

OUTDOOR ADVENTURE MANUAL

Essential Scouting skills for the Great Outdoors



Camping
Firelighting
Cooking
Tracking
Navigation
First aid
Survival
Equipment
Pioneering
Environment



Foreword by Bear Grylls



FOREWORD BY BEAR GRYLLS

You'll probably know that I spend a lot of time outdoors. Whether this is in Antarctica, the Himalayas, or just on the deck of my houseboat with my children, I always find that something special happens when I step out into the open.

I feel not only energised, but also a powerful sense of belonging – as if this is where we should really be. In the wild, almost everything you see is alive, and this powerful life force runs through everything, including ourselves. Nature's presence is very strong.

We have a lot to learn from Nature: its quiet strength in adversity; its instinctive sense of renewal and stoicism. The philosopher Lao Tzu said: 'Nature does not hurry, yet everything is accomplished.' How often do you find yourself rushing about, only to find you've accomplished nothing at all? The trick is to act only when you need to and keep growing.

Scouting provides the perfect place for people to grow – and that includes adults and young people, and we never stop learning from each other.

When it comes to outdoor skills, Scouting is so full of knowledge. Over 100 years the most amazing skills have been passed on from leader to leader, Scout to Scout or mother and father to son and daughter, but it rarely gets written down. Until now. We've tracked down our best outdoors people and managed to get them to stand still long enough to scribble down their secrets – from how to rig a hammock and tarpaulin, to making rope from nettle stalks (yes, you did read that right).

Despite the brilliant ideas you'll find in this book, there's still no substitute for learning from a real person. So if you enjoy what you read, and are enthusiastic about all things outdoors, why not seek out your local Scout Group and let one of our volunteers (or brilliant young people) show you the ropes? We need people like you.

And if you're put off by the cold and rain, then remember this little quote from Alice Te Miha: 'No sky is heavy, if the heart be light.'

A large, stylized handwritten signature in black ink that reads "Bear". The signature is written in a cursive, flowing style with a long horizontal stroke underneath the word.

Bear Grylls
Chief Scout

PROJECT: A-FRAME SHELTER

As you'd expect, an A-frame shelter resembles a letter 'A' when viewed end-on. It's one of the most popular and versatile kinds of emergency shelter as it can be built relatively quickly, can be built to any size, and is quite sturdy if constructed properly.

Difficulty



Total time Allow 1 hour +

Before you begin work on your A-frame, check that the site is suitable – for example, don't build it near an animal trail or ants' nest. Check that there aren't any dead branches above you. Think about where the sun rises and sets and the direction of the prevailing wind – you can judge the terrain and surrounding flora to help avoid an exposed position. Avoid lower ground between two high points, as cold air can collect in such places and rain run-off may be a problem.

Spend time selecting and gathering your materials first, so that you can then concentrate on building your shelter in one sustained session. To a certain extent you can improvise the foliage depending on what you find on the forest floor.



← The A-Frame is a favourite design of survival schools everywhere, but don't forget your groundsheet!





1 To start the frame you'll need a straight and sturdy ridge pole and two forked supports. Make sure the supports are locked together and that the ridge pole is also secured through the middle. You should be able to rest your weight on the entrance end of the ridge pole at this point. You can use a sharpened digging stick to create small depressions in the ground for the supports. Next clear any debris inside the frame and check for sharp stones. Before going further, lie down within the frame to check that you can fit inside without your head sticking out or your feet touching the ridge pole.



2 Now build the sides using more sticks, which should rest on the ridge pole. Use fairly straight sticks, avoid rotten ones and trim to size so that they don't exceed the ridge pole too much. This will help prevent rain running down them and on to you. If any won't stay in place, either push them into the ground, or if the ground is hard weave very thin branches or plants such as nettles between them for support; but again, don't let them stick outwards (this could funnel rain in) or inwards (you will knock them and disturb the thatch).



