



The Duke of Edinburgh's Award

Expedition Work Book

Name: _____

Navigation: Map Scales

For the two common map scales mentioned below fill in the rest of the grid

Scale:	How many cm on the map is a KM	One advantage of this scale over the other	Another advantage of this scale
1: 50 000			
1: 25 000			

Downloaded from lupineadventure.co.uk

Navigation: Grid References

On the map provided find the following grid references. At that point will be a symbol for a feature, If you don't know what the symbol means look it up in the map's key. Write down the feature at that point (don't write down place names, we are looking for words like, windmill, telephone box, triangulation point, mast, railway station, etc...)

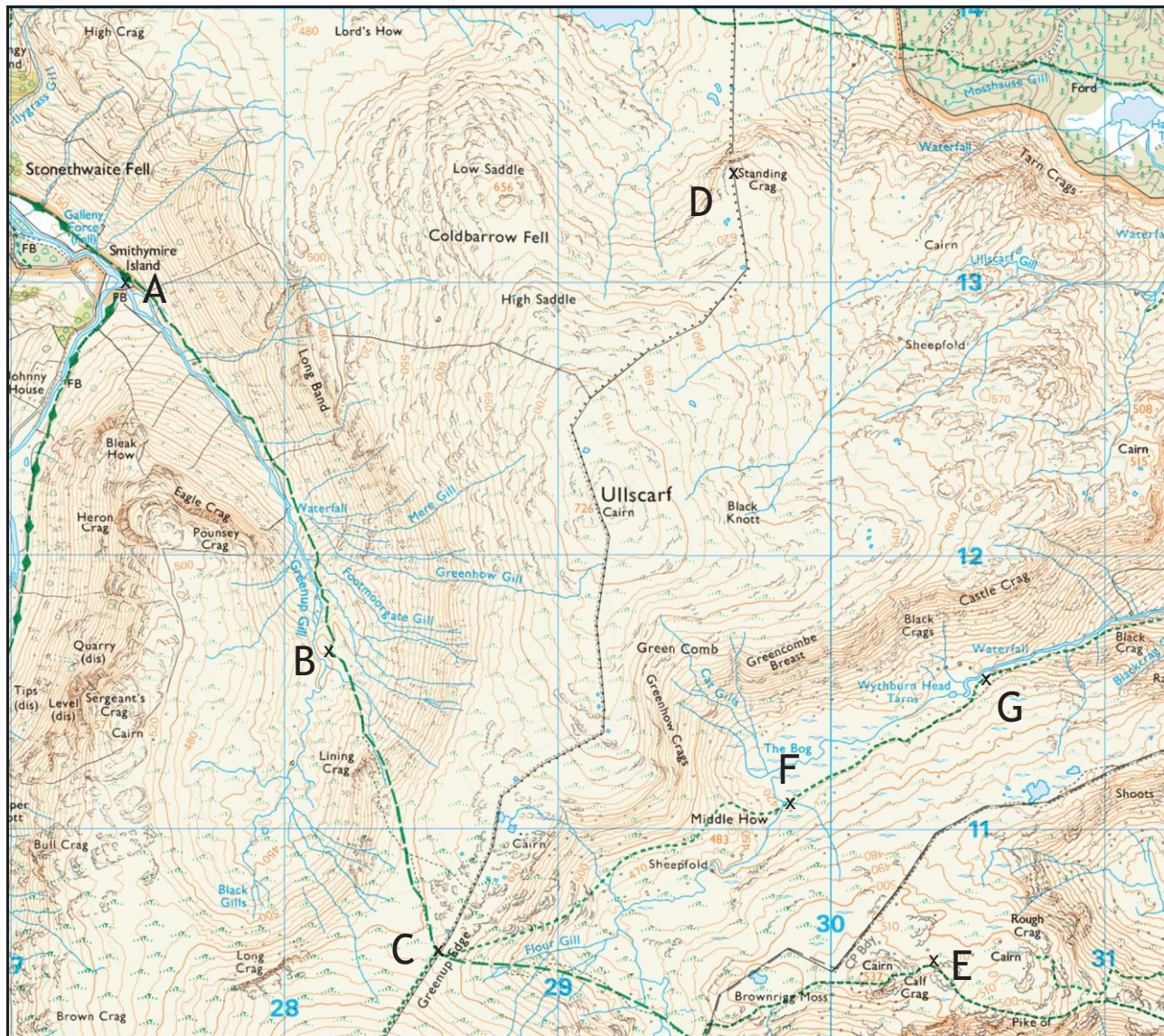
If you have not been given a map the write the grid references of each of the little x's by the letters A-G on the 'Measuring Distance' page to the right. If you don't know how to take a grid reference then Google 'using the national grid ordnance survey' or download a PDF from here:

<https://www.lupineadventure.co.uk/dofe-resources/#OSResources>

Grid Reference. Feature (or letter if using the map on the right) at the location.

.....
.....
.....
.....
.....
.....
.....

