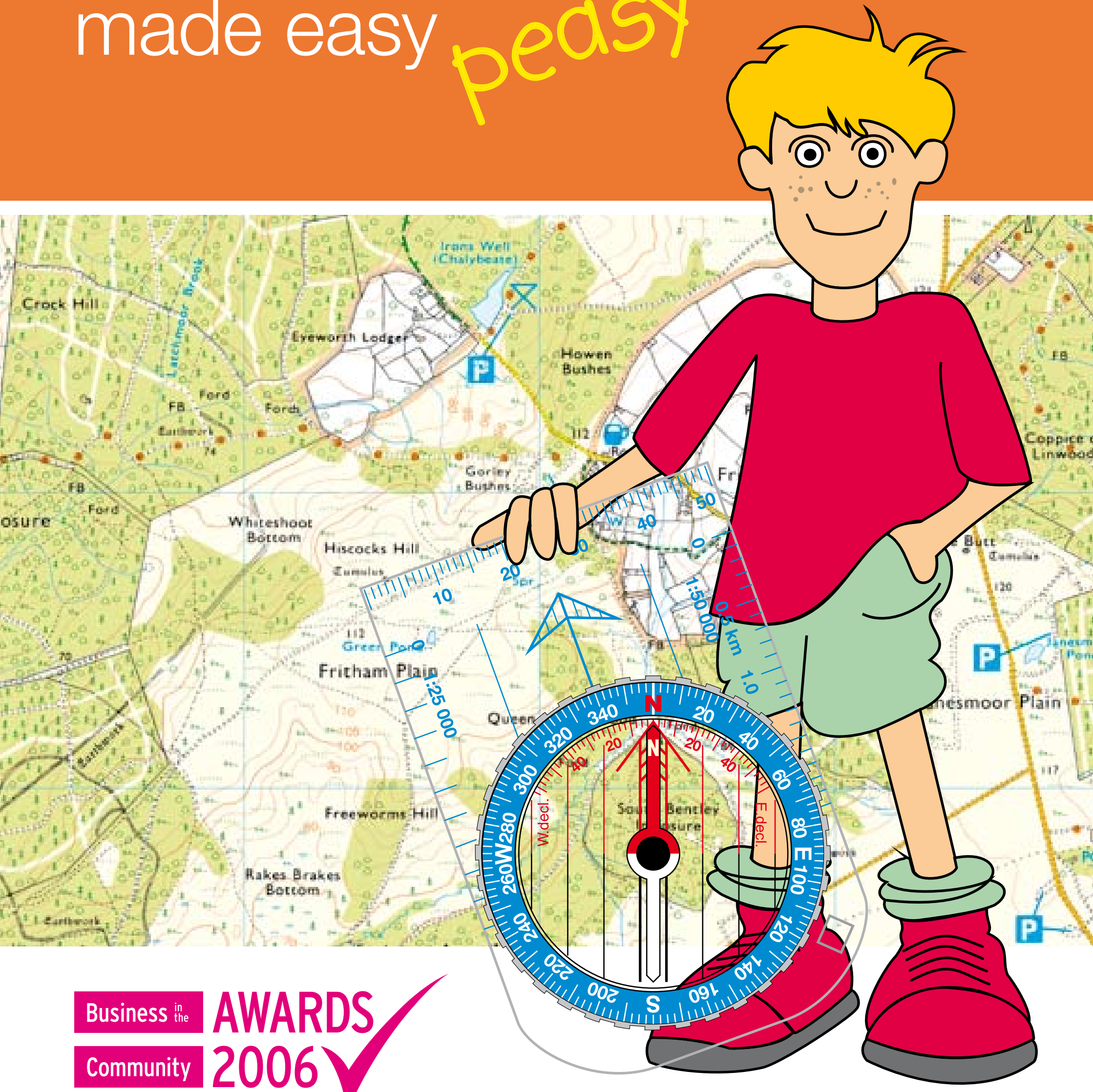
Ordnance Survey®

# Map reading made easy peasy



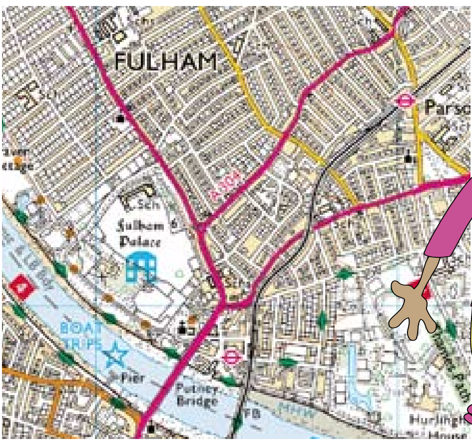

Business in the Community AWARDS 2006

## 1. What is a map?

A map is simply a drawing or picture (in 2-D) of a landscape or area of a country (in 3-D). It could be anything from a sketch map for a visitor to find your school to a detailed map of a town centre or mountain range.

