ability level.

Orienteering is an excellent activity to complete a Special Interest Badge in or even as a Personal Challenge from the Physical area.

This document is intended as an addition to the Scout Group programme for the month before a scout orienteering event. Its objective is to use orienteering as a theme to improve the overall navigation skills of the youth members. It is also a useful document for youth members and Scouters planning such an event.

This resource was developed by the 25th Limerick Scout Group.



Equipment Required for Training Programme

I have tried to keep the cost of the equipment for this programme to a minimum however you will need to accumulate the following.

- 1) Print copies of Appendix A of this document.
- 2) 30 x clear poly pockets.
- 3) 10 x Red pens.
- 4) 10 x Silvia type compasses.
- 5) 10 x Paper hole punches.
- 6) 10 x Multicoloured sports cones.



Equipment Required for Event

Event Equipment

The following list of equipment is required by the event co-ordinator to set out the courses described in this document.

- 1) 30 x orienteering kites.
- 2) 30 x orienteering punches.
- 3) 200 x orienteering control cards.
- 4) 200 x orienteering maps.
- 5) Beaver Scout marking signs.
(Annex C)



Group Equipment

The following list of equipment is required by the participants.

Beaver Scouts: Clear bag

Cub Scouts: Clear bag

Scouts: Clear bag, red pen, compass, safety pins

Venture Scouts: Clear bag, red pen, compass, safety pins

Rover Scouts: Clear bag, red pen, compass, safety pins



Timetable for programme

Scout Group Timetable	Group	Week -10	Week -9	Week -8	Week -7	Week -6	Week -5	Week -4	Week -3	Week -2	Week -1
Lesson 01 – String Trail Orienteering	Beaver Scouts								Red	Red	
Lesson 02 – Tracking Signs	Beaver Scouts									Red	
Lesson 03 – Orient the map	Cub Scouts							Green			
Lesson 04 – The Orienteering Equipment	Cub Scouts								Green		
Lesson 05 – The Orienteering Map	Cub Scouts									Green	
Lesson 06 – Map References	Scouts						Orange				
Lesson 07 – Contours and Map Symbols	Scouts							Orange			
Lesson 08 – Compass Work	Scouts								Orange		
Lesson 09 – The Orienteering Event	Scouts										
Lesson 10 – Map making	Venture Scouts		Purple	Purple	Purple	Purple					
Lesson 11 – Clue Symbols	Rover Scouts								Light Green	Light Green	

This timetable works back from the event. Some lessons within the group can be linked. For example the maps made by the Venture Scouts in Lesson 10 are made from week -9 to week -6 and are therefore available for the other group lessons.



Orienteering for Beaver Scouts

Beaver Scouts should be given the skills necessary to read a simple map, follow string trails and trails made with scout tracking signs. To bring in the orienteering dimension, the event should consist of an obvious trail made with obvious scout trail signs on a simplified map with orienteering controls at various intervals.

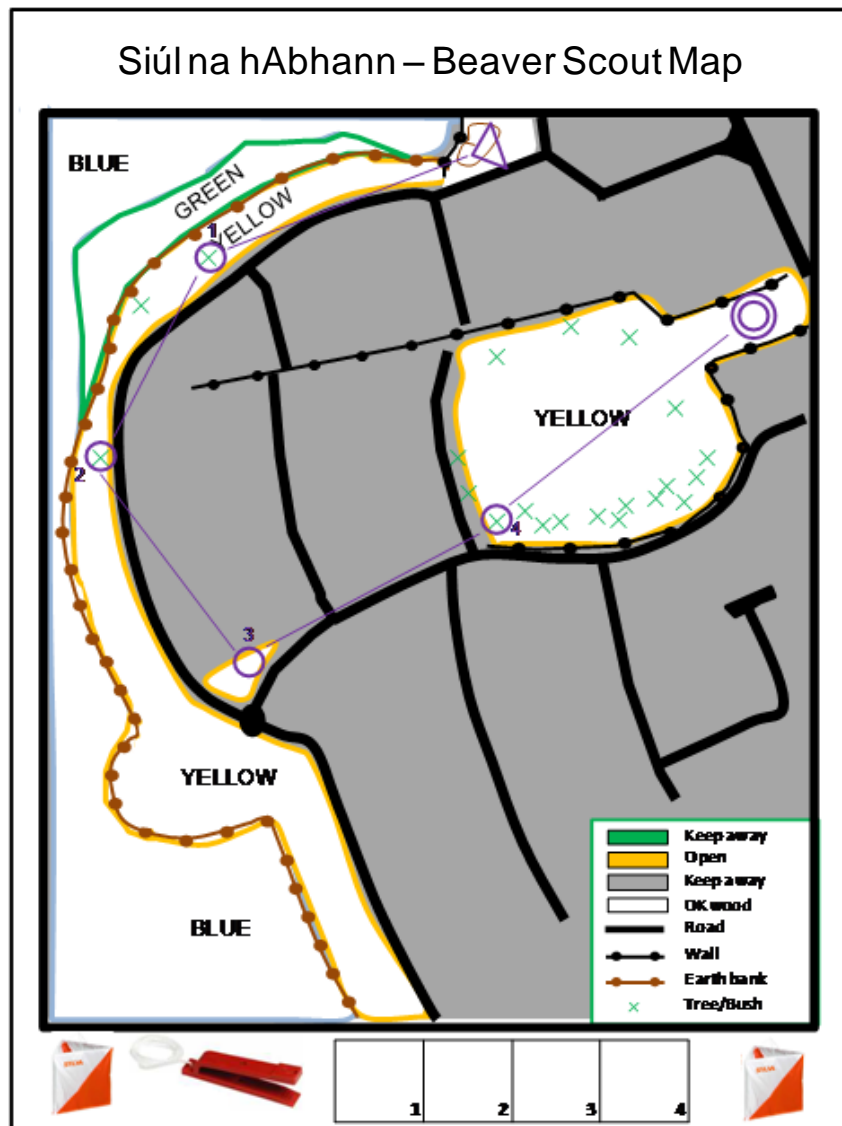


Lesson 01 – Beaver Scouts – String Trail Orienteering

Section:
Beaver Scouts

Objective:
To teach the Beaver scout about the use of maps and string trails.

The string course is a short orienteering course which is marked by a continuous ribbon or string. The map below shows a sample string-orienteeing map with the course marked. The map is usually simple and includes just the area around the course. Beaver Scouts may colour it in with the appropriate map colours, as you can see in the map below the colours are indicated for them.



Laying the String Trail

From the start, a continuous length of ribbon leads the Beaver Scout along the course. The route that the string takes is shown on the map. When the Beaver Scout reach the places circled on the map they will punch the control onto the squares on the map. Eventually the string leads back to the finish.

The Beaver Scout need only follow the string around to find all the points and will not get lost. For the youngest, this is sufficient and gives the child exercise, fun and some exposure to maps, as well as confidence in being alone in the woods. Even at this simplest level, however, children can be taught map symbols, map colours and simple orienteering skills.

Next steps

For Beaver Scouts ready for more challenge, the locations of the controls can be left off the map. The child must figure out where the controls should be on the map.

Map colour exercise

Get the Rover Scout, Venture Scout or Scout section to make a simple map around the Scout Den but leave the colours of sections off. Indicate what these colours should be and their function. Get the Beaver Scouts to colour in their map correctly.

