A GUIDE TO THE NAVIGATOR BADGE FOR SCOUT LEADERS

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In today’s world young people undertake a wide variety of journeys. These range from travelling to and from school, visiting relatives, holidays abroad and, of course, Scout nights away! Many things that young people come into contact with have also made long journeys – for example, food, clothing and electronics. Navigation and exploration are exciting and dynamic topics that can take Scouts out of their meeting place and into local communities – coming into contact with new environments via new experiences.

We are all natural explorers; from the moment of birth we begin to navigate our surroundings. First we become familiar with our own environment, we then begin to explore other places and form perceptions beyond our direct experience. Navigation is an essential skill that will help young people to place themselves in the world. Much of the Scout Navigator Badge centres on reading and understanding maps and navigating a variety of routes – using a number of techniques. Knowing how to interpret maps and navigate is a skill that will enhance the confidence and knowledge of Scouts to make journeys safely and further prepare them for the various terrains and hazards.

Navigating effectively allows us to make the most of a particular area and allows us to discover new surroundings. Ordnance Survey® produces a wide range of maps, differing in scales, that can be used for a number of outdoor and adventurous activities.

This resource is a practical guide, based on Alternative A, intended to help you work through the Scout Navigator Badge with your Troop and links closely with the resource for young people, created by Ordnance Survey’s MapZone®, www.ordnancesurvey.co.uk/mapzone. There are a number of opportunities throughout this resource when MapZone can be used as material for your Scouts.

**THERE ARE FOUR ASPECTS TO THIS AWARD:**

1. **Using 1:25 000 and 1:50 000 scale Ordnance Survey maps.**
2. **Understanding traffic signs and signals.**
3. **Navigating our roads.**
4. **The practical use of a compass.**

For each aspect, we’ve provided some background knowledge, some things to think about, things to do and things to discuss. You’ll also find some useful contacts listed at the back of this resource. Please think creatively about how you will approach this Activity Badge – it doesn’t need four weeks to complete the four steps. There are a variety of methods that you can use to successfully deliver this award.

Good luck and have fun! Please do get in touch with the Scout Section Office at Gilwell Park.

Email scout@scout.org.uk or phone 0845 300 1818 and let us know how you get on.

Written by:
Peter Oliver and Peter Evans
ORDNANCE SURVEY MAPS

USING 1:25 000 AND 1:50 000 SCALE ORDNANCE SURVEY MAPS:

• Show that they understand the meaning of scale, true, grid and magnetic north and can recognise conventional map symbols.
• Interpret contour lines in terms of shape and steepness of terrain. Know the meaning of topographical features such as valley, col, ridge, spur and so on.
• Show how to set a map with and without a compass. Be able to use and to give six-figure grid references. Demonstrate the use of a Romer to improve accuracy.
• Show how to measure distances on a map and how to estimate timings for a particular route.
• Show how to find north without the aid of a compass, by day or night.
• Demonstrate their awareness of the latest developments in electronic technology such as the Global Positioning System.

This section of the badge expects Scouts to show an in-depth understanding of Ordnance Survey maps, ranging from understanding scale and contour lines to various topographical features. It would be advisable to obtain several Ordnance Survey maps (the Explorer™ range is ideal) of your local area or the area where you regularly camp with the Scouts, as this will allow them to appreciate how physical landmarks are represented and also will allow them to visualise the landscape shown on the map itself.

Comparing scales

Before the Scouts can begin to use an Ordnance Survey map, they need to understand its scale. All maps are drawn to scale, which means there is a direct relationship between distances measured on the ground and distances measured on the maps, usually shown by the scale bar on the map. When reading a map, the first thing you should do is establish the scale; it is normally expressed as a ratio, such as 1:25 000. This means that 1 unit of measurement on the map is equal to 25 000 of the same units of measurement on the ground. At right is a table comparing the two main scales that would be used by Scouts for walking and so on.

1:25 000 SCALE

Maps at a scale of 1:25 000 are sometimes called medium-scale maps.

One centimetre on a 1:25 000 scale map is equal to 25 000 centimetres (or 250 metres – ¼ kilometre) on the ground; four centimetres on the map therefore represents one kilometre on the ground.