Using a map you can visualise in your mind what the place looks like that you are going to, and you can see what landmarks and features you will pass on the way to your destination. Maps mean you know what to expect, and they help you to know you are going in the right direction to arrive at your destination safely and quickly.


Sketch map of a school




1:25 000 scale extract showing part of London


1:25 000 scale extract showing Snowdon, the highest mountain in Wales

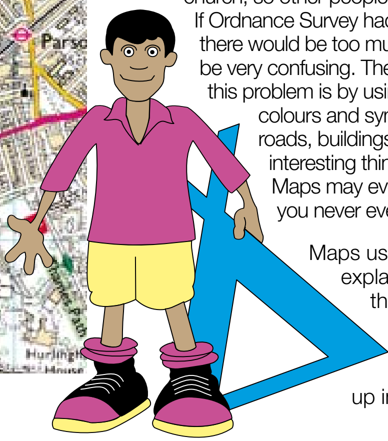
**Question**

Why not try drawing your own map to show a friend the route from your house to school, showing buildings and landmarks you pass on the way?

**Top Tip!**

Have a look at a 1:25 000 scale map to give you some ideas of what you could draw if you are slightly unsure.

## 2. What are all the different symbols?

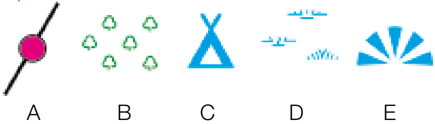


When drawing a map, you will find that you have to label lots of things you draw, such as a shop or a church, so other people can tell what they are. If Ordnance Survey had to do this on all maps there would be too much writing and it would be very confusing. The way we get around this problem is by using different shapes, colours and symbols to show all the roads, buildings and rivers and other interesting things in our landscape. Maps may even show you things you never even knew were there!

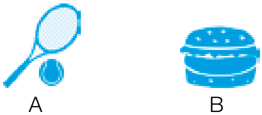
Maps usually have a key that explains the symbols and their meanings. If you find a symbol on the map that you don't know, simply look it up in the key.

**Question**

2a. Have a look at the key on a 1:25 000 scale map and see if you can find out what these symbols mean.




2b. You can invent your own symbols for things on your own sketch map. Here are two ideas; can you guess what they are?



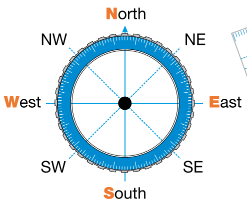

**Top Tip!**

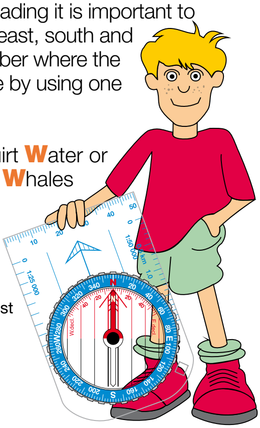
Get your friends and family to test you on how well you know the symbols. If you can learn them, then map reading is easy.

## 3. Which direction am I going?

Just as it is important to know which is your left and your right hand, in map reading it is important to understand where north, east, south and west are. You can remember where the points of the compass are by using one of these rhymes:

**N**aughty **E**lephants **S**quirt **W**ater or
**N**obody **E**ver **S**wallows **W**hales



If you are walking in a direction half way between two of the points of a compass, you can say you are heading north-east, south-east, south-west or north-west, depending on the direction.

**Top Tip!**

Ordnance Survey maps are always printed so that **north** is at the top of the sheet.