String Trail around the den exercise

Get the Rover Scout, Venture Scout or Scout section to make a simple map around the Scout Den area.

Using the control pages in Annex E, print them out in colour and place in poly pockets, connect a hole punch with a piece of string to each and stick them up at the control points.

Lay a string trail course using these controls and get the Beaver Scouts to follow it. Once they have enough confidence to perform this, move the exercise to a park and then into the woods.



Lesson 02 – Beaver Scouts – Tracking Signs

Section:

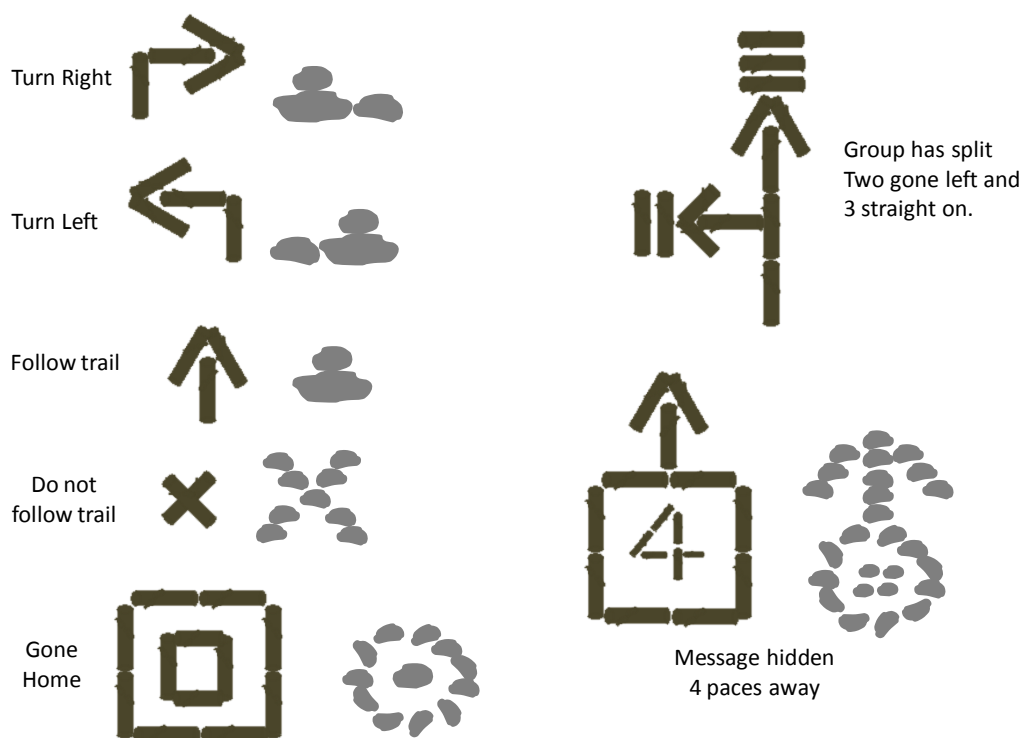
Beaver Scouts

Objective:

To teach the Beaver scout about the use of tracking signs and how to follow a tracking sign trail.

Tracking is one of the traditional Scouting activities and involves Beaver and Cub Scouts leaving signs or symbols made from natural material on a trail or course for others to follow. Tracking signs can easily be mixed with orienteering where the Beaver Scouts follow Tracking Signs instead of the string trail from orienteering control to orienteering control. When laying such a course it is important that the trail is easy for the Beaver Scout to follow.

Here is a chart of the most common Tracking Signs used by Scouts.



Tracking Sign Trail around the park

Get the Rover Scout, Venture Scout or Scout section to make a simple map around the local park. Lay a Tracking Sign trail course and get the Beaver Scouts to follow it. Once they have enough confidence to perform this, move the exercise to the woods.



Orienteering for Cub Scouts

Cub Scouts should be able to complete an orienteering course around roads, paths, bridleways and tracks that are clearly marked on the map. The key lessons that the Cub Scouts need to learn is to orient the map correctly using the topology on front of them, the sun and a compass.



Lesson 03 – Cub Scouts – Orient the map

Section:

Cub Scouts

Objective:

To teach the Cub Scout the art of map orientation.

Using the topology to orienting the map

Take Cub Scouts to a place on a local map (it does not need to be an orienteering map, a large scale ordnance survey map will be adequate).

Tell them to turn their maps to fit the ground.

Talk with them about how they did it.

Ask questions such as "how do you know it's turned to fit the ground?"

Establish that a good way to do it is to look around and find one or two big features that they think should be on the map. Ask everyone to do that.

Look for a fence line, a building, a footpath or road.

Ask them to look at their maps and find the big features, and to put a thumb on the map to show where they are standing. Then turn their maps until the big feature on their maps is on the correct side of their thumb, i.e. on the same side as the real thing is.

Next, they should check that the second big feature is also on the correct side of their thumb. They may need to turn their maps a little.

The map being turned correctly, the children should then be led to look about and check that other features fit too.

Repeat the practice at a different place on the map, preferably on the opposite side of a given building.

Folding and thumbing the map

Once the map has been turned to fit the ground the tip of a thumb should be placed on the map immediately below the position where you are standing. As you move along the thumb is moved along, checking off each feature as it is passed. Thumbing helps keep track of where you are on the map.

From time to time it will not be possible to comfortably thumb the map because of the width of the paper and where you need to put your thumb. In that case the map needs to be folded so the thumb can reach your present location on the map. Care has to be taken to fold the map so the areas around where you presently are and where you are next going to are visible. As you proceed around the course it will probably be necessary to refold the map to expose the next area that the course goes through.



Using a compass for orienting the map



This is a simple skill and is probably the most important use of the compass:

- Hold your map horizontally.
- Place the compass flat on the map.
- Rotate the map until the "north lines" on the map (a series of evenly spaced parallel lines drawn across the map, all pointing to magnetic north) are aligned with the compass needle.

The map should now be oriented to the terrain. This makes it much easier to read, just as text is easier to read right side up than upside down.

Using the sun to orienting the map

Typically orienteering events occur in the late morning or early afternoon so the sun is roughly in the south sky. You will not be going too far wrong pointing the bottom of the map (and the bottom of the “North Lines” i.e. South) at the sun to orient the map. It is wise to confirm your orientation by cross checking with some topographical features in front of you against the map.

Map orientation exercise

Using a local map or one developed by the Venture Scouts in the locality of the scout den get the Cub Scouts to orient the map without compass, simply by using the topological features around them.

When the topological method is mastered get the Cub Scouts to orient the map using the compass.



Training orienteering event

If you haven't a local orienteering map you could consider giving it to your Venture Scouts as a project to make one. However a great way to get a training event going quickly is to use Google Earth to print off a small area around your den, estate or park.



Mark out a short course around the area and give clues with the controls.

Using the control pages in Annex A, print them out in colour and place in poly pockets, connect a hole punch with a piece of string to each and stick them up at the control points.

Use the control cards in Annex E and run through your event as described in the lesson.

Lesson 04 – Cub Scouts – The Orienteering Equipment

Section:
Cub Scouts

Objective:
To teach the Cub Scout about the orienteering equipment.

Control cards can take various forms, but all include numbered boxes for punching in at successive controls as well as spaces for the name of the scout, the course and class, the start time, the finish time, and the elapsed time.