3 Once the frame is finished and you have as many sticks in place as possible (this will help to support the leaf litter covering added in the next step) the thatching process can start. Utilise material such as large pieces of bark, thin twigs (from trees such as silver birch) and foliage. For the foliage, bracken leaves are excellent as they are large and commonly found, so they will help make the thatching process quick and efficient; cut bracken rather than pull it as the whole plant is easily uprooted.



4 Finally, add copious amounts of leaf litter, starting at the base of the frame and working upwards towards the apex. Using a coat or old tarp will speed up collection, and keep checking in the entrance for chinks of daylight. If there's no chance of wind and rain, a minimal covering will make a surprisingly cosy shelter. If it's going to be wet then pile up at least 30cm of leaf litter all over. Try not to scoop up soil and small debris as you gather the leaf litter, as it may fall on you during the night.

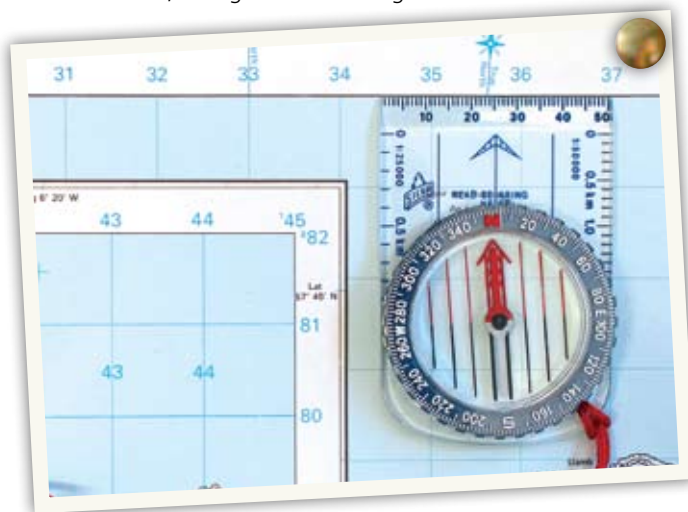
Setting a map with a compass

This is for when you're using a map with a compass to reach a given destination, probably in unfamiliar territory.

- 1 Turn the compass housing until the magnetic variation for the area is shown against the index pointer.
- 2 Place the direction-of-travel arrow pointing along the vertical grid line, with the direction-of-travel arrow pointing to the top of the map.
- 3 Turn the map with the compass in this position until the compass needle points to the north mark on the housing.
- 4 Your map is now 'set' and you should be able to recognise actual features from your map in front of you.



However, your compass doesn't point to the grid north of your map but to magnetic north. As we've already said, the location of magnetic north varies in different parts of the world and is constantly changing. The magnetic variation throughout the UK currently ranges from 2° to 6°. The amount of variation changes every year, so check your Ordnance Survey map to work out the current value. Orientate the map by carefully turning the compass housing anti-clockwise by, for example, 4°. Turn the map again to realign the magnetic needle with the red N and the map will then be set, taking account of magnetic variation.



Taking a bearing



- 1 Hold the compass flat in your hand with the direction-of-travel arrow pointing towards your destination or objective.
- 2 Turn the compass housing until the compass needle lines up over the orienting arrow. Ensure you use the North Pole of the needle, usually red.
- 3 Read off the magnetic bearing (the number of degrees) from the mark on the compass housing indicated by the index pointer.



- 4 Keep the housing in that position and check your bearing at regular intervals by lining up the needle with the orienting arrow and walking in the direction indicated by the direction-of-travel arrow.

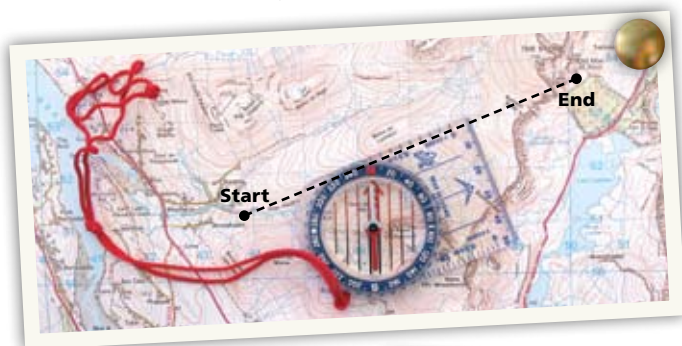
Walking on a bearing

This is used when you can initially see your objective or destination and don't need a map. It's important to work out a compass bearing before the situation changes (perhaps due to the weather or terrain you're in, or a delay resulting in darkness). Any of these factors may mean you can no longer see where you're aiming for and, therefore, will need to rely on the compass bearing.