Therefore, two and a half inches on the map is equal to one mile on the ground.

At 1:25 000 scale, major buildings or landmarks are clearly visible; other features such as field boundaries and walls also appear. At this scale no road names or smaller details are shown.

Maps at 1:25 000 scale are used by walkers and other outdoor enthusiasts but they also contain enough detail for local area planning purposes.

1:50 000 SCALE

Maps at a scale of 1:50 000 are small-scale maps.

One centimetre on a 1:50 000 scale map is equal to 50 000 centimetres (or 500 metres – ½ kilometre) on the ground; four centimetres on the map therefore represents two kilometres on the ground (2 cm = 1 km).

Therefore, one and a quarter inches on the map is equal to one mile on the ground.

At 1:50 000 scale, major buildings may be shown in some detail, if they are large enough. Individual buildings are no longer shown, they become blocked together. Field boundaries will no longer appear.

Maps at 1:50 000 scale are used for general-purpose use, for example, business planning, motoring, walking and cycling.

1. Using 1:25 000 and 1:50 000 scale Ordnance Survey maps.
Help get your Scouts to understand scale by getting them to draw two maps to different scales of your meeting place (as any larger map would prove to be difficult). Give them the dimensions of the hall/building and ask them to include some of the internal features, for example, toilets, stages, side rooms and so on.

Obtain two Ordnance Survey maps of the same geographical location but to different scales. This will allow the Scouts to appreciate the difference between the two. An idea would be to get the Scouts to construct a table discussing the advantages and disadvantages and situations where they could use each map.

1. Using 1:25 000 and 1:50 000 scale Ordnance Survey maps.
WHAT IS NORTH?

There are actually three norths

1. True north

This is the celestial north, which is obtained from readings taken from the sun or the stars. This can be found by knowing how to identify constellations in the sky or by using the shadows caused by the sun, and their movement throughout the day to obtain a northern direction. Along with this, for a very rough estimate or a northern direction we can simply be aware that the sun itself rises in the east and sets in the west.

Using your watch to find north from the position of the sun

If you have a wristwatch where the hands go round the face, you can use it to locate north. The sun is always due south at ‘true’ midday in the northern hemisphere. By ‘true’ midday we mean Greenwich Mean Time (GMT), so if you are in British Summer Time, you will need to take an hour off the actual time.

Point the hour hand towards the sun. If it is after 6.00 am or before 6.00 pm, south lies midway in the smaller angle between the hour hand pointing at the sun and 12. If it is before 6.00 am or after 6.00 pm, south is found by dissecting the wider angle. It is then an easy matter to locate north.

Many people wear digital watches these days, but if you carefully draw an analog face on a piece of paper, and mark off the position of the hour hand from your digital watch, then the technique is exactly the same as described above.

Shadow Stick method

Drive a (straight) stick into the ground as near vertically as possible and mark the tip of its shadow with a stone or peg.

Wait at least 15 minutes and mark the tip of the new shadow, in a similar way.

The line from the first marker, running through the second, will, in the northern hemisphere, point roughly east. This means that the north-south line is at a right angle to this, with north pointing away from the stick.

It is most accurate towards the middle of the day.

1. Using 1:25 000 and 1:50 000 scale Ordnance Survey maps.
Stars

On a clear night when the stars can be seen clearly, it is possible to identify the Pole Star (Polaris) that appears almost exactly over the north. The Pole Star sits at the end of Ursa Minor (the Little Dipper) and most people locate it by finding The Plough (Ursa Major) and using the end two stars on the blade of The Plough as pointers. The centre of Cassiopeia, the big W, also points towards Polaris.

Other natural indicators

Plants and trees may also be used to give an indication of direction. As we are in the northern hemisphere, our flowers and plants will have more growth in the direction of the sun – so where the majority of the growth is will be a southern direction. Also, if you are aware of the area’s most frequent wind direction, this can be used, as winds blowing from a south-east direction will cause the branches to grow in a north-west direction.

