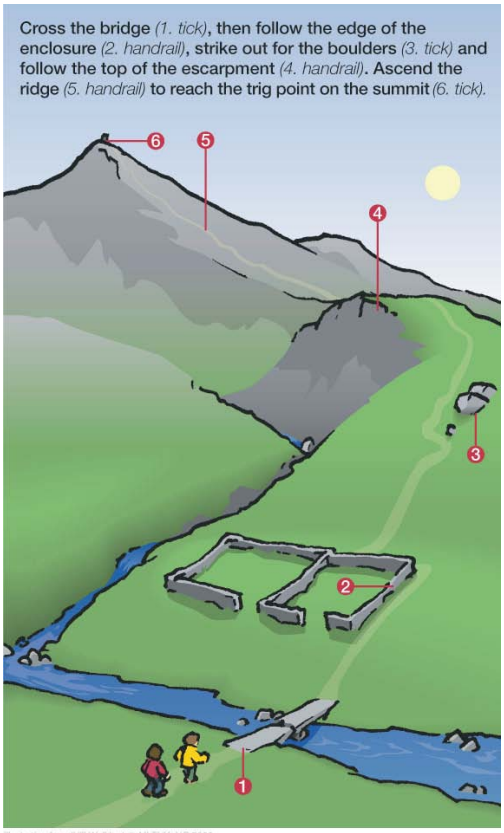
The Duke of Edinburgh's Award

Expedition Course Notes

Navigation: Handrails and Tick Features

Handrails: These are linear features that you can follow, they include paths, streams, ridges, crags, walls etc.

Tick Features: Looking at the map, if you mentally move along a handrail make note of all the things you are going to pass. You may cross a wall, pass a tarn and end up at a sheepfold. All these points are tick features. Identifying tick features and mentally ticking them off as you walk past them is the key to fair weather navigation.



Be careful though as the wall may have fallen down the tarn may be dry and the sheepfold may have been dismantled.

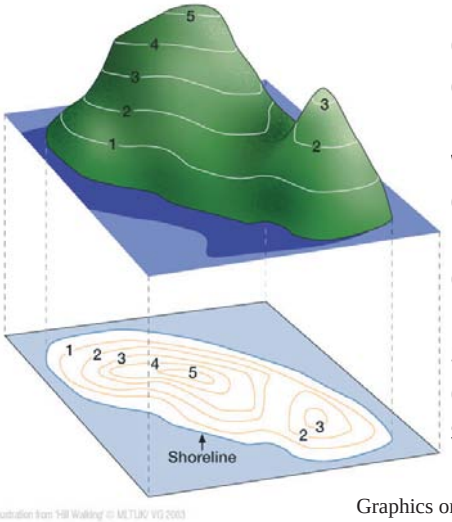
Catchments: This is another name for a tick feature at which you have to stop to make a decision on where to go. For example, at a path junction.

Overshoots: If you miss your catchment (or if no catchment existed) then you may end up further along your handrail than you wanted. Having identified an overshoot (a recognisable, distinct, tick feature) further along the handrail you will hopefully notice that you've gone too far and can start to back track before you have travelled to far the wrong way.

Contour lines

Contour lines are used in mapping to represent height. By interpreting them we get a three dimensional representation of what the terrain will look like. Each contour line connects different areas on the map that are at the same height. At a basic level the contours tell you the steepness of the slope. The closer the contours the steeper the slope.

It is hard to overstate the importance of contours when navigating using a map. It is often said that they are the only thing that you can really rely on when reading a map. Walls deteriorate and become overgrown, footpaths move, tarns are sometimes dry.



Contours can be used as tick features, catchments and overshoots. Whenever you are looking for features on the map, include some contour features. For example, when walking along your handrail think what the shape of the land will look like. It may be fairly flat for a km then a steep drop appears on the right followed by a ring contour to the left.

Some people take to interpreting contour lines really easily, for most it takes a very long time. Expect to spend the next couple of years honing your skills.

Relocation when Lost

There will be times when you are not sure where you are. The key to good navigation is observation. When you are walking, keep looking around you. Keep a mental note of ALL tick features that you pass, not just the ones you identified from the map at the beginning of the leg.

Once you realise you are not sure where you are there are a few steps to go through.

1) Stop.

Don't look at the map yet, take a look around you to see if there are features that you will be probably be able to see on the map. A tarn or a ring contour for instance. You may be able to take a bearing on your path or down a valley.

2) Where were you when you last knew where you were?

How long ago was that? What direction have you been walking in since then? How far might you have walked in that time? What have you passed since and when?

3) Put all that together with what you can see on the map.

This is the tricky bit. It is a good idea to start with where you last knew where you were and work forwards following your route recalling what you passed (note: the route you took may be different from the route you were meant to take). All being well you should be able to identify your position with ease using the features you identified in step 1. Be very aware of the tendency to make things fit with what you can see when they don't in real life. Pay particular attention to scale.

What if that doesn't work?

If you are getting nowhere you may wish to consider one of the following courses of action

1) Back tracking to where a place that you knew where you were.

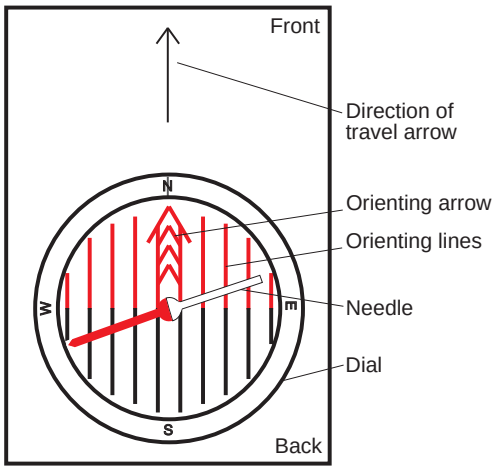
2) Keep going to get to the top of the next hill or move up to the crest of a ridge line to see what more you can see.

Learning how to relocate is more about looking around you rather than looking at the map. When lost, inexperienced navigators tend to start studying the map intently looking for clues and looking up to see if those clues are visible. It is easy to be 10 meters from a tarn and not be able to see it if you are slightly below it. However, if you can see a tarn on the ground (and it is big enough) then it will be on the map.