Navigation: Measuring distance



Each grey and white box is 100m

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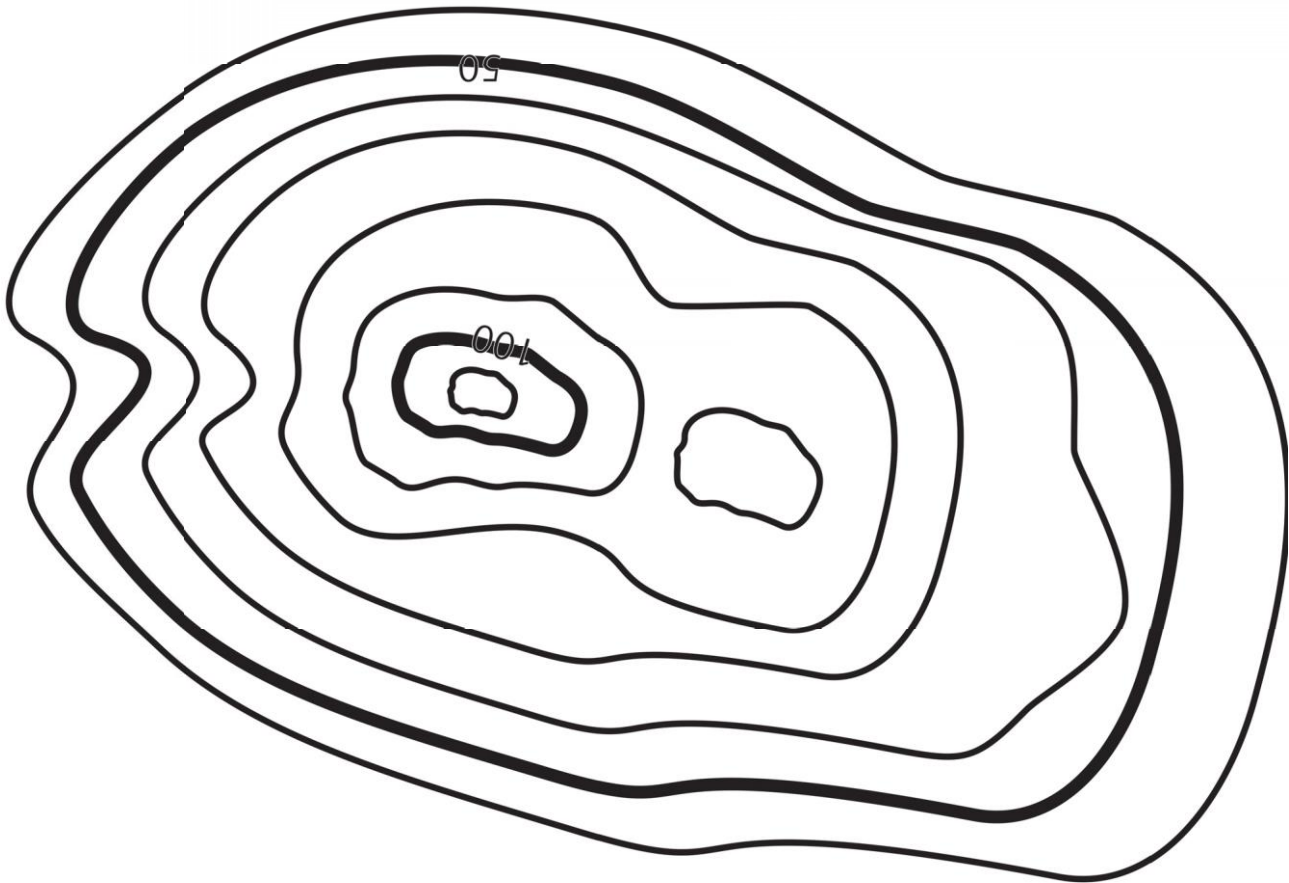
If the above map is printed to scale on an A4 sheet then it will be at a scale of 1:25000. If this has happened then each box will be 4cm square which represents 1km on the ground. If it is not to scale then please assume that one grid square is still 1km square.

On the above map measure the distances in KM between the points listed below following the paths. You might want to use a piece of string or the edge of a sheet of paper to measure round bends in the paths. Once you have done the height climbed exercises later in the book come back and work out how long each leg would take you. If you don't know how fast you walk with a full pack assume 3km / hour.

Leg	Distance	Time
B-C		
A-F		

Leg	Distance	Time
A-G		
D-G		

Navigation: Contours Lines



The diagram above represents a hill with two peaks, using contour lines, similar to the one shown in 3D on the right.

1) Identify the following points on the diagram.

- A) The highest point.
- B) The place there is most likely to be a stream.
- C) The steepest point.
- D) The flattest point.

2) How high is the right hand peak?

3) Why are the numbered contours thicker?