1. Using 1:25 000 and 1:50 000 scale Ordnance Survey maps.
2. Grid north

This is the direction of north shown on maps, from which a map bearing would be taken. Along with this, on most Ordnance Survey maps the grid north is identified in the legend on the map itself. It should also be noted that all Ordnance Survey maps are printed so that north is at the top of the map!

3. Magnetic north

This is the north that your compass needle points to, its position will change slowly over time.

A compass is merely a magnetised needle that is balanced so it can move freely. The magnet aligns itself with the earth’s magnetic field. A pointer attached to the magnet will point the way toward the north magnetic pole or magnetic north.

The compass should be used in conjunction with a map to allow the user to be aware of which direction they are travelling in. The compass has eight main points (shown below) which can be used to give and be aware of what direction you are walking/travelling in.

Activity ideas

- While on a camp encourage your Scouts to find north using the sun during the day and attempt to find the north star on a clear night; most city skies will not allow this due to light pollution.
- Along with this, while on camp, allow the Scouts some time to study the natural environment to see if there are any indicators present as to which way is north.
- To help Scouts understand the points of the compass, mark all 16 points on the floor using bean bags or cones. Identify one as North then challenge each Scout in turn to go to one of the other points by giving them either the compass position, for example NNE or SW, or the appropriate bearings, for example 180 or 135. Continually change the position of North so that Scouts have to rethink the location of all the other points.

1. Using 1:25 000 and 1:50 000 scale Ordnance Survey maps.
When a map is being created it needs to show a lot of information over a large area of land. If all this information were to be written on the map it would be far too cluttered and complicated, so the following symbols have been adopted:

Have your Scouts create their own map and include their own symbols for places of interest; for example, their own home, a fast food restaurant, a local cinema, your Scout meeting place or their school. To help your Scouts understand and become more familiar with map symbols, use the map symbol flashcards downloadable from www.ordnancesurvey.co.uk/education-and-research/teaching-resources/map-symbols.html. Select a number of the more obvious ones and let each Scout take it in turns to mime the symbol, while the rest of the group try to guess what it is.

Examples of symbols on a 1:50 000 scale map

- Information centre
- Viewpoint
- Parking
- Picnic site
- Camp site
- Caravan site
- Youth hostel
- Golf course
- Bus or coach station
- Public telephone

Additional symbols on a 1:25 000 scale map

- Recreation/sports/leisure centre
- Museum
- Castle/fort
- Building of historic interest
- English Heritage
- Walks/trails
- Cycle trail
- Garden/arboretum
- Nature reserve
- Other tourist feature

Contour lines are lines drawn on a map connecting points of equal elevation. If you walk along a contour line you neither gain nor lose elevation. These lines allow us to appreciate three-dimensional features of the land on a two-dimensional map. For example, they allow the user to see the height on hills and so on. The difference between the lines may change but on a 1:25 000 scale map they are usually shown for each five or ten metre level, for example, every time a hill increases by five metres a contour line will appear to represent this. However, it is also important to note that the closer together the contour lines are, the steeper the land. Contour lines that are wide apart show us that the land rises (or falls) gradually.

The diagram shows the link between the shape of a hill and the contours representing it on a map.

Help your Scouts to better understand contour lines by getting them to make a model hill from an image you have created – with the contour lines in place similar to the right section of the diagram above. If you draw the image out and use each contour line to represent a given measurement (such as two centimetres), your Scouts can make the physical representation of the hill using some thick card (or polystyrene tiles), cutting out the relevant land shapes and gluing them on top of each other.

1. Using 1:25 000 and 1:50 000 scale Ordnance Survey maps.
TOPOGRAPHICAL FEATURES

One of the most widely used of all maps is the topographic map. The feature that most distinguishes topographic maps from maps of other types is the use of contour lines (see page 9) to portray the shape and elevation of the land.

Topographic maps render the three-dimensional ups and downs of the terrain on a two-dimensional surface. Topographic maps usually show features that occur naturally or those that are man-made. They can show mountains, valleys, plains, lakes, rivers, and areas of woodland and the like. They can also identify man-made features such as buildings and bridges.