Look around first, look at the map second.

The Compass

A map is a representation of what occurs on the ground, on a sheet of paper. We get information from the map and need to convert it into information that we can use on the ground, and vice versa. For instance, assume we can see a path on the map that we want to follow, that does not tell us which direction the path goes in real life. In most cases we can tell from other features, the path may follow a stream up hill for example. For when we don't have those features, we have the compass. The compass, is a tool for converting information from the map to the ground and vice versa.



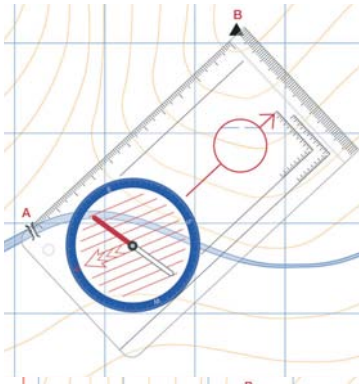
The compass, as a conversion tool, works by virtue of having features that relate to both the map and The Earth. On the map there are grid lines, on the compass these are represented by the orienting lines. On The Earth there is a magnetic field, on the compass there is a magnetic needle.

Taking a bearing from the map.

Lets assume to want to find out the bearing to follow on a path (between A and B).

1) Make an estimate

Look at the direction the path runs in and make an estimate (roughly north east or 45 degrees in the example on the right). By making an estimate you should avoid the embarrassment of being 180 degrees out. Set your compass to this estimate now.

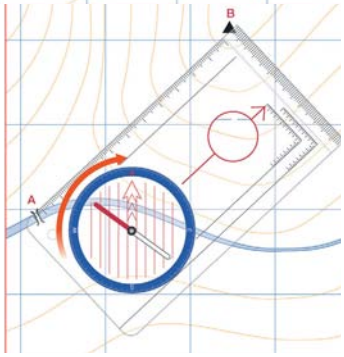


2) Position the compass

Place the long edge of the compass along the path that you need to follow with the big (direction of travel) arrow pointing in the direction you will be walking.

3) Turn the dial

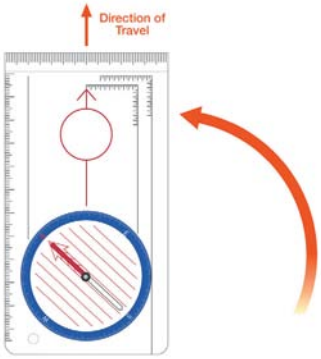
Turn the dial so the orientating arrows are pointing up the map parallel with the grid lines. You should end up with a figure roughly what you estimated in step one. If it is vastly different you are probably 90, 180 or 270 degrees out.



4) Add the magnetic variation

5) Align the needle

Take the compass off the map and line up the magnetic needle and the orienting arrow by holding the compass firmly and turning yourself round on the spot.



6) Follow the direction of travel

The 'direction of travel' arrow will point in the direction you need to travel in.

Magnetic Variation

Figure 1: UK With some vertical grid lines.

As we stated earlier the compass is a tool for converting information from the earth to the map and vise-versa. However, with this conversion there is an error. Below is an explanation of that error, information on how to find out what that error is and how to adjust for it.

Before we start there are 2 things you have to understand;

1) The grid lines on the map are NOT lines of Longitude. Lines of longitude converge at the North Pole. These grid lines are exactly 1km x 1km square. Each north-south grid line therefore points to a different place and not to the North Pole.

2) The magnet on the compass needle doesn't point to the North Pole either but somewhere north of the Hudson Bay in Canada.

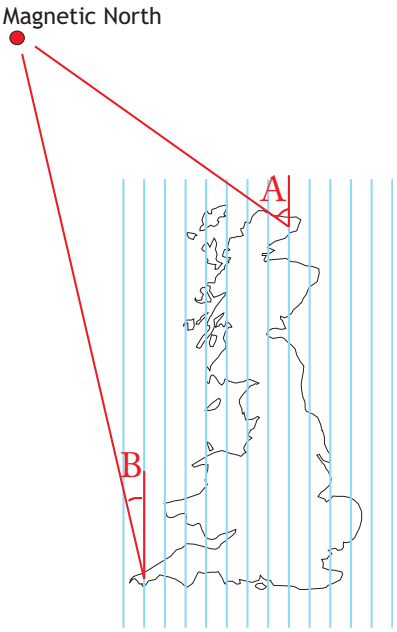


Figure 2: Magnetic variation is different in different parts of the country.

As our system of grid lines does not match up to the earth's magnetic field, to convert from the bearing gained from the map to one that you follow on the ground you have to make an adjustment. This is the magnetic variation.

It gets more complicated. As each grid line points to a 'different north' but the needle on the compass always points to the same place, the variation is different depending on where in the UK you are. Figure 2 shows (in a vastly exaggerated form) that if you are in the South West the magnetic variation is smaller than if you are in the North East. Angle B is less than Angle A.

It gets worse. Magnetic north is moving. Magnetic North is moving to the East and therefore the difference is declining. Back in 2004 it was 5° in Cumbria. Now in 2010 it is 2°.

The rule, at present, is that if you are taking a bearing from the map and going to follow that bearing on the ground you add the magnetic variation and if you are working from the ground to the map you delete it. The easy way to remember this is that the map is a small thing and the earth is a big thing so you have to add (make the bearing bigger) when going from the small thing to the big thing. In time I expect this to be the reverse as Magnetic North passes across our grid lines.

To find out what the magnetic variation is where you are you have to look at the notes on a map. It will say something like. **Magnetic north** (make sure you are reading the bit about Magnetic North and not True North) is estimated at 2°24' West of grid north at the centre of the sheet for July 2009. Annual change is approximately 10' East.

So if it is July 2009 you know that you have to add 2.5° and it is moving a degree every 6 years (there are 60' in a degree) so in 2015 you will add 1.5°. In reality you never really add half a degree as our compasses only have increments in 2°.

Hazards and Route Planning

It is a dangerous world out there, full of all sorts of things that are exciting, fun and can kill you. When planning your route you should be aware of potential dangers and consider ways that you can minimise risk. Some things, like farm houses with ferocious dogs, you can't really foresee, others you may be able to identify on the map and plan your route accordingly.