For most orienteering events, starts are staggered so that no two people on the same course start at the same time. The standard orienteering event is a point-to-point race; controls are numbered on the map and connected in the order the scout is to visit them. Upon reaching each control, the orienteer punches a pattern in the corresponding numbered box on the control card. This allows the event organisers to verify that the correct controls were visited.

The control card shown is typical.

Course		<input type="text"/>	Class		<input type="text"/>	Group		<input type="text"/>	Number		<input type="text"/>								
Name <input type="text"/>																			
Start		Minute		<input type="text"/>	Second		<input type="text"/>												
Finish		Minute		<input type="text"/>	Second		<input type="text"/>												
	21		22		23		24		25		26		27		28		29		30
	11		12		13		14		15		16		17		18		19		20
	1		2		3		4		5		6		7		8		9		10

The Cub Scout should fill in his/her name on the card and pin it to their sleeve in such a way that you can easily mark the control boxes with the control punch.



Orienteering

The Cub Scout also gets a clue card. This card gives a clue as to what to look for when you approach the area marked on the map. Is the control kite at a boulder ?, behind a tree ? or at a track, river junction ?.

Intermediate		Length	5.2 Km	Climb	156M
1	FG	Base of cliff			
2	CD	In shallow depression			
3	GT	South East side of rootstock			
4	HY	North side of boulder			
5	MN	Track , stream junction			
6	LO	Lower part of tree			
7	GV	Inside cave entrance			

Control Kite and Punch

At each control the scout will find an orienteering control kite and attached to it a control punch. They should use the punch to mark the appropriate box on the Control Card appropriate to the clue on the Clue Card.



Lesson 05 – Cub Scouts – The Orienteering Map

Section:

Cub Scouts

Objective:

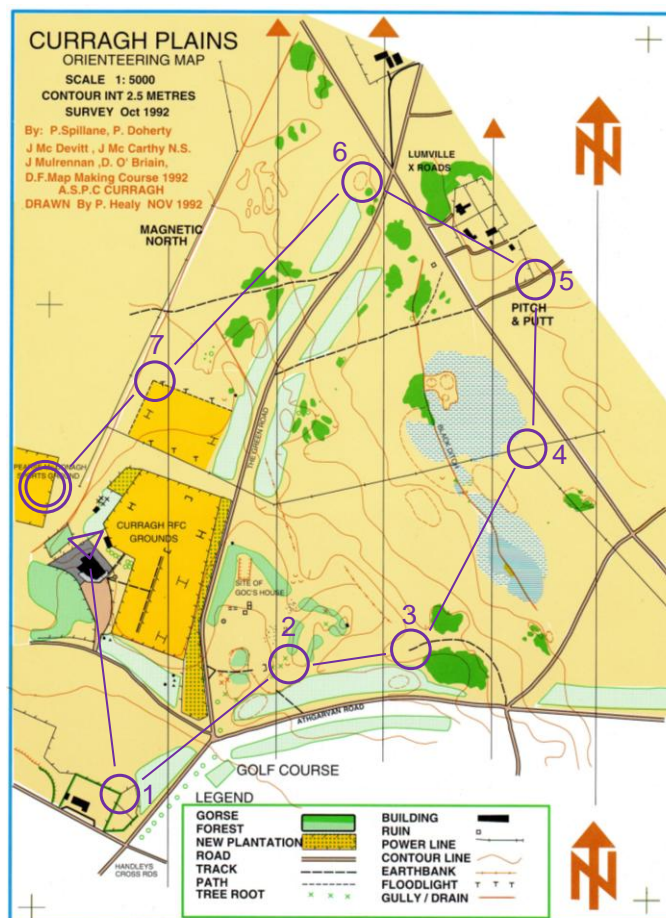
To teach the Cub Scout about the Orienteering Map

- road
- forest road
- track
- large footpath
- small footpath
- ride
- wall
- fence
- uncrossable fence
- ruined wall
- ruined fence
- building
- rocky knoll
- impassable cliff
- small cliff
- boulder:tree root
- boulder field
- lake
- pond
- stream
- ditch
- marsh
- seasonal marsh
- source
- contour
- index contour
- form line
- knoll
- depression
- pit
- steep slope
- earthbank
- gully
- felled area rough open
- open land
- semi open land
- runnable forest
- vegetation: slow run
- vegetation: walk
- vegetation: impenetrable
- brambles

Orienteering maps are of a much greater scale than ordnance survey maps (typically between 1:5000 and 1:15000) the symbols are more numerous and of more significance. The legend to the left gives some of the more common symbols but it is certainly not the complete picture.

We can see from the map below that a course is marked. The start is indicated by a purple or red triangle, the controls by circles and the finish by two circles.

Give out to the scouts a number of old orienteering maps and ask them to pick out the symbols to the left.



Orienteering Mapping, Control and Clue Card exercise

Print for each Cub Scout a copy of the map in Annex D and the Control Card in Annex E. Give each a red pen.

Ask each Cub Scout to transcribe the course marked on the map on the previous page down on their map.

Ask each Cub Scout to make out a clue card with the information they can see at each control on the map. i.e. Control 4, Power line junction, Control 5, Fence, road junction etc...



Orienteering for Scouts

Scouts should be able to complete a course as described for Cub Scouts before starting this training programme. It would be expected that Scouts would participate in a full orienteering course much as would be laid out at an event organised by an orienteering club.



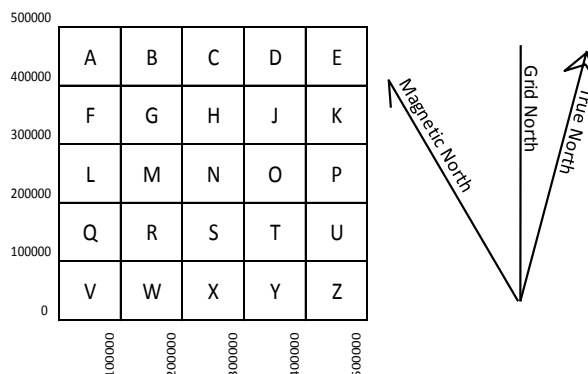
Lesson 06 – Scouts – Map References

Section:
Scouts

Objective:
To teach the scout about references on a map.

Introduction

The first thing you will notice when you look at any Ordnance Survey map is the grid lines that are superimposed over the map itself. These are formed from a grid superimposed on the whole island of Ireland which is broken into 25 100x100 Km grid areas each identified with a letter ('i' is missing so it cannot be confused with '1').



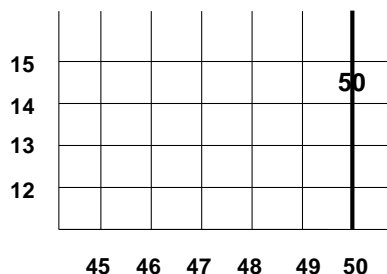
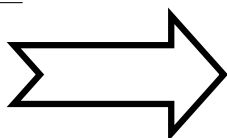
The lines you see on the Ordnance Survey map are further subdivisions of these grid squares.

Northings

15 _____
14 _____
13 _____
12 _____

Eastings

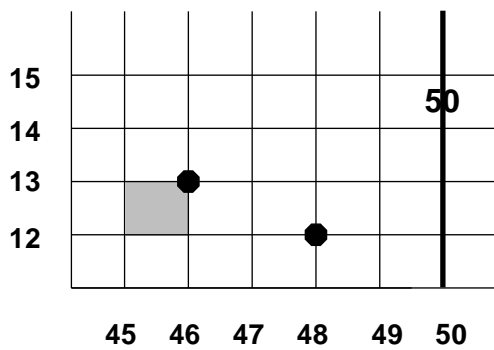
_____ | _____ | _____ | _____
45 45 46 47



The grid lines running from the top to the bottom of the map are considered to be running in series across the map so are called **Eastings**.