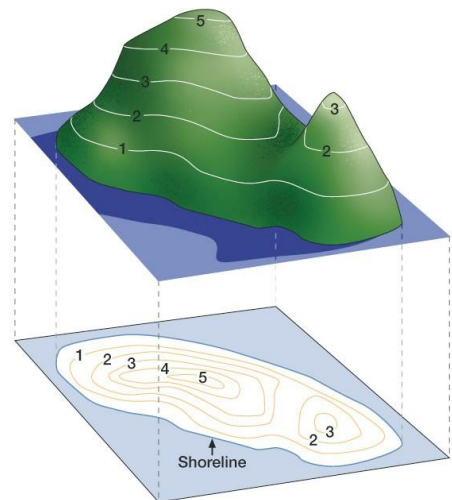
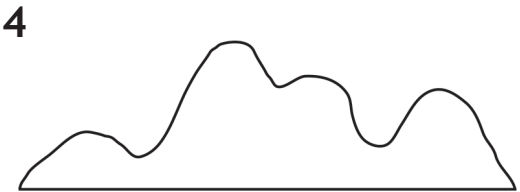
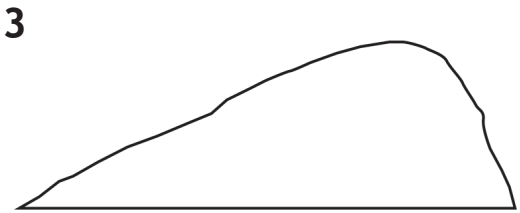
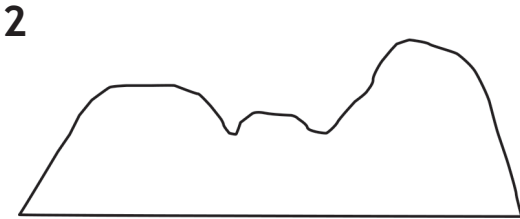
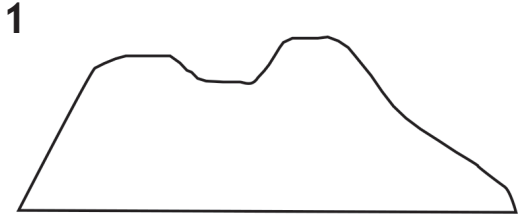
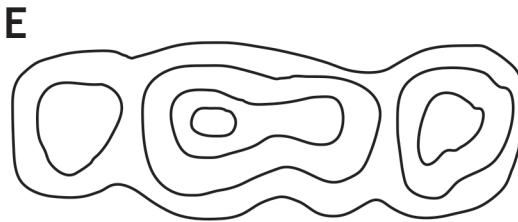
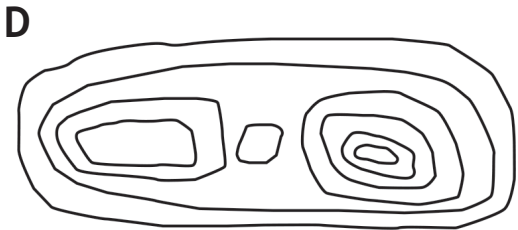
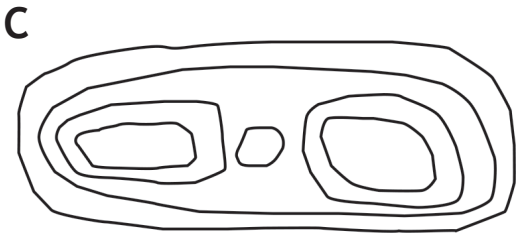
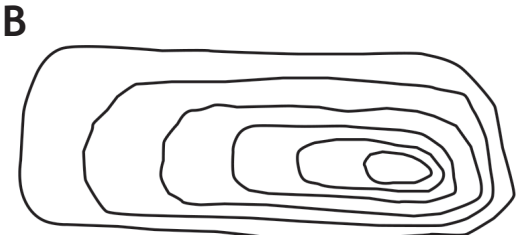


Illustration from 'Hill Walking' © MLTK UK VG 2003

Navigation: Contour Lines

Match the shape of the hill shown by contours lines on the left with the best match profile on the right

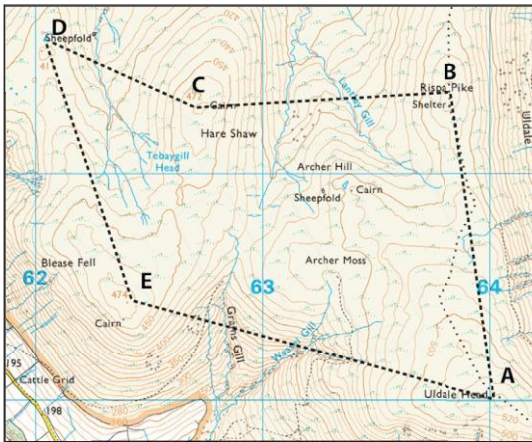


A B C D E

Navigation: Advanced Contour Lines

These next exercises are advanced. If you can do the first exercise and get 4 factors in the second one then your theoretical understanding of contours is probably above that necessary for a gold expedition!

Find the start point

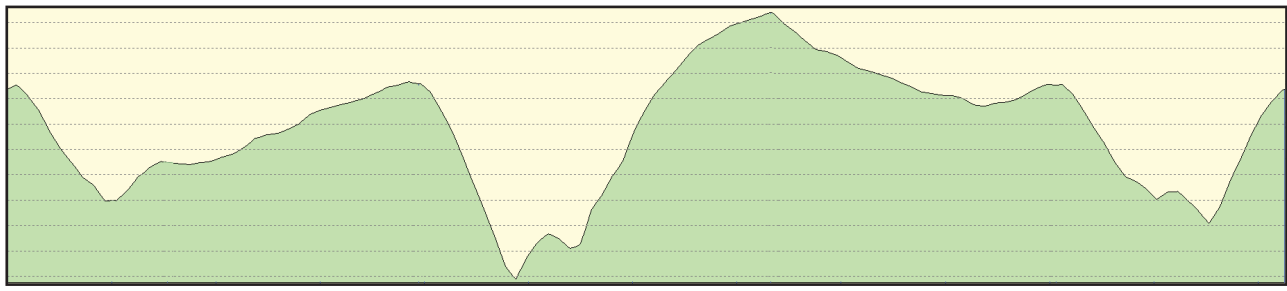


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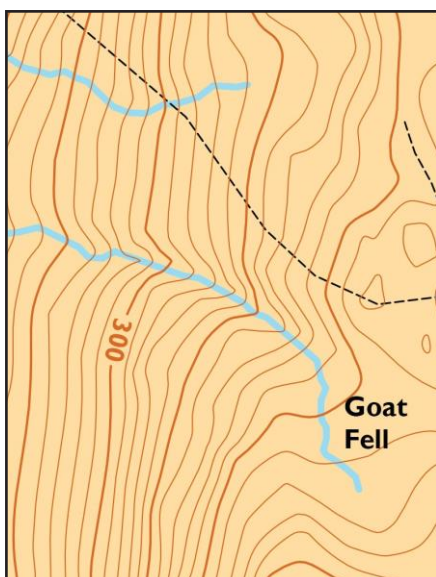
Looking at the elevation profile (below) of the circular walk shown on the left. Determine at which letter the walk starts and ends.