- 1 Turn the housing of the compass until the bearing you require is against the index pointer.
- 2 Turn the compass until the needle lies over the orienting arrow.
- 3 Pick out a landmark along your direction-of-travel line and walk towards it.
- 4 Check your bearing and your objective at regular intervals.

Combining map and compass

1 Place the compass on the map so that one long edge joins the start point and your destination, with the direction-of-travel arrow pointing towards the direction you wish to travel (the direction of the map doesn't matter for this exercise).



2 Turn the compass housing until the orienting arrow points to the top of the map and the orienting lines are parallel to the grid lines.

3 Take the compass off the map and read off the bearing at the index pointer; add (or subtract) the local magnetic variation.



4 Turn the whole compass so that the needle comes to rest over the orienting arrow, with the red part to the north.

5 Hold the compass in front of you, pick out a landmark along your line of travel and walk towards it.

Avoiding obstacles

Sometimes when using a map and compass you'll come across an obstacle such as a lake or wood that cannot be crossed and you must get round them somehow. The problem is to avoid the obstacle without losing direction.

The obstacle may be bypassed by going round it by a series of right angles. Walk at 90° to your original route, count the number of paces until you clear the object. Turn 90° again, so that you are parallel with your original bearing and walk past the obstacle. Turn 90° again and walk the same number of paces. Then, finally, turn through 90° to bring yourself back on your original course.

This may seem pedantic, but it does work (providing the number of paces and turns are accurate). This can be vital if the weather suddenly worsens. An error of just 2° over a journey of 6km means that you'll miss your target by 200m. If you find yourself fog-bound and your destination is the only habitation for 20 miles around, you could be in trouble.

Common errors

When first learning how to use a compass, there seem to be many things to take into consideration. Here are a few things that often 'go wrong':

- ✓ Failing to add on the magnetic variation. If the magnetic variation is, for example, 6° and you forget to add it on, you'll be 105m off course for every kilometre travelled in a straight line. This gets proportionally bigger over greater distances.
- ✓ Not having the direction-of-travel arrow pointing from your start to your finish. If you make this mistake you'll walk in the opposite direction (180° out).
- ✓ Having the orienting arrow pointing to the bottom of the map. Again, you'll walk in the opposite direction from your intended route (180° out).
- ✓ Not taking account of the magnetic effects of iron and steel around you, such as watches, steel buckles, cars, buried pipes, reinforced concrete, wire fences and railway lines – and even other compasses or magnetic rocks. These items might attract your compass needle in preference to magnetic North Pole, giving you an inaccurate reading. If in doubt, move away from such objects.



KNOTS AND LASHINGS

Whether you're climbing, pioneering or angling, knots and lashings form an essential part of your outdoor knowledge. Practise in your spare time and you'll soon know the difference between a bend and a bight .



Knots

People have been tying knots for thousands of years, and despite modern technology they remain as vital as ever today. In sports such as sailing, climbing, caving and angling, and in work such as firefighting, fishing, truck driving and even surgery, the ability to tie the right knot is essential.

All knots have a purpose, and it's just as important to understand what that purpose is, and when the knot should be used, as it is to be able to tie it. Using the wrong knot at the wrong time can be dangerous.

How ropes are measured

Ropes are normally measured by their circumference. For example, a 75mm rope is approximately 25mm in diameter.

Hanking a rope

Hanking your rope prevents it from getting knotted while in storage. Wrap the rope around your thumb and little finger in a figure of eight. Now, holding the roped bundle together, remove with your other hand and wind the free length firstly over itself, and then back down the length. Pull the short free end to find the loop that draws in. Form a loop with the standing end through, pulling it firmly. The hank should now be tight. To free the whole rope, pull on both ends.