Some dangers you may wish to acknowledge and go there anyway, accepting an increased risk, others you may wish to avoid completely.

1) Water (streams, fords, stepping stones, lakes).

If you are crossing a stream you should use a bridge. Under no circumstances should you be wading through water, if the water is deeper than the ankle of your boot then it is too deep. Wading through streams and rivers is never safe. You may have chosen a route that involves stepping stones, these should be treated with caution (especially when they are wet).

2) Falling down something (Shake holes, cliffs, mines).

On your map you may see cliffs, old mine workings, pot holes and areas of shake holes marked. Pay attention to these and under no circumstances decide to go exploring old mine workings.

3) Roads.

Avoid roads completely if possible, they are rubbish for walking on anyway. If you do need to cross a road or walk along a road for a short period then wait for everyone to catch up and gather together. Make sure everyone knows where you are going, what tick features you will pass and roughly how long it will take. Then execute the manoeuvre, in single file, as quickly and efficiently as possible. Don't chatter, concentrate. It is the reality that, even with all that dangerous countryside around, fast country roads and cars are probably your greatest threat.

4) Trips and falls.

Wear decent boots with a decent amount of tread (to give good grip), ask us about your planned footwear in plenty of time, we may be able to lend you a pair of boots from stores. Take particular care on steep or slippy ground.

5) The weather (hypothermia, lightening, flooding, hyperthermia, sunburn)

6) Farm animals.

Be aware of the potential dangers posed by farm animals.

The Country Code

The countryside is vulnerable to overuse and misuse by those of us who visit it. By taking a few precautions and following some common sense rules we can drastically minimise our impact on the environment.

1) Don't drop litter.

By litter we include not just paper and drinks bottles but also organic material such as orange peel and banana skins. These materials may take weeks or even months to rot down and look unsightly while they do.

2) Take care on roads.

Many country roads are narrow and cars often travel very fast on them. When you get to a road stop. If you are map reading brief the rest of the group on how far you will be walking and where you will be turning off. Then lead off walking in single file. Generally you should walk on the right hand side of the road. However, if the road is very narrow it may be safer to cross to stay on the outside of any bends. Please concentrate and don't chatter to each other until you are safely off the road.

3) Close gates after you.

If you open a gate make sure you close it properly or livestock may escape onto roads. If a gate has been left open then it is probably a good idea to leave it that way unless it is obvious that it has been done so through the carelessness of others and leaving it open may endanger people or livestock (a field of cows next to a road for example).

4) Don't go to the toilet close to streams, lakes or any other watercourse.

Ensure you are at least 30 meters from any watercourse before going to the toilet. If you need to poo ensure that it is well buried (15 cm deep). It is a good idea to burn any toilet paper then if it does get dug up by an animal there is not dirty toilet paper blowing about. If you can't bury it then current advice is to spread it out as thinly as possible using a rock to speed up its breakdown. Sorry... I don't make the rules.

5) Think about erosion.

If you are on a thin footpath through a meadow (for example) then walking in single file on the path will cause less damage to area than spreading out next to each other. Most footpaths are wide enough for two but if they are not then please don't widen them.

6) Take care around animals.

This is especially true if they have young with them, this is as much for self preservation as animal welfare. It is not a good idea to walk between a cow and its calf. Leave the footpath to go round them rather than creating this scenario.

7) Don't wash up in streams.

If you cook soup during the day or if you are camping next to a stream then please don't pollute the stream by washing up in it. If you need to wash up fill a pan from the stream and take it away from the stream to do the washing up.

Tent use

The popularity of festivals and the cheap ‘disposable‘ tent has meant that many people don’t know how to look after them properly. Our tents are used as much high up in the mountains in foul weather as they are in the sheltered valleys. They should be thought of not merely as tents but expensive and important emergency equipment. While you may be camping on a campsite in the Dales in August the next time your tent is used it may be in gale force winds on a mountain in a Scottish winter. Treat it well.

1) Before pitching - Check the site for stones and sharp twigs.

These will not only make your night more uncomfortable but may puncture the groundsheet and then let water in.

2) Don’t lose the bags.

As soon as you take the tent, poles or pegs out of their bags put the bags in your pocket so they don’t blow away.

3) Keep your tent clean.

Take your shoes off, try not to get mud on the side of the tent. Always tie back the doors when they are open. If a tent gets dirty this negatively effects its waterproofing.

4) Use the zips.

If you open the tent by simply pulling on the material this will weaken the zips and may cause them to break. If your zips break you may be in for an uncomfortable night.

5) Allow the tent to ventilate.

If your tent has solid inner walls then it is important to keep the inner door open a little. If you don’t then condensation from your breath will collect on the walls and make the inside of the tent, you and your sleeping bag damp. Even if it is cold a small gap will keep you dryer and therefore warmer.

6) Don’t smoke or cook in or near the tents.

A tent can catch fire in seconds burning anyone or anything inside it. Do not under ANY circumstances cook or smoke in the tents.

7) Dry the tent when you get home.

ALWAYS take the tent out of its bag and hang it up to dry when you get home (even if you think it is dry). If you don’t hang it up to air it will rot and need replacing.

First Aid

With a little care all the injuries and ailments discussed below are avoidable. Preventing these injuries is much better than having to provide treatment.

1) Blisters

The two main causes of blisters are ill fitting footwear and poor choice of fabric in socks. Applying tape or a blister plaster (e.g. Compeed) as soon as a tender spot if felt on the foot will delay or completely prevent the formation of blisters. If blisters are left to get too serious it may mean you are unable to finish the expedition.

2) Burns and Scalds

Burns and scalds are treated by placing the affected area under cold running water for at least 10 minutes, then covered with a sterile dressing. Even minor burns can become extremely painful if not treated immediately. The most likely cause of a burn is your cooking equipment, but you should also protect yourself against sunburn.

3) Leg and Ankle Injuries

Sprains and ligament injuries are relatively common in the outdoors. Such injuries should be treated as suspected fractures. Injuries of this nature should be rested, cooled elevated and immobilised. If this is carried out check that circulation is not impaired. All such injuries must be checked by a casualty department.