Start / End point is

Is the walk clockwise or anti-clockwise?
.....



Which way is up?



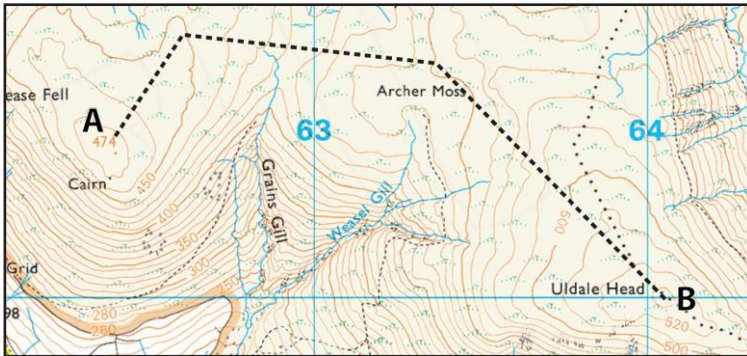
On the map to the left is the top of the hill on the left or the right of the map segment?
.....

I can see 4 features that indicate which side the top of the hill is on. How many can you identify?

- 1)
- 2)
- 3)
- 4)

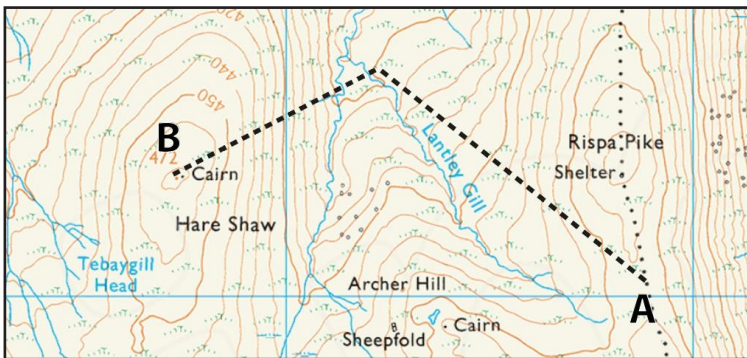
Navigation: Height Climbed

Map A



When planning a route we need to work out the height climbed on each leg. We do this to calculate the extra time we need to add for the hill climb (usually about 1 minute per 10 meters climbed).

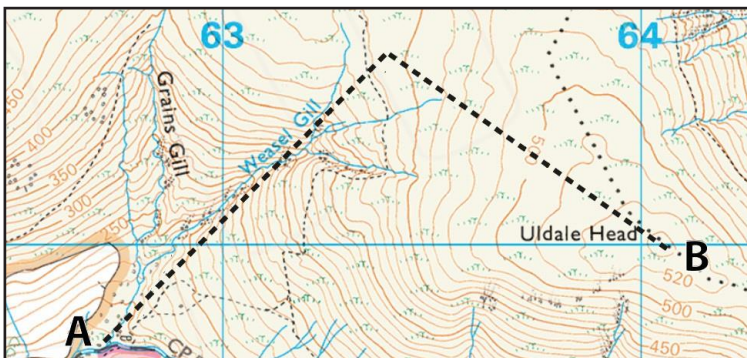
Map B



When working this out we usually disregard any down hill sections as they don't usually add or subtract time over the course of a leg.

What is the total height climbed walking from A-B on each map.

Map C



In all cases assume a 10 meter contour interval where no height information is shown.











- Map A
- Map B.....
- Map C.....

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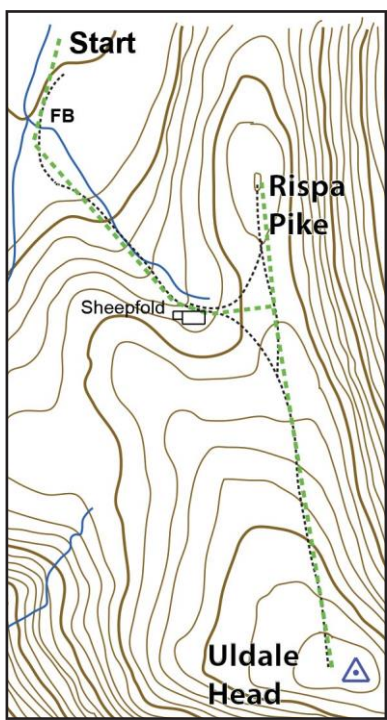
Don't forget to return to the measuring distance exercise on page 3 to complete the time taken for each leg that you measured earlier.

Navigation: Map symbols

On the grid below name the symbol or draw the named symbol then write down why it may be especially useful on an expedition for identifying where you are.