Some common topographical features the Scouts should be aware of are:

- **Ridge** – a range of hills or mountains, or the upper part of such a range; any extended elevation between valleys.
- **Col** – a short ridge connecting two higher elevations or mountains; the pass over such a ridge.
- **Uniform slope** – can be either steep or gentle, with contour lines evenly spaced.
- **Concave slope** – the contour lines are closely spaced at the top and widely spaced at the bottom of the feature.
- **Convex slope** – the contour lines are widely spaced at the top and closely spaced at the bottom of the feature.
- **Pass or saddle** – this is a low point between two areas of higher ground.
- **Spur** – a short continuous sloping line of higher ground.
- **Corrie** – these appear as armchair-shaped gouges out of mountain sides.

1. Using 1:25 000 and 1:50 000 scale Ordnance Survey maps.
You would set a map to ensure that the map is facing north, so that you can align grid north and true north to assist your travelling direction. You will need to undertake the following steps:

- Place the compass on the map.
- Rotate the dial on the compass so that the north marker is aligned with the direction of the vertical grid lines on the map, which usually are created so that the top of the map is north.
- Line up the edge of the compass with a vertical grid line.
- Holding the compass firmly on the map, rotate them together so that the red arrow on the compass pointer aligns itself with the arrow on the bottom of the compass, then line the two arrows up.
- When this is done the map will now be facing north.

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**SETTING A MAP**

1. Using 1:25 000 and 1:50 000 scale Ordnance Survey maps.
MAP REFERENCES

Before you begin to look at map references it is important to be aware that all the numbers going across the face of the map, for example, left to right are called eastings (this is because they are heading eastward), and similarly all the numbers going up the face of the map from bottom to top are called northings (again because they are heading in a northward direction).

There are two main types of map reference:

- 4-figure – for example, 1945, this indicates a square on an Ordnance Survey map.
- 6-figure – for example, 192454, shows a point within a square.

4-figure map references

When giving a 4-figure map reference you should always give the eastings number first and the northings number second, very much like when giving the reading of a graph in school – you must go along the corridor/hallway (horizontal) and then up the stairs (vertical).

For example, the number 2 in the example below is 19 across and 45 up and therefore the 4-figure grid reference is 1945.

The numbers on the map below would have the following 4-figure grid references:

1 = 1845 2 = 1945
3 = 1844 4 = 1944

6-figure map references

Start by working out the basic 4-figure map reference. Then imagine the square is divided up into tenths. Using the example below, the grey box is in the square 1844, although more accurately it is 7 tenths across and 8 tenths up within the grid square 1844 and therefore has the 6-figure map reference 187448.

The shapes on the map below would have the following 6-figure grid references:

= 187448  = 185443

1. Using 1:25 000 and 1:50 000 scale Ordnance Survey maps.
MAP DISTANCES AND TIMING

Length and timing

The average walker takes around sixty minutes for every three to four km, plus around 30 minutes for every 300 m climbed based on Naismith’s rule. This, however, may need to be adapted when considering the speed and ability of the individual parties who are walking. Both the weather and the surface underfoot can add or reduce the time taken to walk across a certain terrain. When creating your timing sheets make sure breaks are incorporated and also take into account other changes, such as light and time of day, as these can also affect speed of movement.

Using technology

Technology has an important part to play in Navigation. No longer do ships’ crews use the stars or walkers have to rely solely on a map and compass to navigate from one point to another.

Technology can be used to create maps and to assist in the navigation of them; one of the major technological developments has been GPS or Global Positioning System, which is a ‘constellation’ of 24 well-spaced satellites that orbit the Earth and make it possible for people with ground receivers to pinpoint their geographic location. The location accuracy is generally better than 10 metres, although rarely it can be significantly worse.

GPS works in the following way:

- 21 GPS satellites and three spare satellites are in orbit at 10 600 miles above the Earth. The satellites are spaced so that from any point on Earth, four satellites will be above the horizon.
- Each satellite broadcasts its changing position and time. (Once a day each satellite checks its own sense of time and position with a ground station and makes any minor correction.)
- On the ground any GPS receiver containing a computer that ‘trilaterates’ its own position through using distances to four or more satellites. The result can usually be shown in either the GPS coordinate system or in the local map grid.
- If the receiver is also equipped with a display screen that shows a map, the position can be shown on the map.
- If you are moving, your receiver may also be able to calculate your speed and direction of travel and give you estimated times of arrival to specified destinations.

