Scout Orienteering
Scouting Ireland, 2010
# Orienteering

## Table of Contents

Introduction .................................................................................................................................................. 5  
Equipment Required for Training Programme ......................................................................................... 6  
Equipment Required for Event ................................................................................................................... 7  
Timetable for programme ........................................................................................................................... 8  
Orienteering for Beaver Scouts .................................................................................................................. 9  
Lesson 01 – Beaver Scouts – String Trail Orienteering ............................................................................ 10  
Lesson 02 – Beaver Scouts – Tracking Signs ............................................................................................... 12  
Orienteering for Cub Scouts ...................................................................................................................... 13  
Lesson 03 – Cub Scouts – Orient the map .................................................................................................... 14  
Lesson 04 – Cub Scouts – The Orienteering Equipment .......................................................................... 18  
Lesson 05 – Cub Scouts – The Orienteering Map ...................................................................................... 20  
Orienteering for Scouts ............................................................................................................................ 22  
Lesson 06 – Scouts – Map References ........................................................................................................ 23  
Lesson 07 – Scouts – Contours and Map Symbols .................................................................................... 25  
Lesson 08 – Scouts – Compass Work ......................................................................................................... 28  
Lesson 09 – Scouts – The Orienteering Event .......................................................................................... 31  
Orienteering for Venture Scouts ................................................................................................................ 34  
Lesson 10 – Venture Scouts – Map making ............................................................................................... 35  
Orienteering for Rover Scouts .................................................................................................................. 40  
Lesson 11 – Rover Scouts – Clue Symbols ................................................................................................. 41
Orienteering

This page is intentionally blank
Orienteering

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 Silva type compasses.
5) 10 x Paper hole punches.
6) 10 x Multicoloured sports cones.
Orienteering

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
Orienteering

Timetable for programme

<table>
<thead>
<tr>
<th>Scout Group Timetable</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson 01 – String Trail Orienteering</td>
<td>Beaver Scouts</td>
</tr>
<tr>
<td>Lesson 02 – Tracking Signs</td>
<td>Beaver Scouts</td>
</tr>
<tr>
<td>Lesson 03 – Orient the map</td>
<td>Cub Scouts</td>
</tr>
<tr>
<td>Lesson 04 – The Orienteering Equipment</td>
<td>Cub Scouts</td>
</tr>
<tr>
<td>Lesson 05 – The Orienteering Map</td>
<td>Cub Scouts</td>
</tr>
<tr>
<td>Lesson 06 – Map References</td>
<td>Scouts</td>
</tr>
<tr>
<td>Lesson 07 – Contours and Map Symbols</td>
<td>Scouts</td>
</tr>
<tr>
<td>Lesson 08 – Compass Work</td>
<td>Scouts</td>
</tr>
<tr>
<td>Lesson 09 – The Orienteering Event</td>
<td>Scouts</td>
</tr>
<tr>
<td>Lesson 10 – Map making</td>
<td>Venture Scouts</td>
</tr>
<tr>
<td>Lesson 11 – Clue Symbols</td>
<td>Rover Scouts</td>
</tr>
</tbody>
</table>

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-orienteering 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.
Orienteering

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

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 less 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 to 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.
Orienteering

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.
Orienteering

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.
Orienteering

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.

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?.

<table>
<thead>
<tr>
<th>Intermediate</th>
<th>Length</th>
<th>Climb</th>
<th>156M</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FG</td>
<td>Base of cliff</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CD</td>
<td>In shallow depression</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>GT</td>
<td>South East side of rootstock</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>HY</td>
<td>North side of boulder</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>MN</td>
<td>Track , stream junction</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>LO</td>
<td>Lower part of tree</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>GV</td>
<td>Inside cave entrance</td>
<td></td>
</tr>
</tbody>
</table>

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.
Orienteering Lesson 05 – Cub Scouts – The Orienteering Map

Section: Cub Scouts

Objective: To teach the Cub Scout about the Orienteering Map

Orienteering maps are of a much greater scale than ordinance 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

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.
Orienteering

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 Kilometer 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.

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 Northing.
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.

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.
Orienteering

**Map feature exercise in the den**
Taking the map in annex C and have each scout work indicate one of each of the following:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Office</td>
<td>Hill</td>
</tr>
<tr>
<td>Cross Road</td>
<td>Saddle</td>
</tr>
<tr>
<td>Church</td>
<td>Concave slope</td>
</tr>
<tr>
<td>County boundary</td>
<td>Convex slope</td>
</tr>
<tr>
<td>Picnic area</td>
<td>Sharp drop in ground</td>
</tr>
</tbody>
</table>
Orienteering

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.
Orienteering

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.
Orienteering

Bearing exercise in the den

- 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.

- 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.
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.

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.

<table>
<thead>
<tr>
<th>Intermediate</th>
<th>Length</th>
<th>5.2 Km</th>
<th>Climb</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 FG</td>
<td>Base of cliff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 CD</td>
<td>In shallow depression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 GT</td>
<td>South East side of rootstock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 HY</td>
<td>North side of boulder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 MN</td>
<td>Track, stream junction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 LO</td>
<td>Lower part of tree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 GV</td>
<td>Inside cave entrance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Orienteering

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.
Orienteering

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

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.
Orienteering

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
Orienteering

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, thought 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 fight 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.
Orienteering

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
Orienteering

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.