		What is it?	Why is it useful for location identification
1		.....	..... .....
2		.....	..... .....
3		Coniferous trees	..........
4		Mast	..........
5		.....	..... .....
6		.....	..... .....
7		.....	..... .....
8		.....	..... .....
9		.....	..... .....
10		Camp Site	..........

Navigation: Tick features



Mapping generated from <https://www.openstreetmap.org>

When navigating a leg we follow ‘handrails’ (usually rights of way but it could be linear features or even a compass bearing). As we walk we pass tick features that we have identified from the map to update us on how far along the handrail we have travelled.

Imagine that you are walking from the start point at the top of the map on the left to the top of Uldale Head using the path or right of way shown as a handrail.

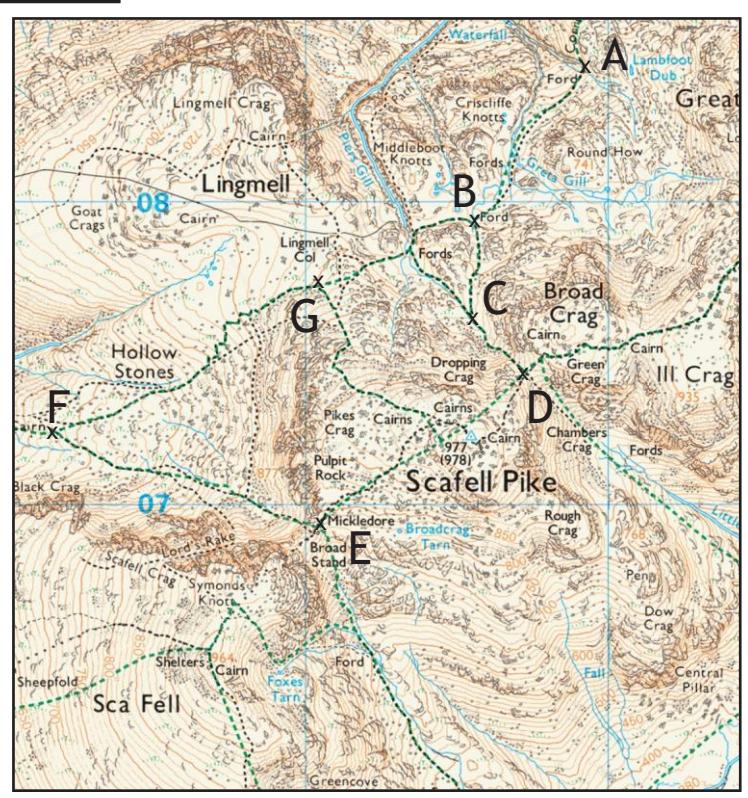
Identify 4 tick features and give each a mark out of 5 for quality. If you think you will definitely know where you are when you get there give it a 5 if you almost certainly won’t notice it give it a 1, give a reason for your score.

- 1)
- 2)
- 3)
- 4)

Navigation: Taking Bearings

Work out the bearing between the different points shown below. First make a guess and then use your compass (or a protractor) to get an accurate reading.

	Guess	Reading
A-B	210 °	_____
B-C	_____	_____
C-D	_____	_____
D-E	_____	_____
E-F	_____	_____
F-G	_____	_____



Navigation: Relocation Strategies

If you get lost then you will need to relocate.
The following are all relocation strategies. Think about the advantages or disadvantages of each and put them in the order that you think that you would try them if you were lost.

- a) Take a bearing down a linear feature (e.g. your bit of path, a wall or a ridge line) and see if you can find a feature of about the right length running on that bearing on your map.

- b) Think back to where you last **knew** where you were then think what you have passed since. Look at the map and see if you can work out where you might be

- c) Look around you. Note what features you can see that you could get to in 30 seconds. Look at the rough area that you are in on your map and see if you can see those features and piece together where you are. If this fails then repeat for features that you could get to within 5 minutes.

- d) Walk back to where you last knew where you were until you know where you are again.

- e) Walk a short distance (maybe to a slightly higher point) to get a better (or just different) view of your surroundings, then repeat task c.

I would try those 5 tasks in the following order.
.....

On Expedition: Hazards

Identify 5 hazards in each category. In each category place an 'L' next to the one that is most likely and an 'S' next to the one that is most serious.

People and animals	Weather	Terrain	Other
.....
.....
.....
.....
.....

On Expedition: Hazards and Risk

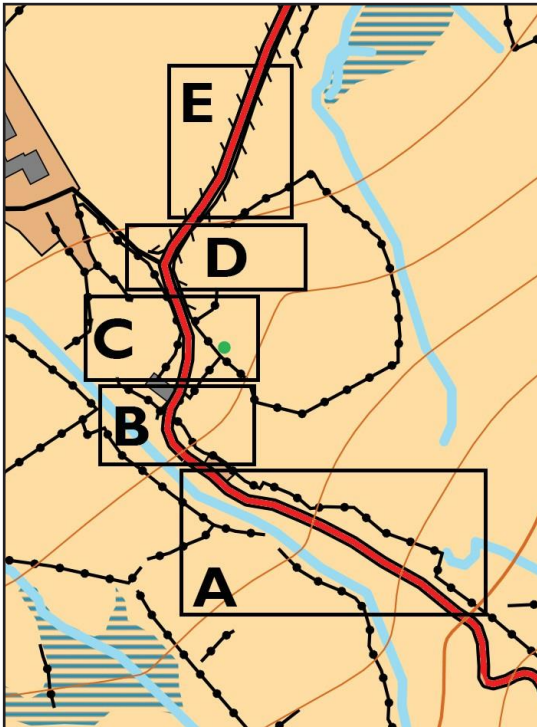
When we have identified hazards we then need to assess the risk that is associated with that hazard. Then, unless the risk is very unlikely or very low in severity, we need to think of 'control measures' that will minimise the risk to an acceptable level.