This obviously means that if an individual uses a hand-held GPS system they can find their location with ease. However, problems may also occur such as battery or technology failure; also some weather conditions may have an effect on the GPS reading, so a map and compass should always be carried in conjunction with the GPS receiver.

1. Using 1:25 000 and 1:50 000 scale Ordnance Survey maps.
UNDERSTANDING TRAFFIC SIGNS AND SIGNALS

BE FAMILIAR WITH TRAFFIC SIGNS AND SIGNALS AS ILLUSTRATED IN THE HIGHWAY CODE

For this requirement, Scouts need to show an awareness of traffic signals and signs that are used in the United Kingdom. This section offers a basic introduction to The Highway Code, signs and signals. It would be worthwhile obtaining a few copies of The Highway Code, then spend time introducing the relevant sections to your Scouts.

Following this, perhaps organise a ‘Highway Code’ bingo activity? Organise your Scouts into small groups and give them each a different sheet, listing various traffic signs and signals – the first group to get all on their card are the winners – make it fun and lively!

The Highway Code

The Highway Code details the rules that govern the way we use our roads, whether as a pedestrian, cyclist, driver, motorcyclist or as a horse rider! Many of the rules that are detailed on The Highway Code are legal requirements – if we disobey them, we are committing a criminal offence.

If we all had a better understanding of the rules detailed in The Highway Code, we would reduce the risk of being involved in an incident on our roads.

Traffic signs

Traffic signs in The Highway Code are split in to five categories; they are listed below – along with some examples of signs.

**Signs giving orders**

Normally appearing in red circles, they are mostly prohibitive; additional signs beneath normally qualify their message.

- School Crossing Patrol
- Maximum Speed Limit – 40mph
- No Motor Vehicles
- No Cycling

**Warning signs**

Normally appearing in red triangles, they generally warn of risks or hazards that may not otherwise be noticed.

- Crossroads
- Bend to Right
- Roundabout
- Slippery Road
- Zebra Crossing

2. Understanding traffic signs and signals.
Direction signs
Normally appearing in rectangles, on motorways, they are blue; on primary routes they are green and on non-primary routes they are white – all offer directional information to motorists.

Information signs
Normally rectangular, they take a variety of forms offering information to motorists, pedestrians and cyclists.

Road works signs
Taking a variety of shapes and forms, they offer temporary notices linked to current road works.

Signals by authorised persons
Police Officers or Traffic Controllers, normally wearing high visibility clothing, generally issue these signals. The manual signals that can be issued are normally directional and motorists must respond to such signals.

Perhaps you could consider inviting a local Road Safety team to come in and run activities with your Scouts. Such teams often have very well established activities that would help to introduce road traffic signs and signals to your Scouts in a fun and memorable way.

Details can be found on your local authority website or on www.roadsafetygb.org.uk/contacts/
NAVIGATING OUR ROADS

With other Scouts, accompany a motorist on a journey of at least 30 kilometres, taking it in turns to act as navigator to a stated destination. The route should avoid motorways and major roads and if possible should be cross-country, using a variety of roads and lanes. There should be no prior route preparation.

Navigating our roads

The ability to navigate a route that has been planned in advance is an essential skill – and perhaps one that is sometimes overlooked. However, it very often becomes necessary to navigate an unplanned route – or plan an ‘off the cuff’ route as we travel.

This section of the award offers some guidance on how to introduce both methods of navigation to your Scouts.

Navigating a planned route

For your Scouts to plan a route to be taken in a vehicle, you will need to ensure that they have current road maps and or local Ordnance Survey maps. You could set the start point and destination, then ask the Scouts, in groups, to plan a route, but you will need to ensure that there are sufficient routes to allow them to get there in a reasonable time and that their journey will cover around 30 kilometres.