**Question**

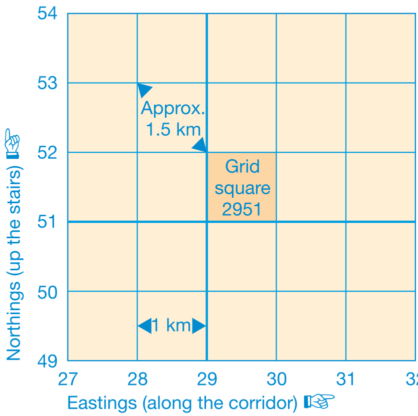
Using the 1:25 000 scale Bembridge OS Explorer® Map extract on page 7 of this booklet can you answer these questions?

3a. Which general direction are you heading if you are walking from point 1 to point 2?
3b. Which general direction are you heading if you are walking from point 2 to point 3?
3c. Which general direction are you heading if you are walking from point 3 to point 1?

## 4. How do grid references help me to find places?

You might have noticed by now that a 1:25 000 scale Ordnance Survey map is covered in a series of blue grid lines. These grid lines help you to pinpoint an exact location anywhere on the map by giving a unique number known as a grid reference. The vertical lines are called eastings, since they increase in value as you travel east on the map. The horizontal lines are called northings, since they increase in value as you travel north on the map.

### Four-figure grid references




A four-figure grid reference is a handy way of identifying any square on a map. Grid references are easy if you can remember that you always have to go along the corridor before you go up the stairs. To find the number of a square first use the eastings to go along the corridor until you come to the bottom left-hand corner of the square you want. Write this two-figure number down. Then use the northing to go up the stairs until you find the same corner. Put this two-figure number after your first one and you now have the four-figure grid reference, which looks like this: **2951**

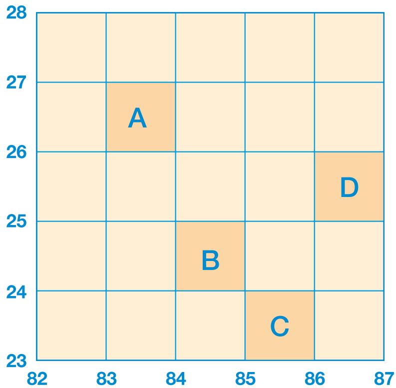
**Top Tip!**

Always remember: *Along the corridor and then up the stairs.*

**Question**

4a. Can you work out the four-figure grid references for the following examples?

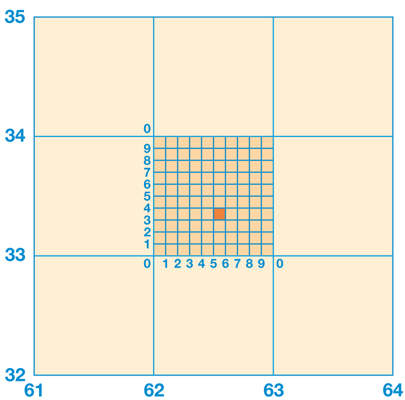
A .................. B .................. C ..................




Using the Bembridge OS Explorer Map extract on page 7 of this booklet, can you answer these questions?

4b. What is the name of the school in grid square 6486?
4c. What is the name of the named building in grid square 6488?
4d. What grid square is Black Rock found in?

**Six-figure grid references**



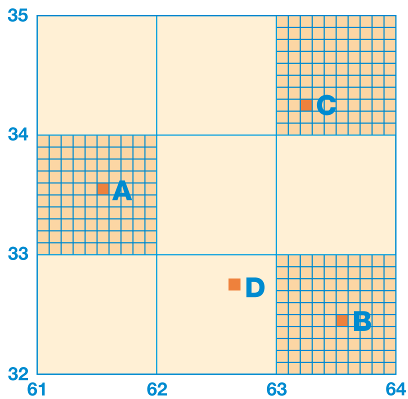

If you want to pinpoint an exact place on a map, such as your own house, you will need to use a six-figure grid reference. First find the four-figure grid reference for the square and write it down with a space after each set of numbers, like this: **62_ 33_**

Now imagine this square is divided up into 100 tiny squares with 10 squares along each side. Still remembering to go *along the corridor and up the stairs*, work out the extra numbers you need and put them into your four-figure grid reference like this: **625 333**

**Question**

4e. Can you work out the six-figure grid references for the following examples?

A .................. B .................. C ..................



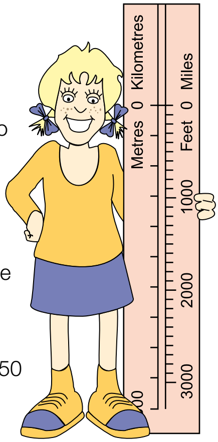

Using the Bembridge OS Explorer Map extract on page 7 of this booklet can you answer these questions?

