

23. National Grids



The Transverse Mercator projection provides a basis for existing and proposed national grid systems in the United Kingdom and the United States.

In the U.K., topographic maps published by the [Ordnance Survey](#) refer to a national grid of 100 km squares, each of which is identified by a two-letter code. Positions within each grid square are specified in terms of eastings and northings between 0 and 100,000 meters. The U.K. national grid is a plane coordinate system that is based upon a Transverse Mercator projection whose central meridian is 2° West longitude, with standard meridians 180 km west and east of the central meridian. The grid is typically related to the Airy 1830 ellipsoid, a relationship known as the National Grid (OSGB36) datum. The corresponding UTM zones are 29 (central meridian 9° West) and 30 (central meridian 3° West). One of the advantages of the U.K. national grid over the global UTM coordinate system is that it eliminates the boundary between the two UTM zones.

A similar system has been proposed for the U.S. by the [Federal Geographic Data Committee](#). The proposed "U.S. National Grid" is the same as the Military Grid Reference System (MGRS), a worldwide grid that is very similar to the UTM system. As Phil and Julianna Muehrcke (1998, p.p. 229-230) write in the 4th edition of *Map Use*, "the military [specifically, the U.S. Department of Defense] aimed to minimize confusion when using long numerical [UTM] coordinates" by specifying UTM zones and sub-zones with letters instead of numbers. Like the UTM system, the MGRS consists of 60 zones, each spanning 6° longitude. Each UTM zone is subdivided into 19 MGRS quadrangles of 8° latitude and one (quadrangle from 72° to 84° North) of 12° latitude. The letters C through X are used to designate the grid cell rows from south to north. I and O are omitted to avoid confusion with numbers. [Wikipedia offers a good entry on the MGRS here.](#)

Try This!

Fun Demo of U.K. National Grid

A kids-friendly information sheet about the U.K. National Grid is published by the [U.K. Ordnance Survey](#). You can find it in the National Grid for Schools link on their website.

A less-kids-friendly video can be seen below:

The Nature of Geographic Information

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What is the National Grid?



The National Grid

[Click Here for Transcript of The National Grid Video](#)

Credit: Ordnance Survey



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