Having planned a route manually using maps and deciding which roads to use, why not introduce an electronic route planner to show the Scouts how technology can be put to good use in these situations? There are a number available on the web, for example www.rac.co.uk/route-planner/, and to purchase as ‘off the shelf’ software products. Your Scouts could compare the route they have planned with the route the electronic planner had defined. Do the routes differ? And if so, how?

Think about asking someone to come in and talk with your Scouts, perhaps from a local planning office or if your knowledge of IT is limited, make contact with someone who has a good understanding of using computers and ask them to demonstrate the use of modern technologies in journey planning.

Now you need to make the journey; this will need careful planning. Who is going to drive, and in what vehicle? Safety must come first – make sure the driver has the appropriate licence and is fully insured.

If in doubt, make contact with the Scout Information Centre on 0845 300 1818. Check that the vehicle is roadworthy and that it has enough seat belts for the participants of the activity. We would suggest that the activity should involve a person driving the vehicle, an adult Leader and up to three Scouts who can take it in turn to lead the navigating, giving them each at least 10 km of the journey to test their route navigation. The Scout should be able to give a running commentary on what is coming ahead.

‘The Green Man pub is round the next bend. Turn left at the pub and follow the B234. There is a water tower on your left. I think you can see the motorway in the valley from here. In 1 km the road goes under grid lines and turns east.’

If you keep swapping between navigators, they will all have to keep track of where they are. Whenever possible, avoid the major roads. Most people can navigate for 30 km on a motorway. The routes your Scouts use should involve driving across country, using minor roads. A word of warning: Some Scouts do get travel sick when trying to read in the back of a vehicle, so don’t make the activity too intense. And don’t drive like you are chasing first place on the Rally!

Use this model to make the journeys with each of your groups – perhaps using more than one car and all undertaking the activity at the same time. If you’re going to do this, why not arrange the activity so that you all reach the same destination? You could then undertake another activity to celebrate the achievements of your Scouts – having successfully planned and navigated their route!

Navigating an unplanned route

The need to navigate an unplanned route is not uncommon – impromptu journeys, diversions and road closures all necessitate the need for planning an ‘off the cuff’ route, normally while travelling.

Asking your Scouts to navigate an unplanned route could be done towards the end of the activity to navigate the planned route – or perhaps the challenge could be to follow an unplanned route back to the start point? Consider the total length of the journey and the time you have available.

3. Navigating our roads.
THE PRACTICAL USE OF A COMPASS

Walk two compass routes of at least 2 kilometres each. One route should have start and end points defined on a map by an adult and the second by the Scout. During these exercises demonstrate an ability to:

a. Convert grid bearings to magnetic bearings, and vice versa.
b. Use back bearings to check the route.
c. Estimate current position using a compass.
d. Walk on a bearing, including ‘deviating from course’, (the four right angles technique to circumvent an obstacle).

The practical use of a compass

Navigating our roads can be quite simple: ‘Take the third road on the left, then the second road on the right and at the roundabout take the first exit’. When we’re faced with open countryside, navigating is made that bit more difficult. The proper use of a compass is an important skill for any navigator. During this activity, there are a number of key aspects that you will need to cover with your Scouts.

Grid and magnetic bearings

A grid bearing can be described as the angle, in a clockwise direction, between grid north and the path of travel that has been chosen between two points. This type of bearing is direction specific – for example, if you were travelling from north to south, your grid bearing would be 180°, and if you were travelling from north-east to south-west, your grid bearing would be 225°.

It is important to remember that there is a difference between grid north that is drawn on a map and used in the example above and magnetic north, which is the north that the needle on a compass would point to. This difference is described as ‘magnetic variation’. A magnetic bearing is the angle, again in a clockwise direction, between magnetic north and the chosen path between two points.

When you’re converting a grid bearing to a magnetic bearing, you must add the magnetic variation, which will be particular to that area and is normally found in the key on the map.

Step by step

- Set a path between two points.
- Place the compass on the map, with the edge of the base plate in alignment with the chosen path – ensuring that the direction of travel arrow is pointing in the direction of your destination point.
- Rotate the compass housing so that the orienting lines are now running in the same direction as the grid lines on the map.
- Read the grid bearing at the index line – this is the angle between grid north and the direction in which you need to travel.
- Add the magnetic variation to the reading you have just taken.
- Take the compass off the map and rotate the entire compass until the north side of the compass needle is pointing in the same direction as the orienting arrow.
- Travel in the direction the direction-of-travel arrow is pointing.