<table>
<thead>
<tr>
<th>Advanced</th>
<th>Length</th>
<th>Climb</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 FG</td>
<td>5.2 Km</td>
<td>3</td>
</tr>
<tr>
<td>2 CD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 GT</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>4 HY</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>5 MN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 LO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 GV</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

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

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

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?

<table>
<thead>
<tr>
<th>Northern</th>
<th>South eastern</th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper</td>
<td>Between</td>
<td>Middle</td>
</tr>
</tbody>
</table>

### Column ‘D’ - The feature itself

<table>
<thead>
<tr>
<th>Earthbank</th>
<th>Re-entrant</th>
<th>Spur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarry</td>
<td>Erosion gully</td>
<td>Rib</td>
</tr>
<tr>
<td>Earthwall/Dam</td>
<td>Dry ditch</td>
<td>Small knoll</td>
</tr>
<tr>
<td>Terrace</td>
<td>Hill or knoll</td>
<td>Saddle</td>
</tr>
<tr>
<td>Depression</td>
<td>Boulder</td>
<td>Waterhole</td>
</tr>
<tr>
<td>Small depression</td>
<td>Boulder field</td>
<td>Stream</td>
</tr>
<tr>
<td>Pit</td>
<td>Boulder cluster</td>
<td>Wet ditch</td>
</tr>
<tr>
<td>Cliff</td>
<td>Stony ground</td>
<td>Marsh</td>
</tr>
<tr>
<td>Bare rock</td>
<td>Lake</td>
<td>Small marsh</td>
</tr>
<tr>
<td>Cave opening</td>
<td>Pond</td>
<td>Firm ground in marsh</td>
</tr>
<tr>
<td>Well</td>
<td>Spring</td>
<td>Open land</td>
</tr>
<tr>
<td>Forest corner</td>
<td>Clearing</td>
<td>Rough open land</td>
</tr>
<tr>
<td>Thicket</td>
<td>Logged area</td>
<td>Vegetation boundary</td>
</tr>
</tbody>
</table>
## Column ‘D’ cont.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🌲</td>
<td>Tree cluster</td>
</tr>
<tr>
<td>🔋</td>
<td>Tree cut</td>
</tr>
<tr>
<td>🛠️</td>
<td>Bridge</td>
</tr>
<tr>
<td>🎯</td>
<td>Hunters stand</td>
</tr>
<tr>
<td>🪜</td>
<td>Rock pillar</td>
</tr>
<tr>
<td>🔒</td>
<td>Trig. marker</td>
</tr>
<tr>
<td>🐝</td>
<td>Anthill</td>
</tr>
<tr>
<td>🔍</td>
<td>Special feature</td>
</tr>
<tr>
<td>🚶️</td>
<td>Road</td>
</tr>
<tr>
<td>🏙️</td>
<td>Fence</td>
</tr>
<tr>
<td>🏘️</td>
<td>Building</td>
</tr>
<tr>
<td>🔥</td>
<td>Tower</td>
</tr>
<tr>
<td>🔸</td>
<td>Feed rack</td>
</tr>
<tr>
<td>🔧</td>
<td>Rock pile</td>
</tr>
<tr>
<td>🗄️</td>
<td>Root stock</td>
</tr>
<tr>
<td>🎆</td>
<td>Charcoal burning platform</td>
</tr>
<tr>
<td>🕿️</td>
<td>Broken ground</td>
</tr>
<tr>
<td>🛋️</td>
<td>Special feature</td>
</tr>
</tbody>
</table>

Note: Special features are defined by the organiser

## Column ‘E’ - Details of feature

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🕁️</td>
<td>Shallow</td>
</tr>
<tr>
<td>🔜</td>
<td>Deep</td>
</tr>
<tr>
<td>🌿</td>
<td>Overgrown</td>
</tr>
<tr>
<td>🔥</td>
<td>Open</td>
</tr>
<tr>
<td>🪨</td>
<td>Rocky</td>
</tr>
<tr>
<td>🌾</td>
<td>Marshy</td>
</tr>
<tr>
<td>🌳</td>
<td>Sandy</td>
</tr>
<tr>
<td>🌿</td>
<td>Evergreen</td>
</tr>
<tr>
<td>🌿</td>
<td>Deciduous</td>
</tr>
<tr>
<td>🌿</td>
<td>End western</td>
</tr>
<tr>
<td>🌿</td>
<td>Bend</td>
</tr>
<tr>
<td>🌶️</td>
<td>Y junction</td>
</tr>
<tr>
<td>🔴</td>
<td>Crossing</td>
</tr>
</tbody>
</table>
Orienteering

**Column ‘G’ - Location of Marker**

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

**Column ‘H’ - Other information**

- Drinks
- Radio control
- Manned control
- First aid

**Last control to finish**

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