4f. What is at grid reference 648876?
4g. What would you be doing at grid reference 644885?
4h. What building is to be found at grid reference 643882?

**Top Tip!**

When giving directions you can provide even more accuracy to your grid reference by stating a nearby landmark or feature. For example, *on the Bembridge Explorer extract on page 7 I am at grid reference 644874, at the crossroads.*

## 5. What is scale?




The scale of a map shows how much you would have to enlarge your map to get the actual size of the piece of land you are looking at. For example, your map has a scale of 1:25 000, which means that every 1 cm on the map represents 25 000 of those same units of measurement on the ground (for example, 25 000 cm = 250 metres).

That might sound a bit complicated, but Ordnance Survey maps have been designed to make understanding scale easy. Look at the front of a 1:25 000 scale map and you will see that the scale has been written out for you like this:

**4 cm to 1 km**

This means that every 4 cm on a map = 1 km in real life. To make it even easier, the grid lines are exactly 4 cm apart, so every square is 1 km by 1 km.

Maps are made at different scales for different purposes. The 1:25 000 scale map is very useful for walking, but if you use it in a car you will quickly drive off the edge! On the other hand, maps at 1:250 000 scale (note the extra zero) show lots more land but in far less detail.

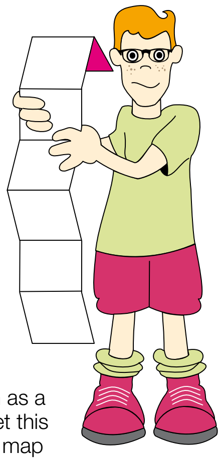

1:25 000 scale Explorer extract


1: 250 000 scale OS Travel Map – Road extract

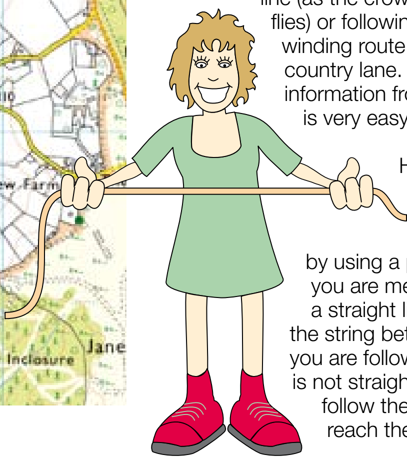
**Question**

5. Is a 1:250 000 scale map useful for walking or driving?

## 6. How do we measure distance?

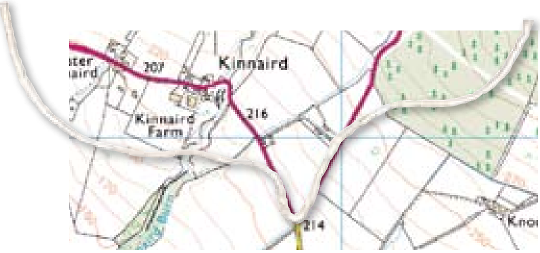


It is always important to know how far you have to travel and how long it is going to take you. By measuring a distance on your map, you can work out how far that is in reality. You can measure this distance either in a straight line (as the crow flies) or following a winding route such as a country lane. To get this information from a map is very easy.



Here is a way of doing it:

You can measure between two points by using a piece of thin string. If you are measuring the distance in a straight line, then simply stretch the string between the two points. If you are following a road or track that is not straight, bend the string to follow the exact shape until you reach the second point.

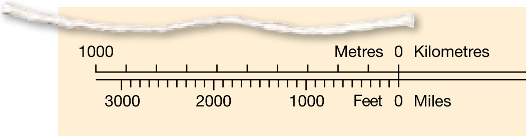



Measuring distance using string

Now that you have a distance in centimetres marked on your string you can find out the real distance. You can do this in a couple of ways:

**By eye**

Place string against the scale bar on the map. This is usually at the foot of the map sheet.




**By measuring**

Measure your distance on your string with a ruler.

Suppose your string is 10 cms long. You know that 4 cm = 1 km, so the answer is 2.5 km.

Have a go at measuring the distances in the questions below using the Bembridge Explorer extract on page 7 of this booklet.