You could introduce grid and magnetic bearings to your Scouts by roll-playing a scenario where you need to navigate from one point to another – perhaps in an emergency situation, when visibility has been significantly reduced.
Back bearings

Every bearing has a back bearing – this is used to provide a return direction to your start point. A back bearing is obtained by deducting or adding 180° from or to your original bearing. For example, if you were travelling on a bearing of 260°, you would need to travel on a bearing of 80° to return to your start point.

Back bearings can be used to verify that a route is correct; if it is, your back bearing will take you straight back to your origin!

Finding a position

You can find your position or any unknown position on a map using cross-bearings; normally by referring to two or three visible landmarks. You would begin by taking the bearings of these landmarks and then calculate their back bearings, making necessary adjustments for any magnetic variation. Paths then need to be drawn on the map, from the landmarks and they will intersect at a common point. Normally, you will find that there will be a slight error, resulting in the intersection forming a small triangle – your position should be taken from the centre of this triangle.

Other useful techniques

There are a number of techniques that your Scouts will need to show an awareness of; perhaps you would be best done introducing these techniques locally, in a park or woodland?

Route selection is obviously an underlying skill that your Scouts will need to be proficient in – taking account of local features and interpreting maps to know which is the most straightforward route. Many of the skills learnt in the first requirement of this award are invaluable here. Why not plan a number of routes between the same two points in a local park or woodland. Ask your Scouts to decide which route would be best, based on what the map says about each. You could ask them to then navigate their chosen route to see if they’re right.

4. The practical use of a compass.
The technique of aiming off has been around for many years. Rather than travelling along a straight path towards your destination point, which you could miss on either side, you deliberately aim off and travel to one side of your destination. You then know which way you need to turn to find the point. How far you aim off is a matter of experience – if you don’t aim off enough and you drift, you may end up on the other side of the destination point and then when you turn, you’ll be turning in the wrong direction! Also, if you aim too far off, you’ll have to travel a greater distance. The technique does take practise – but can be very worthwhile.

The skill of being able to step off at a consistent pace is extremely useful when navigating a route outdoors. A pace is the distance between every two steps a person takes, but you need to be able to equate this in real terms. One way your Scouts can practise pacing is to place a tape measure on the floor and see just how far they can pace. Once they are happy that they can achieve a consistent distance with every pace, they can apply this to fairly accurately pacing a longer distance.

**Deviation from course**

Often when following a bearing, buildings, trees or some other obstacles will block your chosen route and you will need to deviate to go around the problem. To do this you turn 90 degrees and walk until you are clear of the obstruction. Again, turn through 90 degrees so that you are parallel to your original course, and walk past the obstruction. For the third time, turn through 90 degrees, walking back towards the line of the original route. Finally turn 90 degrees again, and you will be back on your original course. This method only works if you are accurate with your bearings and count your steps.

Remember that accuracy is important in all compass work. Over a journey of six kilometres, an error of just two degrees will mean you miss your target by 200 metres. This may sound melodramatic, but imagine navigating across a fog-bound, snow-covered moor, and walking right past the only shelter, without even knowing it.

4. The practical use of a compass.
FURTHER INFORMATION

LINKS TO OTHER AWARDS

There are a number of other awards in the Balanced Programme that link very well with the Navigator Badge; they are:

- The Orienteer Activity Badge
- The Expedition Challenge
- The Hiker Activity Badge

Please visit www.scouts.org.uk for more news and information.

SOURCES OF INFORMATION

www.ordnancesurvey.co.uk
www.ordnancesurvey.co.uk/mapzone
www.direct.gov.uk/en/TravelAndTransport/Highwaycode/index.htm
www.thinkroadsafety.gov.uk

THINGS TO TRY

Mission Explore
www.missionexplore.net/challenger/ordinancesurvey

Completing the missions will help you to become observant and adept at putting together visual clues from the landscape to solve problems.

REFERENCES

Publications