The lines running across the map are considered to be running in series from south to north and are called **Northings**.

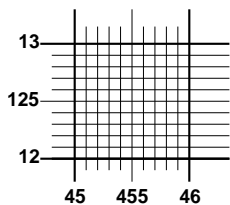
Grid Reference



A Grid Reference is a method of using the national grid to refer exactly to a point on the map. This is given as three parts.

<Grid letter><Easting><Northing> S 23 45

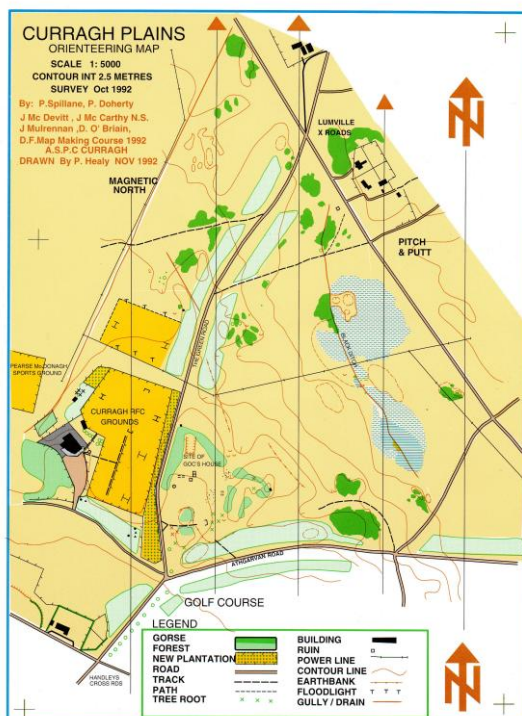
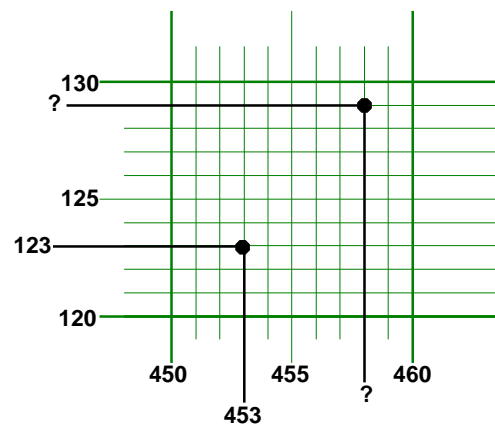
If you are using a large scale map like 1:25,000 or 50,000 it is customary to drop the grid letter as it is impossible to have to eastings or northings that are the same from different grid squares.



In the diagram above therefore we have (46 13) and (48 12). This is called a four figure reference and it is accurate to within 1 Km. To increase accuracy we subdivide each square again, we can see on the left the subdivision of the grey coloured grid above.

Enlarging this subdivision we can see that it is now possible to get more accurate grid references, in fact we can now get six figure references. In the example we can see (453 123).

What is the grid reference indicated by the question mark ?



For orienteering we do not need to refer to points on the map with grid references. We also do not need northing lines, in fact we do not need eastings either but we do need lines pointing north to take bearings.

For this reason on orienteering maps we get a set of lines pointing up the map, these point in the direction of magnetic north. We will see more about this in the next lesson.

Grid Reference exercise in the den

Taking the map in annex C and have each scout work out the six figure grid reference for the base of each scout emblem on the map.



Lesson 07 – Scouts – Contours and Map Symbols

Section:

Scouts

Objective:

To teach the scout the parts of a map and in particular the orienteering map.

Introduction

All maps have a legend and in some ways this is similar from map to map. We will first discuss this for ordnance survey maps and then look at the differences for orienteering maps.

Ionad pairceála Parking Parkplatz	Láithreán picnicí Picnic site Picknickplatz	Ionad dearchta Viewpoint Aussichtspunkt	Mótarbhealach Motorway (Junction number) Autoroute (Numero de l'échangeur) Autobahn (Nummer der Anschlussstelle)	Bóthar Réigiúnach Regional Road Route Régionale Landstraße
Tearmann Dúra Nature Reserve Réserve naturelle Naturschutzgebiet	Telefón Poiblí Public Telephone Cabine Téléphonique Telefonzelle	Láithreán campála Camping site Terrain de camping Campingplatz	Bóthar príomha náisiúnta National Primary Road Route nationale principale Nationalstraße erster Ordnung	Bóthar don tríú grád Third Class Road Route de troisième classe Straße dritter Ordnung
An Taisce National Trust Société pour la conservation des sites et des monuments Bauten oder Gebiete unter Denkmalschutz	Láithreán carbhán (idirthuais) Caravan site (transit) Terrain de caravanning Campingplatz für Wohnwagen	Brú saoire Neamhspleách Independent Holiday Hostel Auberge de vacances Internationale Unterkunstmöglichkeit	Bóthar tánaisteach náisiúnta National Secondary Road Route nationale secondaire Nationalstraße zweiter Ordnung	Carrbhealach dúbailte Dual Carriageway Route à quatre voies Zweispurige Schnellstraße
Brú de chuid An Óige Youth Hostel (An Óige) Auberge de Jeunesse (An Óige) Jugendherberge (An Óige)	Ionad eolais turasóireachta (ar oscailt ar feadh na bliana) Tourist Information (regular opening) Information Touristique (ouverture régulière) Touristeninformation (regelmäßig geöffnet)	Ionad eolais turasóireachta (ar oscailt le limn an tséasúir) Tourist Information centre (restricted opening) Information Touristique (ouverture limitée) Touristeninformation (beschränkte Öffnungszeiten)	Bóthar príomha / tánaisteach náisiúnta beartaithe Proposed Nat. Primary / Secondary Road Route nationale principale / secondaire projetée Geplante Nationalstraße erster / zweiter Ordnung	Bealach Track Sentier Feldweg

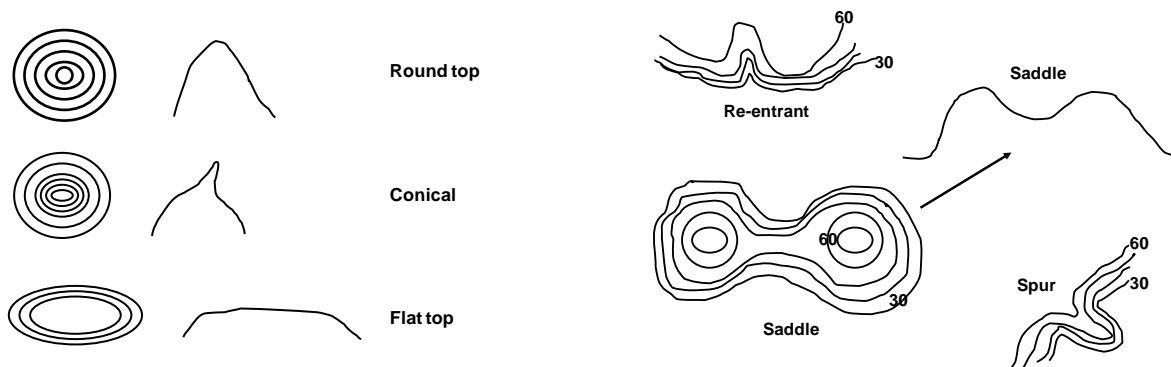
Here we can see some of the symbols above, these are described in detail along the map edge and are pretty common from map type to map type.