Rope terminology

You won't need to be told that a piece of rope has two ends! However, in order to work with ropes it's useful to understand the terminology used to describe their different parts.

- **Working end**

The end of the rope you're using to tie a knot.

- **Standing part** Any part between the two ends.

- **Standing end**

The opposite end of a rope to that being used to tie the knot.

- **Loop** A loop made by turning the rope back on itself and crossing the standing part.

- **Bight** A loop made by turning the rope back on itself without crossing the standing part.

- **Bend** A knot used for tying one rope to another.

- **Hitch** A means of fastening a rope to another object – such as a post, spar, pole or log – without using a full knot.



Types of rope

Laid ropes

These normally consist of three strands that run over each other from left to right. Traditionally they're made from natural fibres. Nowadays they tend more often to be made from synthetic materials.



Braided ropes

These consist of a strong core of synthetic fibres, covered by a plaited or braided sheath. They're always made from synthetic materials.



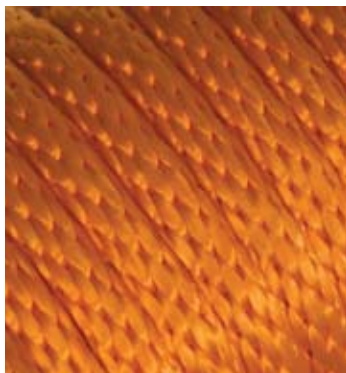
Natural ropes

These are relatively cheap and are made from such natural materials as hemp, sisal, manila and cotton. Their main disadvantage is in having a relatively low breaking point.



Synthetic ropes

These are relatively expensive but last a long time. They're superior to natural ropes in that they're generally lighter, stronger, water resistant, less prone to rot and better able to withstand difficult and extreme environments.



LEARNING TO TIE KNOTS

You'll need a couple of lengths of rope of differing colours, about a metre long – this will help you see the knot as it forms – plus a free-standing pole, a 'conventional' wooden chair back or a table leg for tying knots to.

The only way to learn how to tie knots is to practise. Have a go at tying a number of knots. If you're stuck on one, don't worry, move on and try another. Once you've mastered one type you may then find others easier. If you're left-handed try to learn from someone who's also left-handed – it's difficult to follow someone tying a knot when they use the opposite hand. Also, sit alongside the teacher rather than in front of them, otherwise everything will look confusingly upside-down!

Following instructions

Follow these steps when learning to tie a knot from a drawing:

- Look at the drawing and trace the various twists, crosses and bends with your eye, from the standing part to the working end, to see how the knot is constructed.
- Now lay your rope on a flat surface and take hold of a point 30cm in from the working end.
- Make the first bend, turn or crossover in the knot and then move along to the next.
- Look at the diagrams of knots and compare your work with them.
- Try each knot using these instructions a few times and then try it from memory. Try again a couple of days later. When you can tie the knot correctly three times in a row you'll probably remember it, especially if you continue to practise it occasionally.

Keep the knot flat and your hands open as you tie the knot. If the knot involves two working ends, work them together from the standing parts to the working ends.

Check the shape of the knot at each stage. Make sure you tighten the knot correctly so that it doesn't form the wrong shape at the last minute. With experience you'll find that many knots are actually made up of combinations of other simple knots. Tying more complex ones is just a matter of tying a series of simple ones!

OUTDOOR ADVENTURE MANUAL



PROJECT: A-FRAME SHELTER

As you'd expect, an A-frame shelter resembles a letter 'A' when viewed end-on. It's one of the most popular and versatile kinds of emergency shelter as it can be built relatively quickly, can be built to any size, and is quite sturdy if constructed properly.

Difficulty Total time Allow 1 hour +

Before you begin work on your shelter, check that the site is suitable. For example, don't build it near an exposed roof or over rocks. Check that there aren't any dead branches that could fall on you. Think about where the rain runs and the direction of the prevailing wind - you may prefer the breeze and prevailing wind to be behind you on exposed positions. If you have ground between high points, it will be an excellent site for such a shelter and you may find it a problem.