4) Exhaustion

Exhaustion leads to reduced oxygen and sugar supplies to the brain, this may lead to mood swings, irrational behaviour or withdrawal from the rest of the group.

a) Cold Exhaustion (Hypothermia)

This is particularly likely in cold, wet conditions and can become very serious in a short amount of time. Symptoms include, disorientation, stumbling, complaining, cold outer extremities and withdrawal.

Cold Exhaustion is treated by a combination of replacing energy and warming.

- Energy should be replaced through eating chocolate bars (for speed of delivery) and resting.
- Warming can be achieved by putting more (and waterproof) clothing on. Wet clothes should be removed only if a dry sheltered place is available, otherwise warm clothes should be put on over the top. Warm drinks should be prepared too.

You may elect to put your tents up, get a hot drink on the go, get into your sleeping bags and call us for assistance.

b) Heat Exhaustion (Hyperthermia)

Less likely than cold exhaustion but just as serious, heat exhaustion may occur as a result of insufficient fluid intake and overheating. This is most likely when engaging in ongoing exercise in hot conditions. The issues raised by this are similar to those of dehydration (see below).

5) Dehydration

Most people, when out walking, don't drink enough. You have to increase your fluid intake to make up for fluid lost through sweating. Sometimes people purposely don't drink so they don't have to go to the toilet outdoors. This is a really bad idea! Symptoms of dehydration include thirst (surprise, surprise) headaches, collapse and vomiting.

Emergency Procedures

Evaluate the situation

Apply First Aid if necessary. Do you need help? If so do you need help from our staff or the Emergency Services?

Calling the Emergency services

If you decide to call the Emergency services from your location do so by calling 999 or 112. Even if you have no signal it often still works. If you require the services of mountain rescue (i.e. if the casualty is in a remote situation) ask for the police and tell **them** that it is a mountain rescue situation.

Be ready to tell them.

1) Number and type of casualties.

2) Where you are, a grid reference or as close as possible.

3) What your phone number is.

4) Our contact details and ask them to contact us.

As we are in the area it is entirely possible that we will be able to get to you sooner.

After you have called Mountain Rescue call us if you can from your location.

Sending for Help

If you do not have phone reception you may have to send part of your group to get help

1) Decide where to go for help.

Make sure the people staying know where you have gone. You may elect to go somewhere to find phone signal or to the nearest house.

2) Write down all important information.

3) Make sure there are two of you going together.

4) Take enough equipment to ensure your safety.

5) Don't rush.

When you get in contact with us or the emergency services, get clear instruction on what you should do next.

Waiting for help

Once you have decided that you need help on the hillside you need to prepare for a potentially long wait for us or the emergency services to get to you. There is a lot you can do to make things more comfortable and to pass the time.

1) Keep someone with any casualties at all times.

Look specifically for signs of shock and hypothermia.

2) Keep checking on each other, is everyone warm enough?

3) Every few minutes blow your whistle (six long blasts).

4) Consider putting up a tent or two.

You will probably be in the same place for a number of hours waiting for help to arrive.

5) Consider getting someone to make a brew.

Hot drinks will help you keep warm and are great for morale.

6) Once things have settled down and you have the time, write a log of events.

Time of incident, time of phone calls, changes in casualty condition, first cup of tea, tents up. It will help you keep time in perspective.

Packing a Rucksack

Much of packing a rucksack is down to personal preference. Here are some things to bear in mind which should make life easier and load carrying more manageable. You will be walking for up to 8 hours a day with your rucksack on your back, it is therefore in your interest to make it as comfortable as possible.

There are two basic principles that you will want to follow when packing your rucksack, unfortunately the two principles sometimes conflict but do your best.

Principle 1: Heavy items should be close to your back, evenly weighted (side to side) and near the top.

This means you won't feel like you're being pulled off balance. It will also reduce the amount of pull on your shoulders. For instance, Place a heavy item like your tent under the lid rather than on the straps on the bottom at the back.

Principle 2: Items you may need should be accessible.

Pack your snacks, lunch, drinks, waterproofs, hat, gloves, torch and emergency gear near the top of the bag or in the outer pockets.

Other considerations, tips and tricks

The Sleeping bag.

It is common to pack the sleeping bag at the bottom of the rucksack. It is the least likely item to be needed during the course of the day and if your sleeping bag is at the bottom you know you can sit on the bottom of your rucksack without splitting food bags open or breaking anything.

Attaching things to the outside of the bag.

As sleeping mats are so light they can be attached by straps to either the top, side or bottom of the bag as preferred. It is best not to attach anything else to the outside of the bag - heavier items will make the load unbalanced and smaller items might get lost or damaged. You also look a lot more slick and together if you haven't got a pair of flip flops or a mug hanging off your bag.

Keeping things dry.

You should use a waterproof liner inside your bag to keep the big things dry - heavy duty rubble sacks or bin bags are good cheap options. Plastic freezer bags are good for smaller items. Do not just rely on the rain cover as it will fail after time.

Fitting your rucksack.

Make sure your rucksack is correctly adjusted to you. You can adjust the back length, the shoulder straps and the position of the hip belt. It will make a huge difference to how the weight is distributed and when you get it right, it will actually feel lighter. Get used to the routine of adjusting your pack every time you put it on and you will feel the benefit.

Expedition Menu Planning Principles

When out walking, particularly on multi-day trips, it is important to make sure you eat enough to prevent exhaustion and the associated problems and dangers.

There are a few things to consider when menu planning. As usual some of these factors conflict with one another so it is up to you to consider what is best for you.

1) Weight.

You have to carry everything you eat once you get going, it is obviously in your best interest to make it as light as possible.
Don't even think about carrying tins or glass jars.
Boil in the bag is heavier than dehydrated food.
Think about removing excess packaging but be careful not to remove cooking instructions you may want to refer to later.

2) Speed and ease of preparation.

If the weather is nice you may want to spend a bit of time relaxing on the campsite and cooking. If, however, it has been raining all day the last thing you are going to want to do is sit outside in the rain cooking.
Boil in the bag may be heavier than dried food but it is faster, easy to prepare and generally tastes better.
If you are buying pasta choose quick cook varieties, this will save both time and fuel.
Consider practising cooking what you are going to cook at home on one hob.

3) Tastiness and variety.