Contour lines

Along most maps you have typically brown lines which join points of equal elevation (height) and are called contour lines. By using such lines with a constant elevation interval it is possible to show valleys and hills, and the steepness of slopes.



In the diagrams we can see how the series of contours give away the shape of a feature.



Map feature exercise in the den

Taking the map in annex C and have each scout work indicate one of each of the following:

Post Office	Hill
Cross Road	Saddle
Church	Concave slope
County boundary	Convex slope
Picnic area	Sharp drop in ground

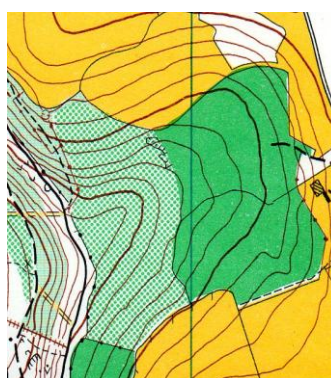


Orienteering Map legend

	road
	forest road
	track
	large footpath
	small footpath
	ride
	wall
	fence
	uncrossable fence
	ruined wall
	ruined fence
	building
	rocky knoll
	impassable cliff
	small cliff
	boulder: tree root
	boulder field
	lake
	pond
	stream
	ditch
	marsh
	seasonal marsh
	source
	contour
	index contour
	form line
	knoll
	depression
	pit
	steep slope
	earthbank
	gully
	felled area rough open
	open land
	semi open land
	runnable forest
	vegetation: slow run
	vegetation: walk
	vegetation: impenetrable
	brambles

As orienteering maps are of a much greater scale than ordnance survey maps (typically between 1:5,000 and 1:15,000) the symbols are more numerous and of more significance. The legend to the left gives some of the more common symbols but it is certainly not the complete picture.

To keep maps simple they are limited to very few colours, Yellow, Green, Blue, Brown, Black and White are the only colours you will find on the map.



Like ordnance survey, orienteering maps make extensive use of contours, and again like the ordnance survey these are brown.

In the example to the left we can clearly see a spur with mixed vegetation flowing from left to right.

For orienteering maps the typical contour interval is 5M, this compares to a 10M interval on most ordnance survey maps.

Orienteering feature exercise in the den

Taking the orienteering map in annex D and have each scout work indicate one of each of the following:

Ruin	Building
Depression	Track
Earth bank	Boulder



Lesson 08 – Scouts – Compass Work

Section:

Scouts

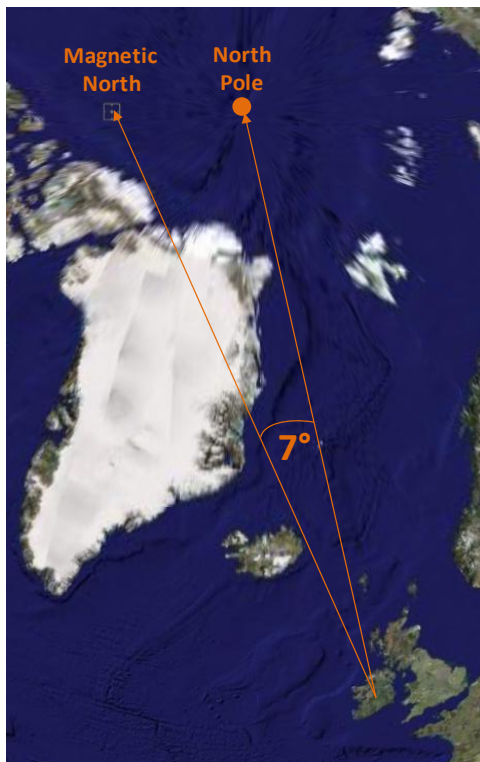
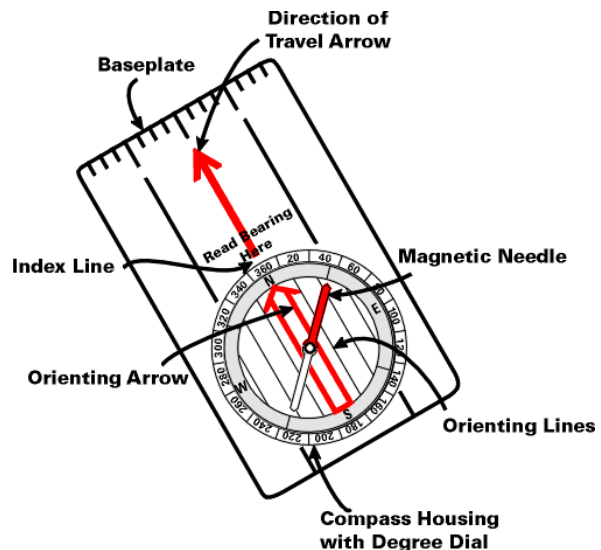
Objective:

To teach the scout how to use a compass so that he/she will be able to use it as an aid to navigation.

Introduction

The diagram to the right shows the parts of the compass. Each scout should be familiar with these and their function.

Basically the red end of the red and white needle in the centre of the dial is pointing to the magnetic field located roughly in the area of Ellesmere Island in northern Canada. This is quite near the north pole but not quite, the difference in angle between the two is called magnetic declination which is a changing figure as magnetic north moves about. Currently for Ireland it is approximately 7°.



Technically there is another north called grid north. Grid north comes from the national grid which is a grid of 5x5 = 25 100 Km squares over Ireland. Obviously the north pointing edges are parallel and therefore cannot all point directly to true north but the difference is so slight we can (up to about 1°) take it that True and Grid north's are approximately equal.

Note: The grid lines on an orienteering map are actually pointing to magnetic north so no addition or subtraction is required in that sport.

Taking a compass bearing

To determine the magnetic bearing:



- Point the direction-of-travel arrow at the distant feature.
- Keeping the compass level rotate the compass housing until the orienting arrow and the magnetic needle are in line.
- Read off the magnetic bearing to the feature on the compass ring at the direction-of-travel indicator.

Finding the feature on the map



To find the feature on the map, you simply need to know where you are on the map and:

- Convert the magnetic bearing received from the compass to a map bearing (which uses grid north instead of magnetic north) by subtracting the magnetic declination (7°) (CMS, Compass to Map Subtract).
- Place the back edge of the compass at the place where you (indicated by the red dot) are and rotate the map until the orienting arrow is parallel to the eastings on the map.
- Follow a line along the edge of the compass until you see the feature on the map (indicated by the blue dot).