For each of the 8 hazards that you have identified in the previous exercise as either most serious or likely write down the **Hazard**, the **Risk** associated with that hazard and any **Control Measures** that you can put in place to minimise the risk.

Hazard	Risk	Control measures
Rain	Hypothermia Slipping up on wet ground	Waterproof clothing Shoes with sufficient tread for grip

On Expedition: Road Safety

Mapping generated from <https://oomap.co.uk/>



Walking on roads sometimes necessary on a DofE expedition but can be a major hazard. If there is no pavement then generally, you walk on the right hand side of the road so that you are facing oncoming traffic. You must also walk in single file and have your wits about you. Before walking on the road the navigator(s) should brief the team on the duration of the road walk and the key tick features on the way before the team head off.

Which side of the road would you walk on in the 5 areas shown on the map on the 3 different types of road shown below. L=Left R=Right.

Road 1) A)..... B) C) D) E)

Road 2) A)..... B) C) D) E)

Road 3) A)..... B) C) D) E)

Road 1

Road 2

Road 3



What are the differences in your answers and why?

.....

.....

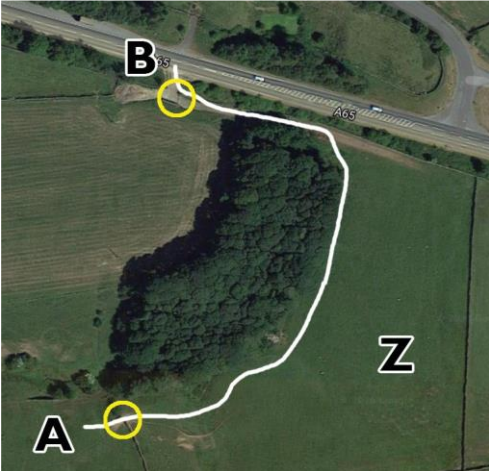
.....

Crossing a busy road can be a major hazard and should be avoided if at all possible. If you do need to cross a busy road then when route planning:

- 1) Consider which path to take to the road (there will probably be multiple options).
- 2) Check out the road crossings on Google Street View to see which one seems safest.
- 3) Ask your supervisor if they know the area and have any information that might help.

When on your expedition consider crossing the road in pairs or threes as a maximum with everyone else standing well back, even in towns and villages. If you line up 7 abreast then the people in the middle can't see either way and the people at each end can only see clearly one way.

On Expedition: The Countryside Code



Your route goes from A - B on the white line.
 There are gates at the yellow circles at points A and B, both gates are open.
 There are lots of sheep in field A and a few sheep in field Z.
 There is no one else around.

As you go through each gate do you leave them open, or close them. Write down Open or Closed for each gate and explain your decision.

A B

Explanation:

Is it OK to leave banana skins and orange peel in a bush after lunch?
 Yes or NO Explain your answer.....

Give 2 reasons as to why is it not OK to climb over walls or fences.
 1)
 2)

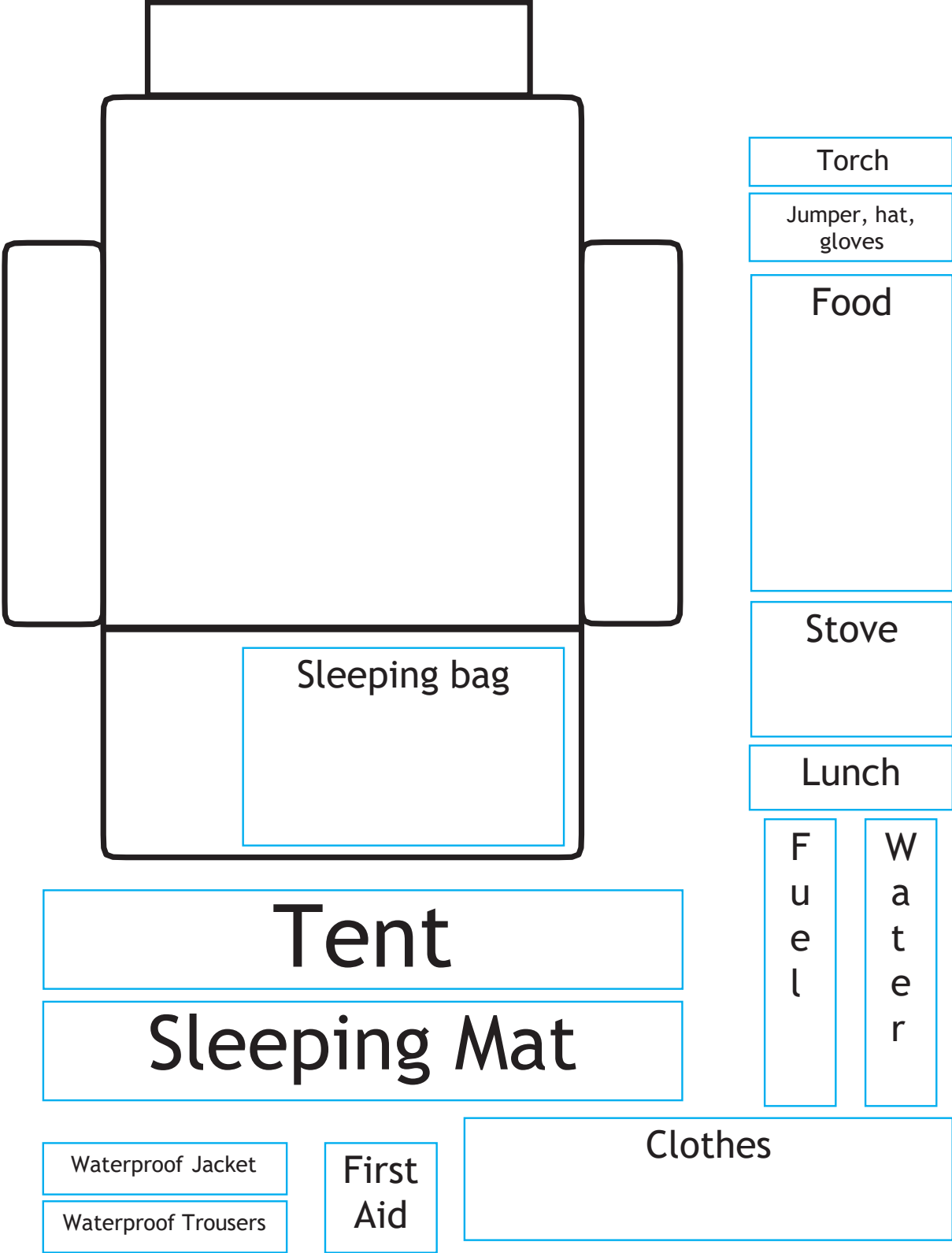
Discuss what you as an individual or as a team might consider to minimise erosion in different environments when on your expedition.

