

Using the National Grid

1 The National Grid provides a unique reference system, which can be applied to all Ordnance Survey maps of Great Britain, at all scales.

2 Great Britain is covered by 100 kilometre grid squares, each grid square is identified by two letters, as shown in **diagram A**.

3 On Ordnance Survey maps these squares are further divided into smaller squares by grid lines representing 10 kilometre spacing, each numbered from 0 to 9 from the south-west corner, in an easterly (left to right) and northerly (upwards) direction, as shown in **diagram B**.

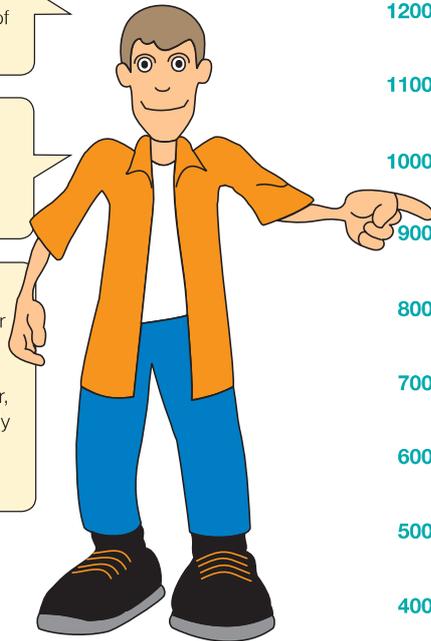


Diagram A

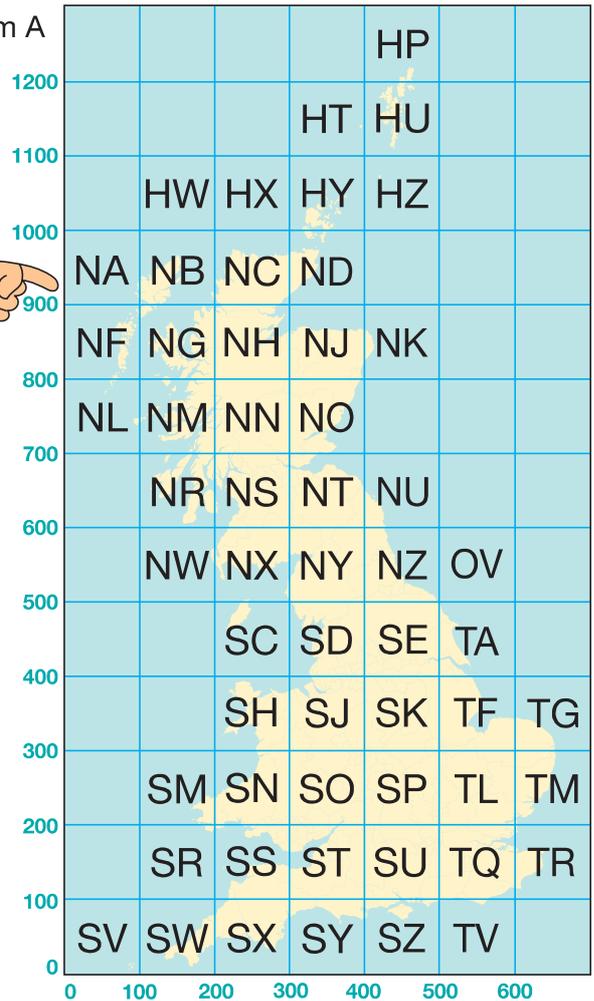
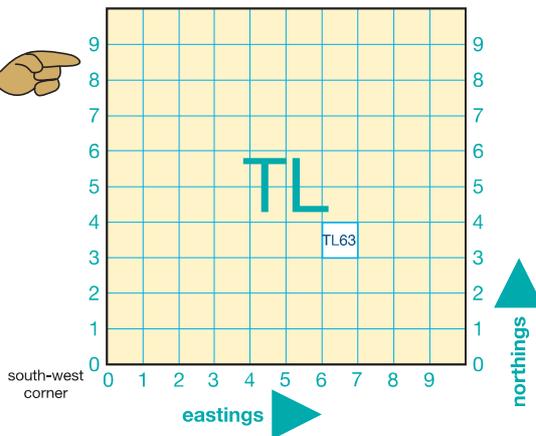


Diagram B



4 Using this system you can identify a 10 kilometre grid square. For example, here is TL63. After the letters you quote the **eastings** (6) first, then the **northings** (3). If you have trouble remembering, say...