An A-frame is a simple but effective design of survival shelter. It's easy to build, but don't forget your groundwork!



To start the frame you'll need a straight and sturdy ridge pole and two shorter poles. When you've chosen an ideal spot, lay the ridge pole on the ground and secure it with pegs. Then lay the two shorter poles on either side of the ridge pole at the point. You can use a sharpened digging stick to secure the poles in the ground but this requires some skill. Alternatively, use stones or flat rocks to hold the poles in place. Make sure you have a good grip on the ridge pole and the shorter poles.



Once the frame is in place and you have a good grip on the ridge pole, you can start to add the sides. Use branches and twigs to build up the sides of the shelter. The branches should be layered and overlapping. Use a digging stick to push the branches into the ground. Make sure the sides are well supported and that the shelter is sturdy.



Now build the sides using more sticks, which should be layered and overlapping. Use a digging stick to push the sticks into the ground. Make sure the sides are well supported and that the shelter is sturdy.



Finally, add more sticks to the top of the shelter to secure the ridge pole. Use a digging stick to push the sticks into the ground. Make sure the shelter is sturdy and that the ridge pole is well supported.

OUTDOOR ADVENTURE MANUAL

WAYS OF COOKING

There are lots of ways to cook food, even when you're camping. Decide beforehand which method you're going to use for each food and in what order you will cook. Some foods and methods need more time than others.

Getting started

Before you start cooking, think about what you need to cook. Make a list of the things you need to cook and the order you will cook them in. This will help you to plan your cooking and to make sure you have everything you need before you start.

Frying

Frying is a quick and easy way to cook food. It's best for cooking small amounts of food. You can fry things like sausages, burgers, and vegetables. You can also fry things like fish and chicken. Frying is a good way to cook food when you're camping.



Baking

Baking is a good way to cook food when you're camping. You can bake things like bread, cakes, and pies. You can also bake things like meat and vegetables. Baking is a good way to cook food when you're camping.

STOVE OR CAMPFIRE?

There are two main ways to cook food when you're camping: using a stove or a campfire. Each has its own advantages and disadvantages. You should choose the one that is best for you.



Chances to use fire

- To cook your food
- To keep warm
- To dry your clothes
- To melt snow
- To boil water

Chances to use a stove

- To cook your food
- To boil water
- To melt snow
- To keep warm



OUTDOOR ADVENTURE MANUAL

Haynes has joined forces with The Scout Association to create the *Outdoor Adventure Manual*, a hands-on, inspirational manual for enjoying the Great Outdoors, whether hiking for the day or camping in the back of beyond.

The *Outdoor Adventure Manual* contains practical instruction on a wide range of 'backwoods' skills such as trekking, navigating, camping, firelighting and cooking, supported by hundreds of colour photographs and diagrams. The manual includes a range of projects - presented in Haynes's time-honoured step-by-step style - as diverse as building a shelter, making rope from nettle stalks, creating fire with a bow drill or making a camping stove from a tin can.

Using all the knowhow of experienced Scouting volunteers, this is the ultimate introduction to outdoor skills for anyone wanting to 'get out there'.

- The world around us: from hills and mountains to sea and coastline.
- Tents and camping: pitching a tent, camp layout, finding water, building shelters, wild camping.
- Navigation and tracking: map reading, using a compass, navigation by sun and stars, reading the landscape, geocaching, identifying animal tracks.
- Tools and gadgets: essential tools and how to use them, sharpening a knife, knots and lashings, building camp furniture.
- Fires, food and cooking: firelighting methods, types of fire, backwoods cooking, outdoor ovens, foraging for food.
- Safety, first aid and survival: dealing with emergency situations.

www.scouts.org.uk

This book has been written by a team of experienced Scouting volunteers in collaboration with staff at The Scout Association.



ISBN 978 0 85733 282 0 £21.99RRP

0 2 1 9 9

9 780857 332820