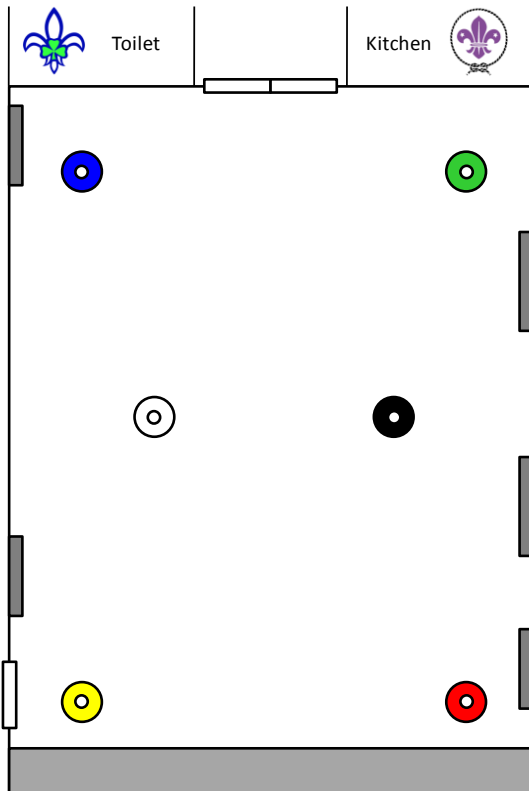
Note: The yellow D in the photo indicates magnetic declination.

Taking a bearing from map to ground

Obviously the opposite is also true. If you take a bearing on the map by placing the compass edge where you are and the forward edge where you want to get to, align the orienting arrow with the eastings pointing north. Read of the bearing and add the magnetic declination (YMCA – Your Map to Compass you Add) you can now rotate the level compass until the orienting arrow and the red needle are in line and the direction-of-travel arrow is pointing in the direction you wish to go.



Bearing exercise in the den



- Compare the results of each scout to see who has grasped the concept and who needs further work.
- Give each scout a fresh chart and ask them to convert each bearing to a map or grid bearing.

- In the scout den layout some cones as shown in the diagram.
- Give each scout a copy of the colour chart below a pen and a compass.
- Place a scout on each cone.
- Ask each scout to mark in the magnetic bearing from their cone to the other five cones along the line of their current colour.
- Once each scout has completed ask them to rotate cones clockwise to the next cone and repeat the exercise until they have filled their chart.

	Blue	Green	White	Black	Yellow	Red
Blue						
Green						
White						
Black						
Yellow						
Red						



Lesson 09 – Scouts – The Orienteering Event

Section:
Scouts

Objective:
To teach the scout about the orienteering event.

Arriving at the event

When you arrive at the event you should be clothed fully (no shorts) and have your compass, clear plastic bag and two safety pins. You will be given a blank map, a control card and a clue card.

	Course	<input type="text"/>	Class	<input type="text"/>	Group	<input type="text"/>	Number	<input type="text"/>		
	Name	<input type="text"/>								
	Start	Minute	<input type="text"/>	<input type="text"/>	Finish	Minute	<input type="text"/>	Second	<input type="text"/>	
	21	22	23	24	25	26	27	28	29	30
	11	12	13	14	15	16	17	18	19	20
	1	2	3	4	5	6	7	8	9	10

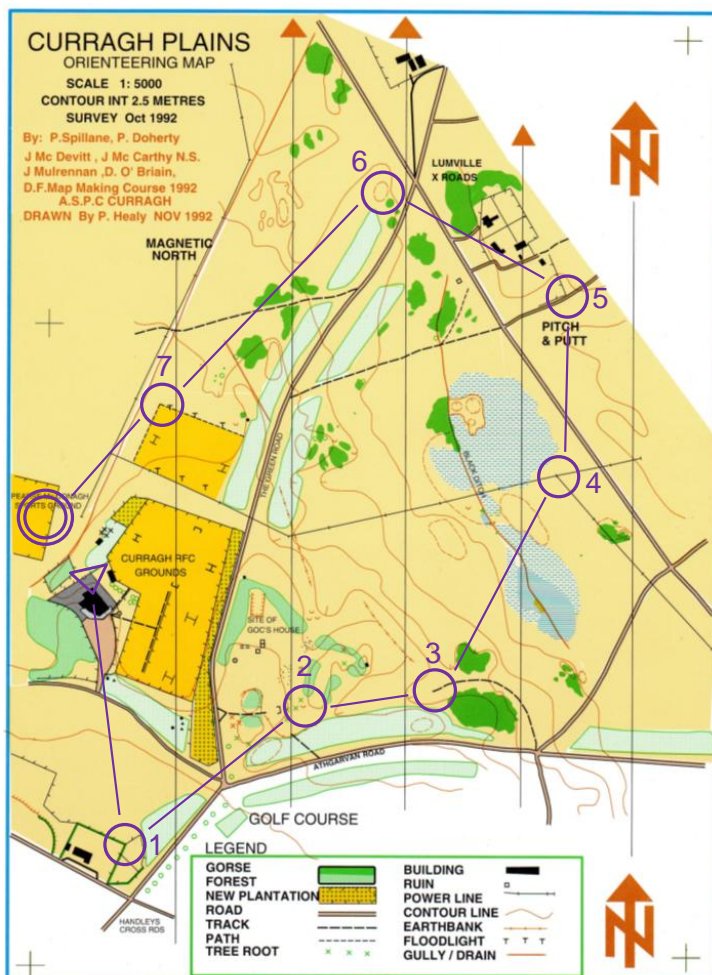
Fill in your name on the card and pin it to your sleeve in such a way that you can easily mark the control boxes with the control punch. Make sure your clue card is handy.

Intermediate		Length	5.2 Km	Climb	156M
1	FG	Base of cliff			
2	CD	In shallow depression			
3	GT	South East side of rootstock			
4	HY	North side of boulder			
5	MN	Track , stream junction			
6	LO	Lower part of tree			
7	GV	Inside cave entrance			







Starting the event

At your time to go the controller will mark your start time on the control card and you will be permitted to approach the Master map area.



You will find a map with the course laid out like that in the diagram. The purple (or red) markings indicate the route.

-  Start
-  Control & number
-  Link line
-  End

Carefully transcribe these details to your map, remember an error could have you confused in the forest for a time so it is worth spending a fraction of the potential lost time correctly marking your map.

During the event

Run around the course in order and at the control points you will find the orienteering marker. Check the clue card to ensure that the code written on the marker is the correct one and then stamp the appropriate box on the control card with the control punch.



Finishing the event

When you reach the end point indicated by the double circles approach the controller to get your control card marked with the exact finish time.



Training orienteering event

If you haven't a local orienteering map you could consider giving it to your Venture Scouts as a project to make one. However a great way to get a training event going quickly is to use Google Earth to print off a small area around your den, estate or park.



Mark out a short course around the area and give clues with the controls.

Using the control pages in Annex A, print them out in colour and place in poly pockets, connect a hole punch with a piece of string to each and stick them up at the control points.

Use the control cards in Annex E and run through your event as described in the lesson.

Orienteering for Venture Scouts

Venture Scouts should be able to complete a course as described for Scouts before starting this training programme. Venture Scouts should be able to compete in orienteering competitions. This programme adds an extra element to the Venture scout in terms of orienteering. The ability to make simple orienteering maps which can be used by the younger sections.



Lesson 10 – Venture Scouts – Map making

Introduction

Orienteering maps are drafted to the mapping standards developed by the International Orienteering Federation. Mapping standards, such as scale, symbols, colour, and level of detail, help ensure a consistent Orienteering experience around the world.