**Food:
Expedition Menu Plan**

	Breakfast	Lunch	Dinner
Day 1			
Day 2			
Day 3			Gold Only
Day 4	Gold Only	Gold Only	X

Equipment: Packing a Rucksack

Below is a representation of a rucksack with top & 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.



Equipment: Quiz

It is important that your equipment is protected from rain. Rate the following 4 methods of keeping your kit dry out of 5 and give advantages and disadvantages for each.

Rating	Method	Advantage	Disadvantage
	Using the rain cover on your rucksack		
	Putting a big heavy duty bin bag inside your rucksack		
	Putting everything in small waterproof bags inside your rucksack		
	Buying a waterproof rucksack		

Why is it a good idea to put your sleeping bag at the bottom of your rucksack?

.....

Why are synthetic fabrics in clothing like t-shirts better than cotton?

.....

What luxury are you considering taking on your expedition and why?

.....

What is the most important factor in your footwear selection and why?

.....

What type of stove are you going to use?

Name 3 things that you need to ensure for safe operation of the stove, and why?

1)

2)

3)

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

Personal kit

Req	Pkd	
		Walking socks
		T-Shirts (synthetic, technical T-shirts are best)
		Walking trousers (synthetic tracksuit trousers or leggings)
		Warm layer (jumper, fleece pullover or jacket)
		Underwear
		Pair of gloves
		Warm hat
		Sun hat
		Sun cream
		Personal medication & small first aid kit
		Watch
		Whistle
		Torch
		Spare batteries / or spare torch
		Notebook and pen / pencil
		Mobile phone (Check with your supervisor)
		Water bottle
		Food
		Emergency food rations
		Cutlery, bowl and mug
		Lighter / matches
		Small wash kit
		Towel
		Small amount of money for emergencies
		Toilet paper, dog poo bags & period products

Personal kit, continued ...

Req	Pkd	
		Rucksack (65 litre capacity as a maximum)
		Sleeping mat
		Sleeping bag
		Sleeping bag liner (optional)
		Waterproof jacket
		Waterproof over trousers
		Pair of walking boots
		Trainers/flip-flops (optional)
		Small repair kit (gaffer tape, cable ties)
		Strong plastic bags / Bin liners (to line rucksack)

Group kit

Req	Pkd	
		Tents
		Cooking stove
		Fuel for stove
		Group first aid kit
		Maps
		Compasses
		Survival bag
		Tea towel
		Washing-up liquid
		Pan scourer / J-cloths
		Plastic bags (for rubbish)
		Small trowel



DofE Rules: Expedition Team Goal

Our expedition Team Goal is.....

.....

.....

.....

	Work to do	Who is doing it
Pre Expedition		
On Expedition		
Post Expedition		
Presentation		

First Aid and Emergencies: First Aid

For each of the following eventualities please list 2 things that you could do to treat or prevent the condition and 2 things that are commonly done but you should not do.

Blisters

Do do this	Don't do this

Burns

Do do this	Don't do this

Sprained or broken ankle

Do do this	Don't do this

Hypothermia

Do do this	Don't do this

Home sickness or otherwise low morale

Do do this	Don't do this

Tick bite

Do do this	Don't do this

Self evaluation 1 - Before your practice

This booklet covers topics in varying amounts of detail. If you are embarking on a bronze expedition then some of it's contents may be set at a level higher than is necessary for your expedition. Rate your skills for each of the following areas. 1=no understanding 5=very confident and I could explain this to others. Don't worry if you score lots of 1's or 2's.

Fill this in before your practice expedition or outside training if you are not doing a practice at Bronze. This will tell you what you need to focus on on your practice or outside training sessions.