**Question**

6a. How far is it in a straight line on the ground from point 1 to point 2?
6b. How far is it to walk along the road from point 4 (IRB Sta) to point 5 (PO)?
6c. Can you work out how long it would take you to walk both these distances?

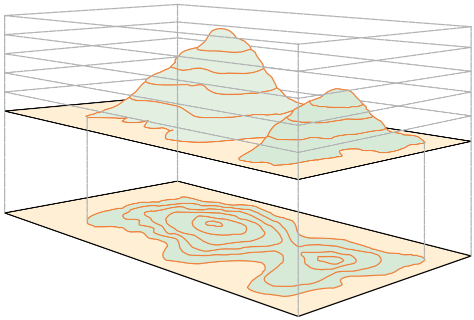
(Most people walk at 3 km per hour, so it will take 20 minutes to walk in a straight line across a 1 km grid square.)

**Top Tip!**

Remember that the grid lines on a 1:25 000 scale map are 1 km apart. A quick way of estimating distance is to count each square you cross in a straight line. If going diagonally the distance across the grid square is about 1½ km.

## 7. How are hills and mountains shown on a map?

The ability to understand the shape of the ground from a map is a useful skill to learn, particularly in mountainous landscapes. The height and shape of the ground is shown on 1:25 000 scale maps by brown contour lines. A contour is a line drawn on a map that joins points of equal height above sea level. For 1:25 000 scale maps the interval between contours is usually 5 metres, although in mountainous regions it may well be 10 metres.

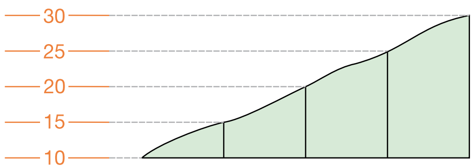


The above diagram shows the link between the shape of a hill and the contours representing it on a map. Another way of thinking about contour lines is as a tide mark left by the sea as the tide goes out, leaving a line every 5 metres.

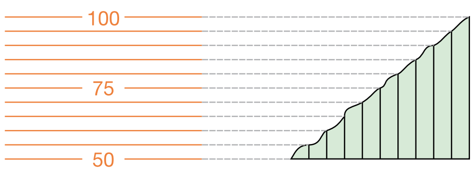
**Top Tip!**

Remember contour numbering reads up hill – in other words the top of the number is uphill and the bottom is downhill.

Also remember the closer contour lines are together, the steeper the slope. The examples below illustrate this:




Shallow slope




Steep slope

## Question

Try this quick contour quiz using the Bembridge OS Explorer Map extract below.

7a. What type of slope is at the point where the parking symbol is on the map in grid square 6385? Is it a shallow slope or a steep slope?

7b. If you are walking from point 2 to point 5 in a straight line, is it uphill or downhill?


Extract from OS Explorer Map 29 of Bembridge (1:25 000 scale)

Maps can be great fun – and they can lead you to all sorts of discoveries. They can help you get to know an area really well, because they pinpoint interesting places that are often hidden away, which you might otherwise never find. They can also help you find different routes to places you already know.

To be sure you are not missing anything important you need to know about map symbols, scale, direction and distance. Knowing about these will help you unlock the secrets of maps. This leaflet explains the main things you need to understand, especially when using Ordnance Survey Explorer maps at 1:25 000 scale.

Maps can also help you in your geography, history, environmental science or citizenship classes – but they can provide entertainment, too. Find out how by discovering the games, quizzes and competitions featured on the web at www.ordnancesurvey.co.uk/mapzone.

Happy exploring!

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**Answers to questions**

**2a.** A. Railway station. B. Orchard. C. Camp site. D. Marsh, reeds or saltings. E. Viewpoint. **2b.** A. Sport. B. Burger bar. **3a.** North. **3b.** East. **3c.** South-west. **4a.** A. 8326. B. 8424. C. 8523. **4b.** Bembridge School. **4c.** East Cliff. **4d.** 6486. **4e.** A. 615335. B. 635324. C. 632341. **4f.** School. **4g.** Horse riding. **4h.** Place of worship – with spire, minaret or dome. **5.** Driving. **6a.** 1 180 metres or 1.18 km. **6b.** 1 250 metres or 1.25 km. **6c.** Points 1 to 2 = 24 minutes approximately; points 4 to 5 = 25 minutes approximately. **7a.** It is a steep slope. **7b.** Uphill.