

COMPASS AND MAPPING

General Introduction

This section does not go into any great detail as it is aimed at providing some background information for teaching Cubs. When doing map work with Cubs, try to use a map that shows the area you are in. Get them to show you where their school, homes, churches and local features are on the map.

Mapping and Orienteering is something you have to practice before you teach the Cubs about it. We encourage you to take part in a Troop activity where compass and mapping is used so you have some hands on experience. If you find difficulty in teaching this session, ask the help of the Scout Leader or a Venture, but make sure that they teach the Cubs simple mapping.

What is a map?

A map is a 2 dimensional scale representation of a 3 dimensional surface. This definition is about as general as you can get but there are several parts of this definition which need to be examined.

What does the 1:25000 scale means?

Simply, 1 unit of measurement on the map represents 25000 units on the ground. For example, 1cm on a 1:25000 map represents 25000cm (250 meters) on the ground.

Scale is not the only consideration when reading maps used for hill walking. On maps, symbols used to represent local features are shown along the bottom edge of the map as a key.

What are Contours?

Contours represent places of height above sea level. If this confuses you think of the shoreline as a contour at 0 meters. Imagine that the sea level was to rise by 10 meters, the new shoreline would then correspond to the 10 meter contour line. Contour lines are shown every 10 meters. It is important to realize that contours cannot show all the features present on a mountainside.

One way to introduce Cubs to contours is to do the potato contour activity described below.

What are Eastings and Northings?

On the map, we can see many boxes and each line is numbered. Eastings are those lines which are vertical. These lines are known as 'eastings' for the fact that they are numbered eastwards. The horizontal lines are known as 'northings' and the numbering goes northwards.

These Easting and the Northing lines are not the Longitudes and the Latitude lines. The latter are used for the world atlas purpose. In fact, on the map, you can see the longitudes and latitudes as black continuous lines.



Using a Roamer card

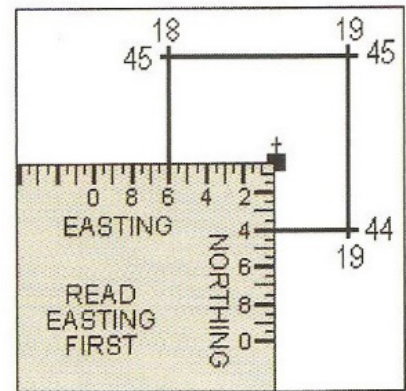
A roamer card is used to accurately estimate the subdivision of the distance between the grid lines.

Plotting a Map

When plotting a map, a number is given to the person in charge. This number is called the 'Map Reference'. This reference can be of four, six or eight digits. Let's work on the eight digit number.

Assume that the reference number is 18604440. Let's explain the meaning of this number. 18 is the Easting and 60 is the point between 18 and 19 on the map. 44 is the Northing and 40 is the point between 44 and 45 on the map. Therefore, by using this reference, you would know where you have to go.

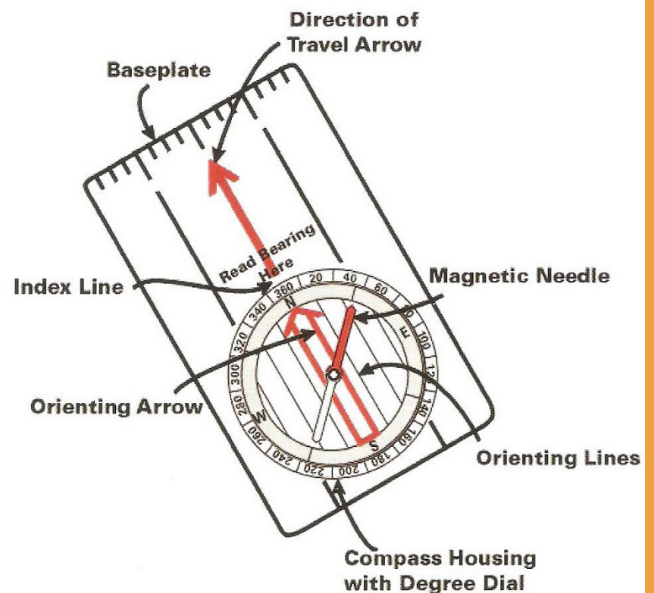
1. Find Easting 18 and Northing 44 (18604440)
2. The point you are looking for is somewhere in the top-right box of where those lines meet
3. To find the exact point, use the roamer card.
Set it up such that the 60 is on the line of the Easting and the 40 is on the line of the Northing (18604440)
4. This is the map reference. This is where you want to go.



What is a Compass?