Navigation

- Understand what the scale 1:25000 means
- Identify advantages and disadvantages of different map scales
- Read a grid reference from the map
- Measure a distance on a map and convert it to KM
- Understand the concept of contour lines
- Identify the difference between a valley and a spur (also known as a ridge)
- Has methods of determining if a hill is going up or down from the pattern of unnumbered contour lines.
- Has an appreciation for the steepness of a hill by looking at the pattern of contour lines
- Calculate height climbed on a leg
- Calculate how long a leg will take to walk
- Identify a wide variety of mapping symbols that are useful for your mode of transport
- Able to form a strategy for a leg
- Identify where North is on the map
- Able to accurately guess a bearing
- Able to even more accurately measure a bearing
- Able to use a compass to follow that bearing
- Aware of a number of relocation strategies
- Able to select an appropriate relocation strategy

On Expedition

- Can identify likely hazards on a route
- Can assess the risk from identified hazards
- Can think of ways to mitigate risk if appropriate
- Has a strategy for crossing busy roads

- Has a strategy for walking on roads with no pavements
- Know the countryside code and why it is important
- Can select a good camping spot

Equipment

- Can select appropriate clothing for the expedition
- Know what you are going to take on expedition
- Has all the kit required
- Understands the importance of waterproofing contents of bag
- Can adjust your rucksack and can put it on safely
- Know how to safely use your stove
- Has experience of cooking on your stove
- Has planned a menu for the expedition
- Can pitch, strike and look after your tent

DofE rules

- Has seen requirements of the expedition and understands what they need to do to succeed
- They have a Team Goal for the assessed expedition and a plan for work to do in advance
- Know how you are going to arrange your presentation after the expedition

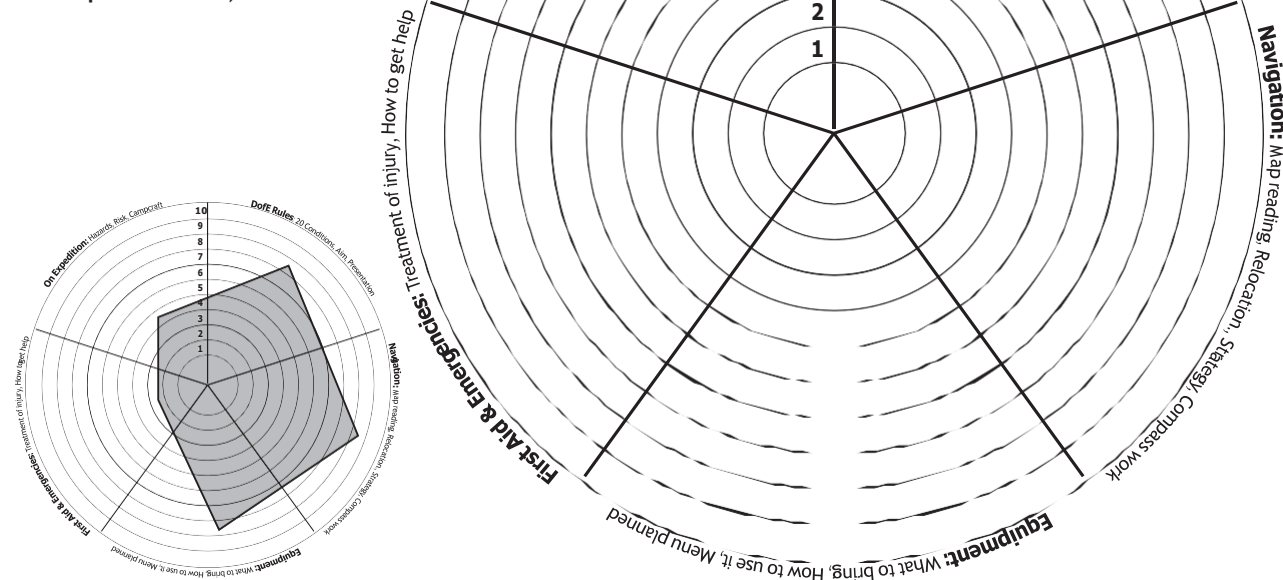
First Aid and Emergencies

- Has a knowledge of expected first aid incidents and how to prevent and treat them
- Knows how to summon help in remote places
- Knows how to remove a tick and is aware of symptoms of Lyme Disease to look out for in coming weeks

Self evaluation 1 - Before your practice

Coaching Wheel

In each of the broad categories rate yourself out of 10 to identify the area that you need to do most work in. (See example below)



Action planning: What to work on on your practice

What do you want to work on?	Why is it important to develop this area?	How can you make changes?	Who and What can help you develop this area?	When will you reach your goal (how will you know you're there)?

Self evaluation 2 - After your practice

Fill in this self evaluation sheet after all your training and practices, a couple of weeks before your assessed expedition. It may be that you still score some 1's and 2's. If you do then ask your supervisor if you need to improve on those topics for your DofE level and expedition venue.

While ideally you will score highly on all necessary areas for your level and expedition venue remember it is a team effort. You could compare scores with someone in your team and help each other out.

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First Aid and Emergencies

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Action Planning: Between practice and assessed

You can fill in the coaching wheel again in a different colour to show how things have changed since before your practice then come here and fill in an action plan of what to work on between now and your assessed expedition

When will you reach your goal (how will you know you're there)?					
Who and What can help you develop this area?					
How can you make changes?					
Why is it important to develop this area?					
What do you want to work on?					