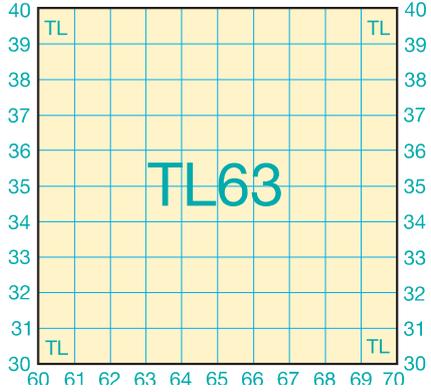
Along the hall, THEN Up the Stairs



5 On OS Landranger Maps you can find the two grid letters TL on the legend, or on the corner of the map, and the grid has been further divided into 1 kilometre intervals, as shown in **diagram C**. You can estimate distances between the grid lines to give a more precise reference.

6 Turn the page and see how easy it is to use a 6-figure grid reference to pinpoint a place on the map...

Diagram C



Using the National Grid continued

The 6-figure grid reference

7 The 6-figure grid reference is very useful to locate a particular place on a map.

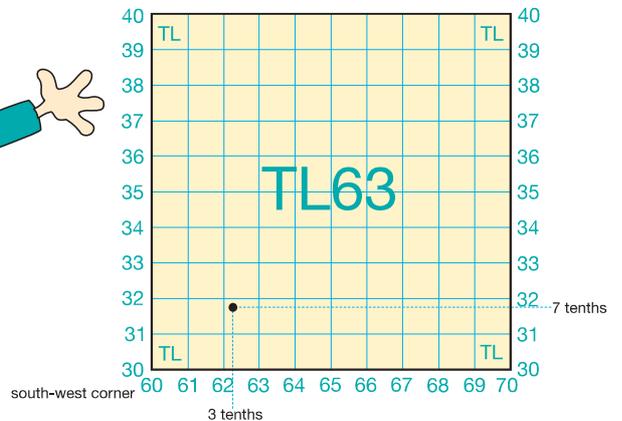
8 By estimating the eastings and northings to one tenth of the grid interval, you can specify a full 6-figure grid reference, accurate to within 100 metres on the ground.

9 All you do is estimate how many tenths away from the grid your point falls. For instance, the point in **diagram D** is 3 tenths east of grid 62 and 7 tenths north of grid 31.

10 Once again, reading from the south-west corner, quote all the eastings first, then the northings. The 100-metre grid reference of the point in the diagram is shown like this: TL 623317.



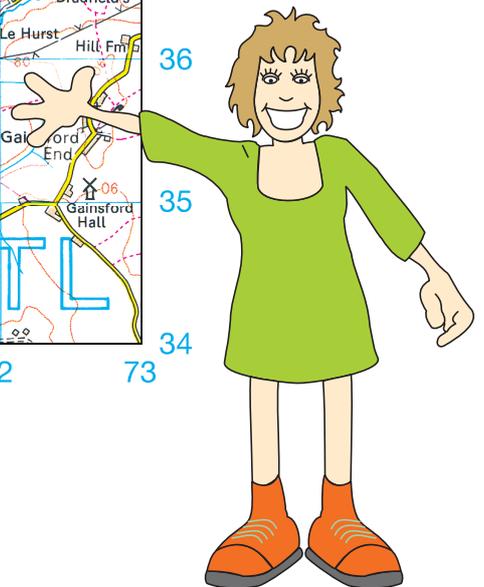
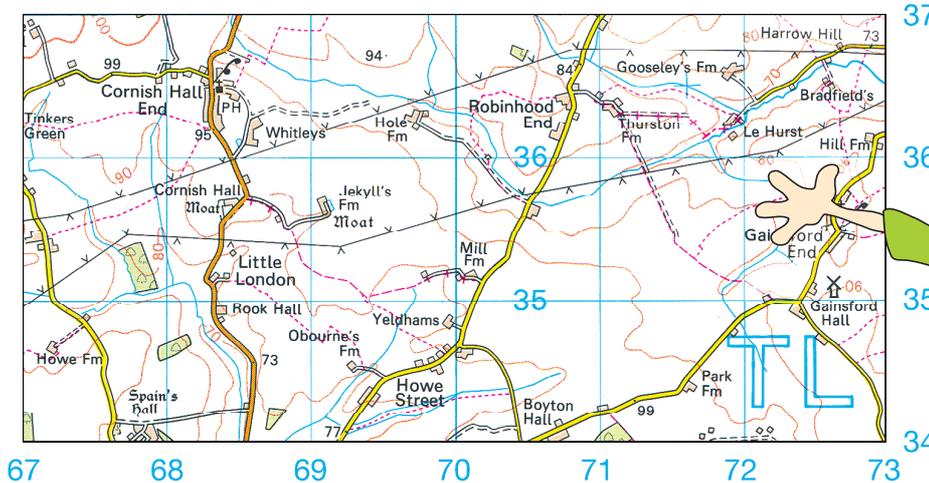
Diagram D



11 Here is an extract from a 1:50 000 scale map. Use the National Grid reference system to find:

- The Church at TL683365**
- The Windmill at TL726350**
- Mill Farm at TL701352**

Map extract from OS Landranger Map Sheet 154.