The general steps are:

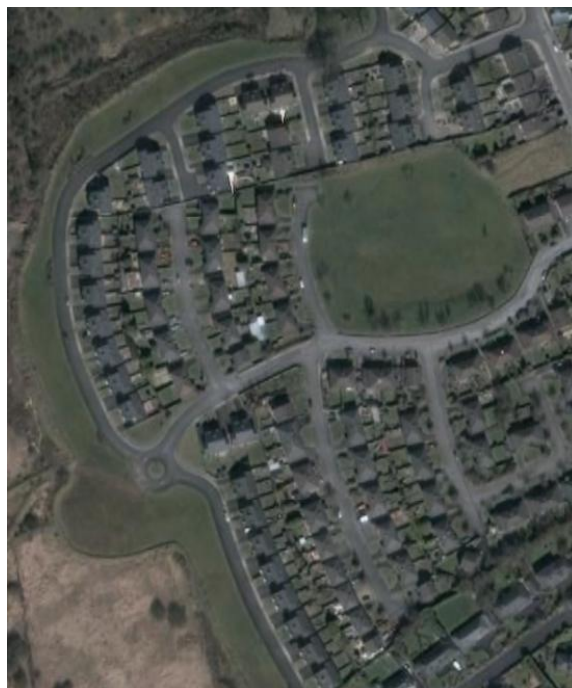
1. Select a suitable area
2. Obtain permission to use the area
3. Prepare a base map
4. Select the map scale
5. Do the field work
6. Draft the map
7. Print the map
8. Archive the map

Base Map

Assuming that you have selected an area and have obtained permission to use the area then we must prepare a base map. This is some form of map to use as a foundation or pattern. Your base map should be accurate enough to provide exact locations of large point features, such as roads, rivers, lakes, and major terrain features, so you can accurately place the details you collect during the field checking process.

Good sources of base maps are:

- Old orienteering map of the area
- Google Earth
- Ordnance Survey maps
- 6" County planning maps



Scale

Orienteering maps are typically 1:10,000 or 1:15,000, however other scales may be used for special projects like estates or parks, 1:5,000 is quite common. Whatever scale you choose, you'll need to convert the maps you've collected to that scale. A good program for manipulating image files is IRFANVIEW, <http://www.irfanview.com>.

Global Positioning System

GPS are a good tool for confirming positions and distances between them, though they are by no means essential.

OCAD Software

OCAD9 software is available in demo form free of charge at <http://www.ocad.com> this software will allow the creation of a small scale mapping project.

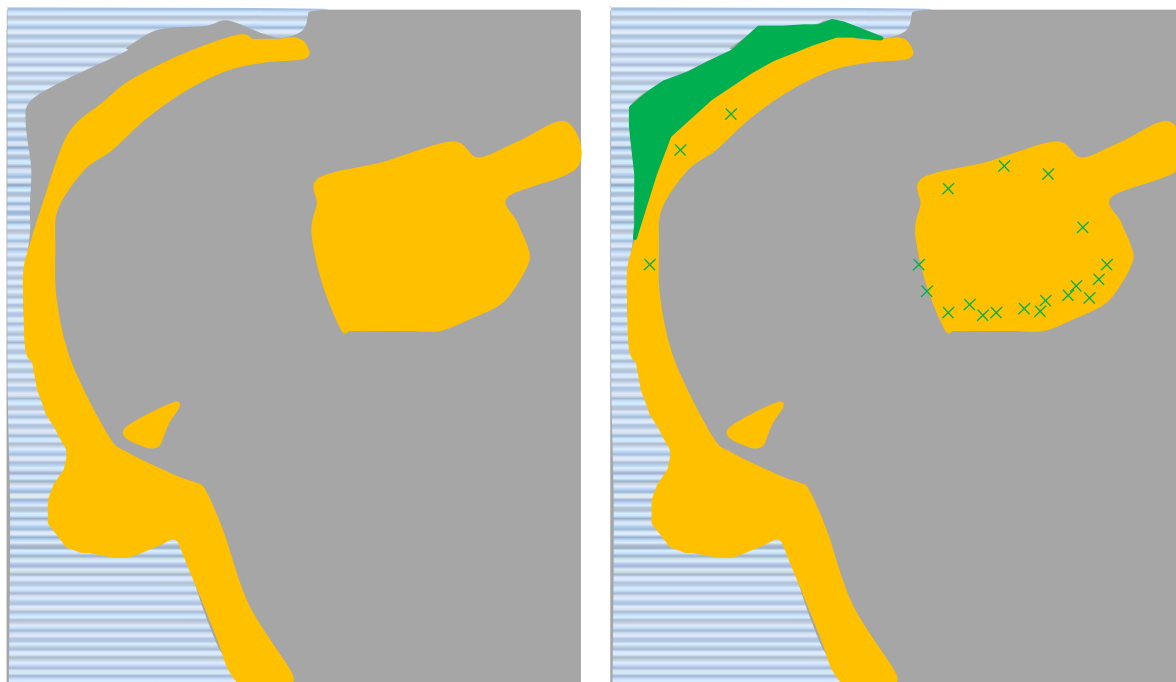
Planning the map

Select the predominant colour. In our case we will mark the private houses in grey so we need to create a grey layer. The next area I decided to add is the swamp water to the left edge of the map.

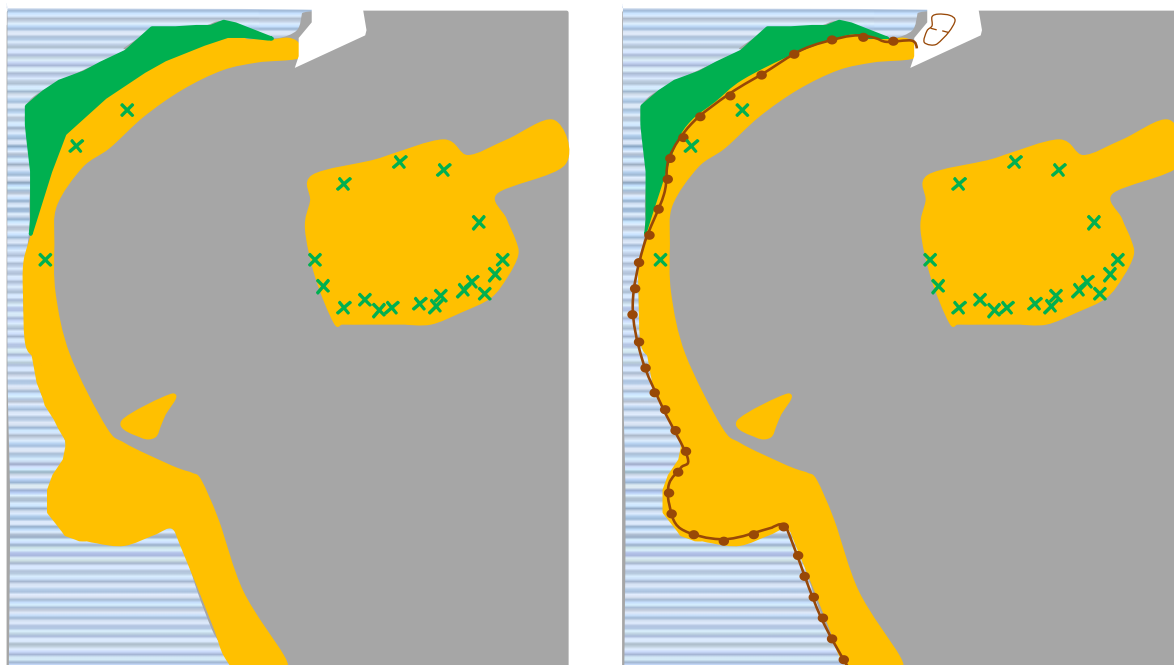


Orienteering

Now the yellow open land areas are added as a layer followed by the green field and vegetation.