Compasses are used to tell you direction. Magnetic compasses comprise a balanced magnetic needle so that it can rotate freely when the compass is held approximately level. Because the earth has a magnetic field that influences the needle, it always points towards the Magnetic North (once it has stopped swinging around and has come to rest). Beware of magnets, electricity wires, wire fences and lumps of metal such as a car, belt or a metal gate. Metal will deflect the compass and give an incorrect reading. The North-seeking end of the needle is normally coloured red or marked with an arrow or 'N' for North.

Magnetic North is situated near the north of Canada. You need not worry about this. It is just for your information.





Taking a Bearing

A bearing is simply the direction where 'something' is. Taking a bearing is something that is best learnt by experience. You can only get the basis from books, so do be sure to practice it before you try to show the Cubs. Using a Silva compass to take a bearing on, say, a tree, hold the compass level immediately in front of you so that you are looking directly over the pivot at the centre of the "Magnetic Needle" and along the "Travel Arrow" (See Silva Compass Diagram).

Rotate your whole body until the Travel Arrow points towards the tree. While still pointing the compass in this direction, rotate the Compass Housing Dial so that the red end of the Magnetic Needle is directly over the Orienting Arrow. Now read your Magnetic Bearing from the Compass Housing Dial at the end of the Travel Arrow which on the diagram is marked. Simple isn't it?

Walking a bearing

Now, assume you want to walk to the tree.

1. Just hold the compass level and immediately in front of you, as before.
2. Turn your whole body till the red end of the Magnetic Needle is directly over the Orienting Arrow. You are now pointing in the correct direction.
3. You need to walk in the direction the Travel Arrow is pointing. It is almost impossible to do this while looking at the compass so:
 - a. Pick a landmark that is on the path, and walk toward that.
 - b. When you arrive, check your bearing, and repeat.

If there are no convenient features, get your buddy to act as a feature. Get them to walk ahead a bit in the correct direction while you direct them. While you can still see them, get them to stop and then you walk to them.

What happens if you miss your destination? How do you know? It is important that you have a 'mental picture' of how far away the destination is from the starting point. By keeping track of the distance you have walked since you started walking along the bearing, you will have a fair idea of when you should reach it. At this point you decide how to search for the destination.

Suggestions:

- o Use the activity below to help the Cubs visualize what a map represents.



ACTIVITY FACT SHEET



Activity: Potato Contours



Objective: Compass and Mapping – learn how to interpret a map



Time: 30 – 45 minutes



Outline: Go over the map, and discuss the different symbols on the map, Northings and Eastings, etc. You can use the “potato contours” activity found in the Resource Folder to explain what contours are, and how they should be interpreted. Cubs can be paired up, one Cub holds the marker, and the other turns the potato.



Equipment: Potatos, knives, markers, pieces of plywood (or any other flat object) of same thickness



Place: Indoors



Group Size: Arrow Group









3rd Parties: N/A



ACTIVITY FACT SHEET



During the Activity:

-  – Cubs discuss what they think the different symbols mean. During the contours activity, a pair of Cubs need to coordinate together to do it properly.
-  – Doing the potato activity manually.
-  – The Cubs learn how to interpret a map.
-  – Different symbolic frameworks can be used to enhance this activity. The Cubs can be explorers, knights in the middle ages, etc.
-  – Ask the Cubs: How do you feel, now that you are able to read a map? Capable, safer, able, etc.
-  – Knowing how to read a map and use the compass means that if we are lost, we can use these tools to find our way back. When we feel lost in our lives we can turn to our friends, family and leaders to help us find our way.

GOLD ARROW



ACTIVITY FACT SHEET



The Activity below can be used to see that the cubs have some basic knowledge of how to use a compass and map



Activity: Short Hike/Treasure Hunt



Objective: Compass and Mapping – practice how to use a roamer card, and how to take bearings



Time: 30 minutes



Outline: The hike has several checkpoints in the form of Map References and/or compass bearings. Once the Cubs arrive to a checkpoint, the position/direction of the next checkpoint is given. This activity can take the form of a Treasure Hunt.



Equipment: Map, roamer card, silva compasses



Place: Preferred route/neighbourhood of HQ



Group Size: Pack/Arrow Group








3rd Parties: N/A



ACTIVITY FACT SHEET



During the Activity:

-  – Cubs need to work together and may help each other if they find a difficulty.
-  – Through the hike.
-  – The Cubs learn how to use a roamer card and compass.
-  – The Cubs may feel frustrated (because they find the task difficult), happy/proud (that they managed to accomplish the task), thankful towards other Cubs, etc. Help them realize that they shouldn't give up if a task seems difficult; with perseverance and the help of others it can be accomplished, and they can rightfully feel proud of themselves.
-  – If lost tools like these help us find our bearing. In our life, we need to know who the people we can trust and lean on are, so that when we feel lost we can ask them for help.

GOLD ARROW

After the Activity:

Include the knowledge learnt about Compass and Mapping in fun outdoor activities such as hikes, camping, treasure hunts, etc so that the cubs practice these skills and do not forget them.