You need your diet to be as varied as possible as eating the same thing every day can become really dull. I would try and get some fresh stuff in for the beginning of the trip and move onto the less tasty but longer life foods later.

4) Durability and longevity.

You need foods that will not be ruined or taste bad if they are squashed and won't leak out of any containers. If you have perishables make sure you are planning to eat them early and that you have a non-perishable equivalent for later in the expedition.

5) Calorific intake.

On expedition you will burn many more calories than usual. You should be aiming to eat something in the region of 3500 calories per day but this will vary from person to person.

6) When you get to the campsite.

When you get to the camp site you want to be eating as soon as possible. Have a snack as soon as you stop. Energy is replenished in the muscles much more effectively straight after exercise so eating immediately will give you more energy the next day. Next get your tent up in case it starts raining then start cooking your main meal.

7) Emergency rations.

Don't eat all your food on the last day. You must keep some back in case of emergency. Your assessor may well ask to see your emergency rations at the end.

Expedition Menu Planning in Practice

Breakfast

You won't have to carry your first breakfast so make it a BIG breakfast. Consider going to cafe near your start point as a team building exercise. After that go for cereal, sweet porridge, flapjack or anything high in energy from your lunch stash as lunch foods and breakfast foods are pretty much interchangeable. Early in your trip croissants are great as they are full of fat and it doesn't matter if they get squashed but eat them quick as they will go stale.

Make sure you are fully re-hydrated before you leave the camp each morning as anything you drink now you won't have to carry.

Snacks / Lunch

Lunch shouldn't be an event but more a process. Eat little and often. Keep food in your pockets and snack throughout the day. Good snacking foods include packets of peanuts or trail mix (fruit and nut mix), flapjack, energy bars, cereal bars.

If you stop for food some suggestions are oat cakes and pate (from a toothpaste like tube), heavy, stodgy cakes (for example Fruit cake, malt loaf, Jamaica cake), If you want to eat bread products choose flat bread like pitta bread or even tastier and longer lasting, tortillas.

Health food shops do loads of different dried fruits. You can get a dozen dried bananas in a pack about the size of a fist. Dried fruit is healthier and provides a slower release energy than chocolate and is pretty indestructible. Everyone should get into dried fruit for their expedition

Dinner

You want to get eating complex carbohydrate as soon as possible so skip your starter and get straight onto the main course. Noodles, pasta and rice all make good dinners, they are light weight, quick and easy to cook. They can be supplemented with other ingredients such as nuts, the odd carrot and packet sauces.

Many people choose boil in the bag foods. You can get a wide variety from outdoor shops and if you like curries you can get much cheaper and tastier ones from continental supermarkets. They are ready in minutes, create no washing up, generally taste pretty good and leave you with a pan of hot water to make a hot drink or soup with. The down side is that they are heavier to carry than dried foods.

After you have eaten your main course consider going back to your starter and making a cup-a-soup. Then you will be ready for desert.

Drinks

It is essential to drink enough to avoid dehydration. Drinking enough water is possibly the simplest way to do this. Weak solutions of cordial are also good.

Trangia use

1) Never use the stove within 3 metres of any tent.

2) Give the pans a rinse.
If you can smell meths in the pans then it is a good idea to give them a quick clean.

3) **Always** hold the burner in your hand while filling.
If the burner is too hot to handle then it is too hot to refill. Remember that meths can burn with a transparent flame so even if it looks empty, and you cannot see a flame, treat with care.

4) Screw the fuel bottle cap down immediately after use.
If you forget to seal the bottle properly you can end up with meths leaking inside your bag and over your stuff. The best time to secure it is when it is in your hand.

5) Position the burner in the base of the trangia and then light.
Do not hold the burner when lighting as you may spill meths when placing the burner back in the base.

6) Bring a lighter and matches.
The trangia is easier to light with matches but you should bring a lighter too as matches become useless if they get wet.

7) Use the Handle to hold the pan when stirring.
(Though don't leave the handle on the pan).
Holding the handle provides stability while stirring but if you leave the handle on the trangia it can get very hot.

8) **Don't** attempt to blow out the Trangia.
If you attempt to blow out the flame then you can blow flaming meths at anything opposite you or even into your own face. Close the simmer ring and use the handle to carefully place it over the burner (do not use the screw top).

9) Don't place the screw top on the burner until it is completely cool.
Inside the screw top is a rubber ring to stop it leaking. If you screw the cap on while the burner is still too hot it will melt this ring and meths will leak out into your bag.

10) Place the burner in a sound plastic bag before packing it up.

Lupine Adventure Co-operative route card

Walking Speed in KM/h

Time added (in seconds) per 10m of height climbed

Date: START -	Direction of Bearing as Required	Distance in km	Time estimated	Height climbed metres	Extra Time Estimated	Time for Stops, Meals, etc	Time per Leg	Time at End of Leg	ROUTE INFORMATION Include your handrails, tick features, catchments and overshoots.	Escape in Emergency to:
Start GR:						Start Time				
TO / GR										
TO / GR										
TO / GR										
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TO / GR										
TO / GR										
TO / GR										
TO / GR										
TO / GR										
TOTALS FOR DAY										

Supervisor's Name, Location, Phone:

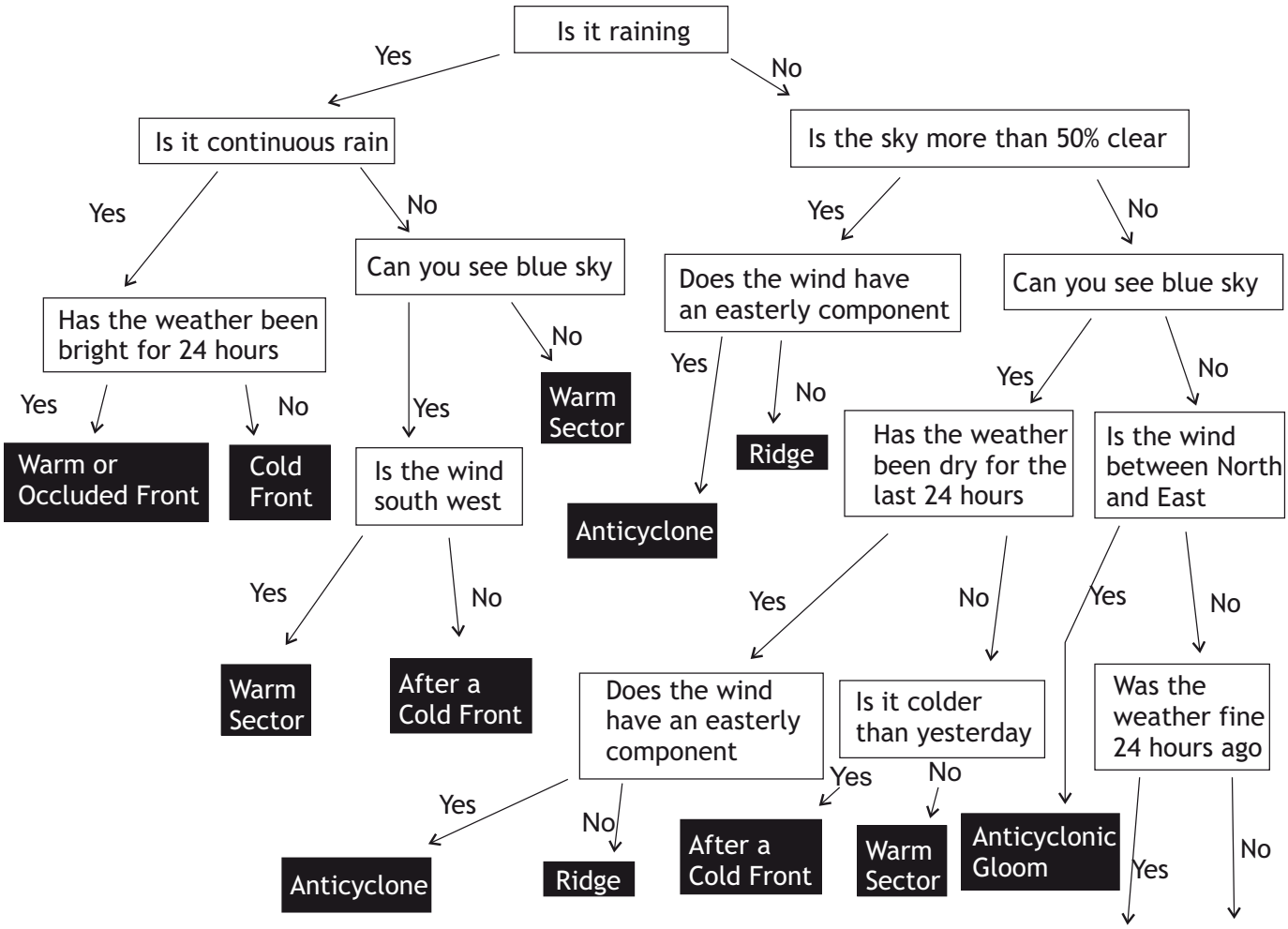
Group Members			
	1	2	3
4	5	6	7
8	9	10	11

NOTES

1 Start a new Route Card for each day.

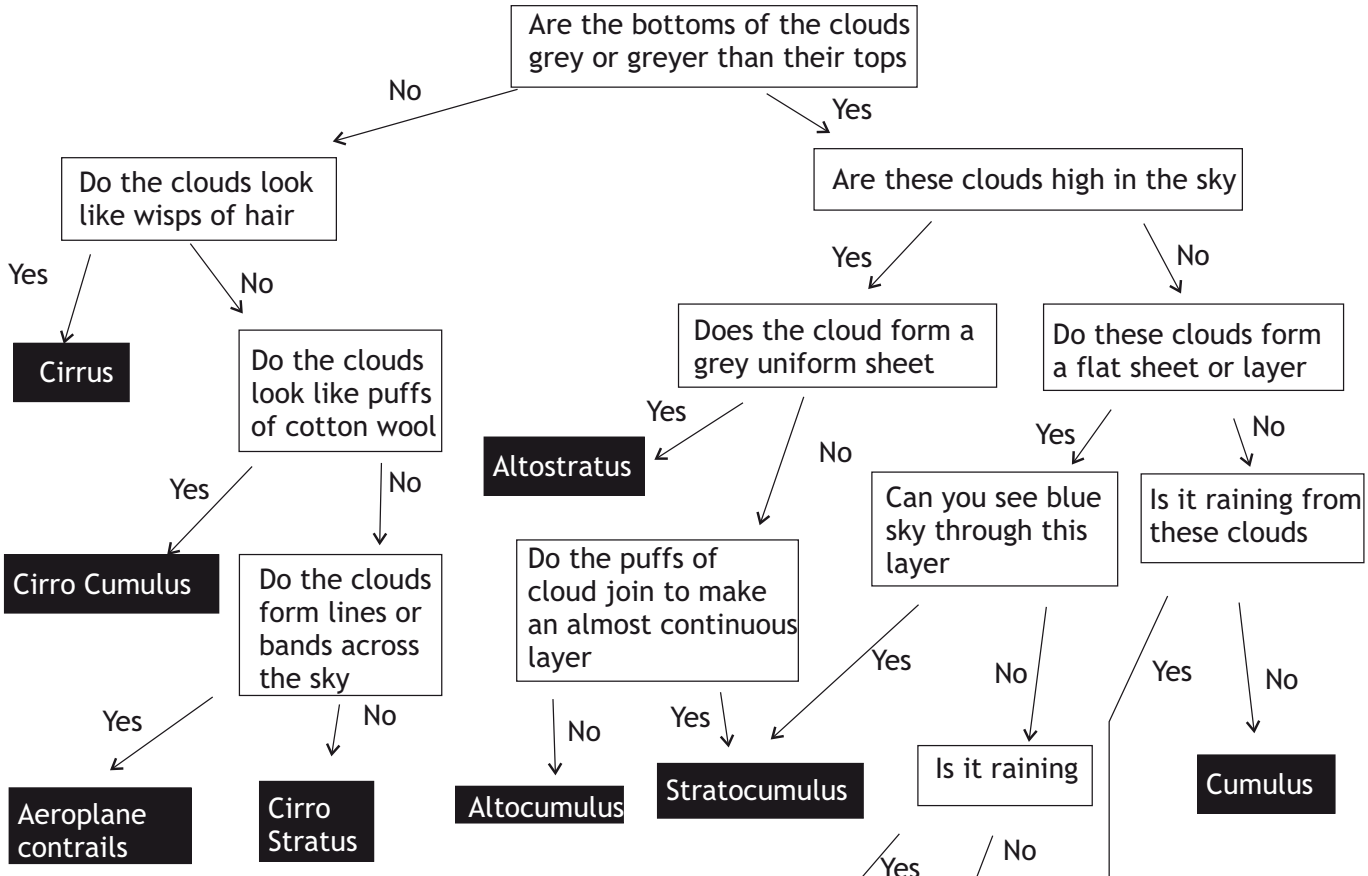
2 Escape Route - insert only those places to which an escape may be attempted from a hazard or emergency.

