# KS3 Geography. Maps and navigation.

## Co-ordinates and grid references.

JOE CROWLEY: When you need to find out exactly where you are on a map you can use co-ordinates to pinpoint your location.

When we're out walking we use different types of co-ordinates depending on the situation we're in. They're especially useful when there are few obvious features to help you locate a place.

One set - called latitude and longitude - allows us to pinpoint exactly where we are anywhere in the world. Latitude indicates how far north or south you are. It's traditionally been measured in degrees, minutes and seconds - although decimals are sometimes used instead. The numbers are accompanied by either north or south depending on where you are relative to the equator, which is at zero degrees. Britain is north of the equator between about 50 and 60 degrees.

Longitude tells you your position relative to the prime meridian which runs through Greenwich in London. For this measurement again degrees, minutes and seconds - or decimals - are used and it's accompanied by east or west depending on which side of the prime meridian you are. Combine the two and you can pinpoint an exact location.

Latitude and longitude are often the default co-ordinates used by GPS devices and they're great for working out where you are on a global scale. But there's an alternative way that's usually employed when using an Ordnance Survey map.

Latitude and longitude are marked on this map but they're not always that easy to use. Instead, grid references can be much more useful.

If we're using a map then we usually use a grid reference which is six figures long preceded by two capital letters. An example would be the grid reference SD886872. But what does this mean?

Well the letters give us a very broad indication of where someone or something is. For mapping purposes the UK is divided into separate 100km squares. The letters in our co-ordinates tell us which one of these squares we're in. They can be found on the top of Ordnance Survey maps.

JOE CROWLEY: Each of these sections is then broken down into further 1km squares marked by blue lines on maps and referenced by numbers on the top of the map called eastings and on the side which are called northings. When we quote a grid reference eastings always come first. In our case we have 88 referring to a major blue line. Then we hone in using decimal places with the 6. So the line for 886 is six-tenths of the way from the line marked 88 towards the line marked 89.

We do a similar process with the northings. With our grid reference we go from the horizontal blue line marked 87 and travel two-tenths of the way towards 88. Our location is where the eastings and northings intersect.

A six-figure reference gives us our position within 100m. A GPS device typically uses a ten-figure reference, which narrows locations down to the nearest metre, although they're not always completely accurate.

So whether you're using a GPS device or you've arranged to meet someone at a particular point on a map knowing how to use co-ordinates can be essential.