General enquiries: +44 (0)8456 05 05 05
 Textphone: +44 (0)23 8079 2906 (Deaf and hard of hearing users only please)

customerservices@ordnancesurvey.co.uk
www.ordnancesurvey.co.uk

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What if you are starting with a 12 or 13 digit Grid reference?



Say you have the grid reference for Mount Snowdon in North Wales

E260995,
N354376

Let's break it down into the 100km square elements

E260995, **N3**54376

So, we need square number 2 across and 3 up which is **SH**

Now we take the next two digits of the reference

E**260**995, N**354**376

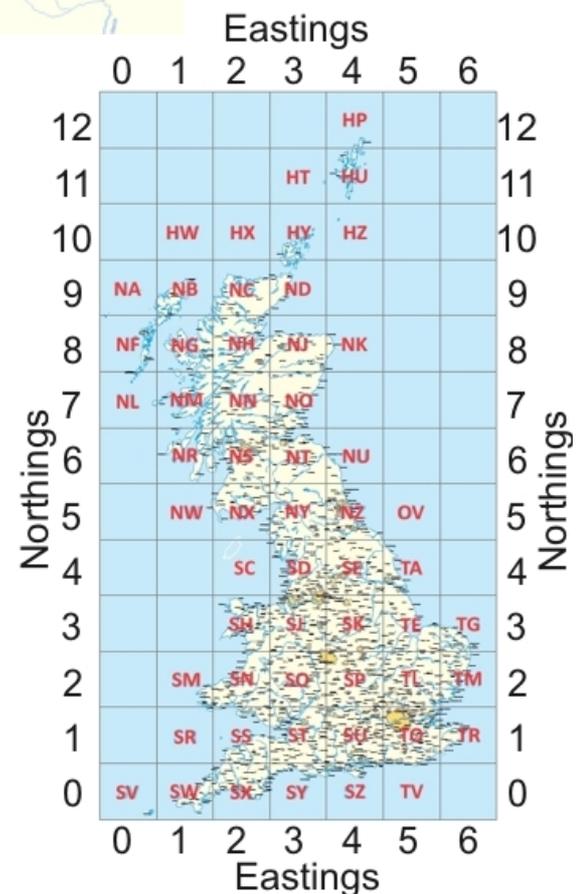
Which means that Mount Snowdon lies within a 1km square 60km East and 54km north of the lower left of square SH.

If we take the first digit in each of these pairs it tells us we are looking for a 10km square reference SH65.

Now let's look for the DTM data we need to cover this area.

Remember, the Land-Form PANORAMA DTM tiles are in 20x20km areas we know we need tile SH65 but because we're talking about 20kmx20km tiles they are in even numbers only, we actually want tile SH64 which covers coordinates E260000,N340000 to E280000,N360000

That means we need file SH64.ASC and we load this into LSS using 'Input / Convert from ESRI ASCII Grid'



As far as the OS StreetView imagery is concerned, these are supplied in 5kmx5km sized tiles, so within each PANORAMA tile there will be up to sixteen image files (though areas of open sea are not generally covered, so coastal areas will contain fewer image tiles). Therefore, in order to cover the entire PANORAMA DTM tile with images you need to select all images from the range SH64nn to SH65nn and SH74nn to SH75nn (each tile is labelled SW for South West, NW for North West, SE for South East, SW for South West).

Mount Snowdon will appear inside image number SH65SW and it will be E26**0995** metres from the left edge and N35**4376** metres up from the bottom edge.



In order to display these images in LSS you will need to choose 'Configure / DTM Display / Show bitmap image' and create an IPF (Image Position File), browse for the Bitmaps you wish to display (just the ones in the area you are interested in as they take a long time to process) and, assuming you have chosen the correct ones, they will start to display as a backdrop to your DTM.

See the Tutorials in this presentation on how to process the DTM and imagery data.