3 Time is added on for height climbed. No allowance for descent. If you go up 40m down 20m and then up another 30m your height climbed should be 70m



Weather forecasting

Warm or Occluded Front	The rain will continue for a few hours before being replaced by a period of bright and breezy weather with the possibility of showers. The weather will continue to be unsettled for the next day or so
Cold Front	The rain should soon clear. To be replaced by sunny, blustery colder conditions with fairly frequent and heavy rain showers. The outlook is for a spell of cold bright weather before rain comes in once again from the west
After a Cold Front	The theme of occasional heavy showers will continue until the showers die away and the wind eases to make way for a spell of fine weather
Warm Sector	Present weather will continue for a while until heavy rain and strong winds come in from the west this will clear after about six hours to be replaced by a spell of bright blustery and showery weather
Anticyclone	The fine weather is set to continue fro the for seeable future bringing warm days and cool nights.
Ridge	The fine weather is set to continue for the next day or so before the sky fills with high cloud which will thicken to give a prolonged period of heavy rain
Warm or occluded front approaching	The layers of high cloud will thicken and it will begin to rain within the next few hours. The rain will last approximately eight hours before clearing to give a spell of brighter dryer weather
Anticyclonic Gloom	The gloomy weather is likely to persist for the next few days. However some lucky areas may occasionally see the sun



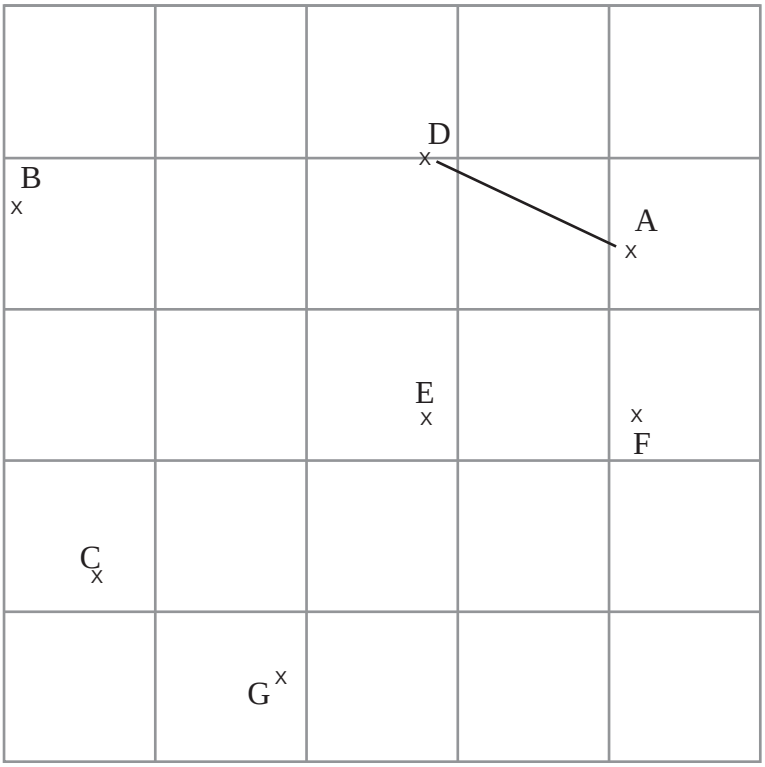
Clouds

Cirrus	Cirrus show that there is a lot of wind high in the atmosphere which means that the weather is probably about to change. Often seen before a warm or occluded front.
Cirro Cumulus	Often called mackerel sky. Formed when the top of the troposphere is colder than what is underneath. Often found in the warm sector before a cold front arrives.
Aeroplane contrails	Aeroplane trails form when the upper air is very cold which makes the water in the gas coming from the engines condense and form cloud. Often seen in an anticyclone
Cirro Stratus	Cirrostratus is like cirrus but thicker and it tells us that the weather is about to change. Often seen towards the end of a ridge and before a warm or occluded front.
Altostratus	Forms when large areas of air are moving slowly upwards. Can be seen before a warm or occluded front.
Stratocumulus	Forms when the air high up is warmer than it might normally be. This happens during anticyclones. These clouds are responsible for anticyclonic gloom.
Altocumulus	Forms when the air in the middle of the troposphere is much colder than the air below. Often seen in the warm sector before a cold front.
Nimbostratus	Formed when large areas of the troposphere are moving gradually upwards. This is the cloud which makes the rain in warm, occluded and cold fronts.
Stratus	Formed when the air is very humid and often produces drizzle. Usually found in the warm sector.
Cumulonimbus	Formed when the surface of the Earth is much warmer than the air above it. Often found after a cold front, but also at the end of an anticyclone or ridge in the summer
Cumulus	Fair weather cloud. Found when there is a ridge of high pressure in the warm sector or near the coast during an anticyclone where they show that there is a sea breeze