In the top centre we see the addition of runnable wood. We also add the contour to mark the depression in the wooded area plus an earthbank along the edge of the estate.



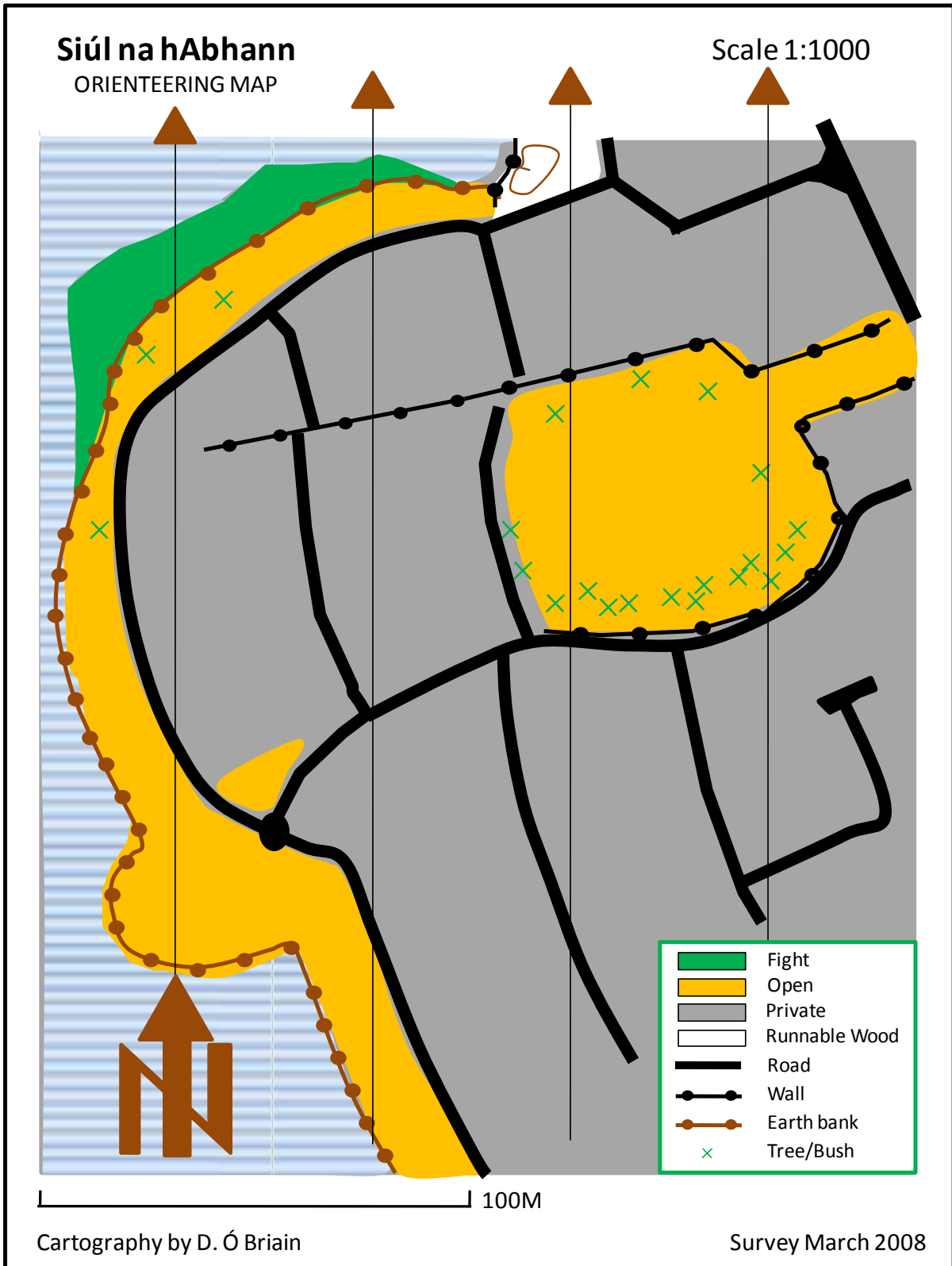


The final colour to be added is black to indicate tarred roads and walls. This is the map complete.

On the next page you will find the completed map with legend and other edge detail.

Map-making exercise

Using the area around you Scout Den make a map that can be used by the other sections in your group.



Orienteering for Rover Scouts

Rover Scouts should be able to complete a course as described for Venture Scouts before starting this training programme. Rover Scouts should be able to compete in advanced level orienteering competitions. This programme adds the ability to use symbol based clue cards.



Lesson 11 – Rover Scouts – Clue Symbols

Introduction

Although clues are always written out for beginners' courses, clues for advanced courses are given as symbols in a table format. The system is quite simple to master and is more compact and specific than a written description.

Advanced		Length		5.2 Km	Climb		156M
1	FG				3		
2	CD						
3	GT				2.5		
4	HY				1.5		
5	MN						
6	LO						
7	GV						

----- 400m ----->

This example shown here begins with a course designation of Advanced. This is followed by the course length and the climb in metres along an ideal (though seldom possible) route. This is followed by lines describing each control with a final line describing the approach to the finish from the final control.

A	B	C	D	E	F	G	H
1	FG				3		

Each control row is split into a number of columns which function as follows:

Column	Description
A	Control Number
B	Control Code
C	Which of several features (upper one)
D	The feature (Cliff)
E	Details about the feature appearance
F	Size (3 M high)
G	Location of control kite (at the foot)
H	Other information

Clue card exercise

Using table of icons on the next few pages, put together an imaginary control card. Swap with another Venture Scout and see do they get the same result.



Column 'C' - Which feature ?



Northern



South eastern



Lower



Upper



Between



Middle

Column 'D' - The feature itself



Earthbank



Re-entrant



Spur



Quarry



Erosion gully



Rib



Earthwall/Dam



Dry ditch



Small knoll



Terrace



Hill or knoll



Saddle



Depression



Boulder



Waterhole



Small depression



Boulder field



Stream



Pit



Boulder cluster



Wet ditch



Cliff



Stony ground



Marsh



Bare rock



Lake



Small marsh



Cave opening



Pond



Firm ground in marsh



Well



Spring



Open land



Forest corner



Clearing



Rough open land



Thicket



Logged area



Vegetation boundary

Column 'D' cont.

	Tree cluster		Road		Trail
	Tree cut		Fence		Wall
	Bridge		Building		Ruin
	Hunters stand		Tower		Feed rack
	Rock pillar		Single tree		Root stock
	Trig. marker		Rock pile		Charcoal burning platform
	Anthill		Broken ground		Special feature
	Special feature	Note: Special features are defined by the organiser			

Column 'E' - Details of feature

	Shallow		Deep		Overgrown
	Open		Rocky		Marshy
	Sandy		Evergreen		Deciduous
	End western		Bend		Y junction
	Crossing				

Column 'G' - Location of Marker

	Northern side		Southeast edge		West corner (inside)
	East corner (outside)		Northern tip		Eastern part
	Upper part		Lower part		On the top
	Southern foot		At the foot		

Column 'H' - Other information

	Drinks		Radio control		Manned control
	First aid				

Last control to finish

	400m		400m marked route to finish
	400m		400m marked tunnel to finish
	400m		No markings to the finish 400m



Orienteering

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