Taking Bearings

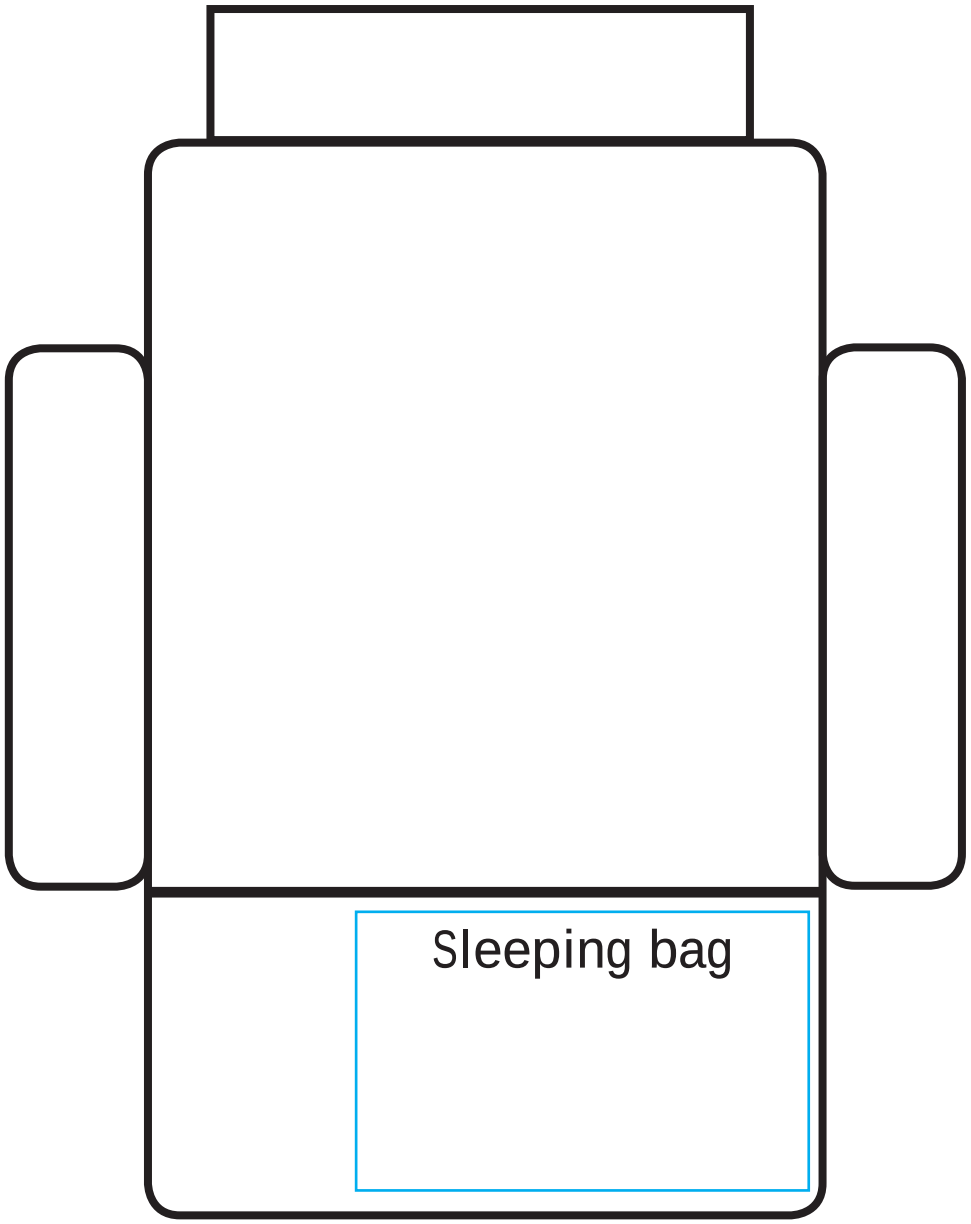
Fill in the sheet below taking the bearing between the different points. First make a guess and the use your compass to get an accurate reading

	Guess	Reading
A-D	_____	_____
B-C	_____	_____
A-F	_____	_____
A-E	_____	_____
F-E	_____	_____
C-B	_____	_____
G-A	_____	_____
E-D	_____	_____
G-B	_____	_____



Packing a Rucksack

Below is a representation of a rucksack with top pocket, side pockets, main section and lower section. Draw in the items shown where you would place them. An approximation of the size of items is shown (though you may wish to change the shape of items such as clothes and food). Feel free to add things not listed.



Sleeping bag

Torch

Jumper, hat, gloves

Food

Stove

Lunch

Fuel

Water

Tent

Sleeping Mat

Waterproof Jacket

Waterproof Trousers

First Aid

Clothes

Lupine Adventure Co-operative – Duke of Edinburgh's Award Kit List

Personal kit list that you must provide yourselves

Walking Socks	
T-Shirts	
Walking Trousers	
Underwear	
pair of Gloves	
Warm Hat	
Sun Hat	
Sun Cream	
Personal Medication & Small First Aid Kit	
Watch	
Whistle	
Torch	
Spare Batteries for torch	
Spare Bulb for torch	
Notebook and Pen/Pencil	
Mobile Phone (fully charged but switched off)	
Water Bottle	
Food	
Emergency Food Rations	
Cutlery and Mug	
Lighter	
Small Wash Kit	
Towel	
Small amount of money for emergencies	
Strong Plastic Bags / Bin Liners (to line rucksack)	
pair of Gaiters (optional)	
Trainers/Flip-Flops (optional)	

Personal kit that we may be able to provide if necessary

1x Rucksack (approximately 65 litre capacity)	
1x Sleeping Mat	
1x Sleeping Bag	
Sleeping Bag Liner (optional)	
1x Waterproof Jacket	
1x Waterproof Overtrousers	
1x Pair of walking boots	

Group kit that we can provide if necessary

Tent– 1 per pair	
Trangia Cooking Stove – 1 per pair	
1 litre Fuel Bottle (full) – 1 per pair	
1x Group First Aid Kit	
2x Maps	
2x Compasses	
Survival Bag	

Group kit that participants should provide themselves

1x Tea Towel	
1x Washing-Up Liquid	
1x Pan Scourer / J-Cloths	
Plastic Bags (for rubbish)	
1x Camera (photos for report/presentation)	

This document was last updated on
27th April 2010.

You have downloaded a fairly low resolution copy.

Please get in touch if
1) you require a high quality copy
2) would like to be kept informed of updates
3) wish to suggest any additions or alterations

There is no charge for any of the above, it is just nice to hear from people who use these handouts.

You can e-mail us on

lupine@lupineadventure.co.uk

Possible future additions include pages on

- Orientating the map
- Example aims of the expedition