

Your Library Today



Mr. Breitsprecher's Edition

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Where Are You: Latitude & Longitude

So do you ever ask "Where am I?" Sounds like an easy question, and it is if you are just thinking about your home, school, or town. But what if you mean, "where am I located on the earth?"

Being able to create a system to identify anyplace on earth is more challenging than describing where you live on a street. But it isn't really hard. Thousands of years ago, the ancient Greeks created a system of using grids to identify places.

They created a system of horizontal and vertical lines. We can identify anyplace on the grid by identifying where lines cross.

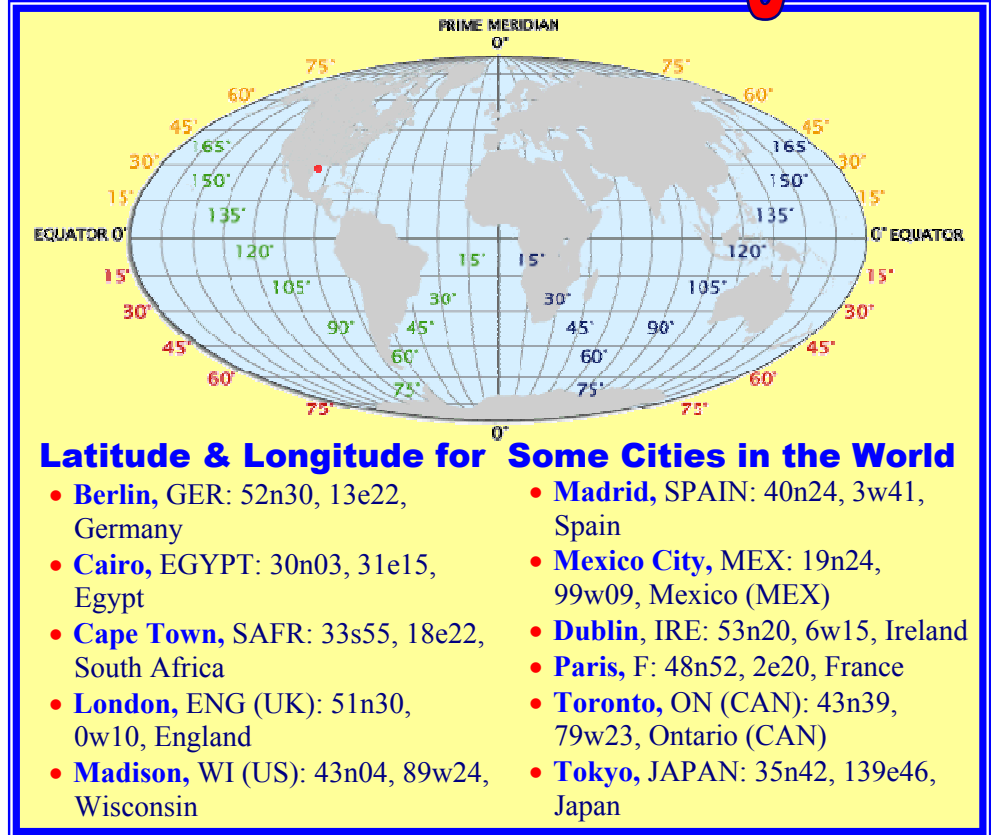
We do this by identifying points with coordinates.

Several hundred years ago, a system, lines of latitude and longitude was developed. This is a grid system that covers the entire globe. The system still uses coordinates to identify points where lines of latitude and longitude meet. We identify the points by using a unit of measure called a "degree". We write this as °.

Latitude

When looking at a map, latitude lines run horizontally. Latitude lines are also known as parallels since they are parallel and are an equal distant from each other. Each degree of latitude is approximately 69 miles (111 km) apart; there is a variation due to the fact that the earth is not a perfect sphere but an oblate ellipsoid (slightly egg-shaped).

To remember latitude, imagine them as the horizontal rungs of a ladder ("ladder-tude"). Degrees latitude are numbered from 0° to



Latitude & Longitude for Some Cities in the World

- **Berlin, GER:** 52n30, 13e22, Germany
- **Cairo, EGYPT:** 30n03, 31e15, Egypt
- **Cape Town, SAFR:** 33s55, 18e22, South Africa
- **London, ENG (UK):** 51n30, 0w10, England
- **Madison, WI (US):** 43n04, 89w24, Wisconsin
- **Madrid, SPAIN:** 40n24, 3w41, Spain
- **Mexico City, MEX:** 19n24, 99w09, Mexico (MEX)
- **Dublin, IRE:** 53n20, 6w15, Ireland
- **Paris, F:** 48n52, 2e20, France
- **Toronto, ON (CAN):** 43n39, 79w23, Ontario (CAN)
- **Tokyo, JAPAN:** 35n42, 139e46, Japan

90° north and south. Zero degrees is the equator, the imaginary line which divides our planet into the northern and southern hemispheres. 90° north is the North Pole and 90° south is the South Pole.

Longitude

The vertical longitude lines are also known as meridians. They converge at the poles and are widest at the equator (about 69 miles or 111 km apart). Zero degrees longitude is located at Greenwich, England (0°).

The degrees continue 180° east and 180° west where they meet and form the International Date Line in the Pacific Ocean. Greenwich, the site of the British Royal Greenwich Observatory, was established as the site of the Prime Meridian by an international conference in 1884.

Using Latitude and Longitude

We can precisely locate anyplace on earth. To do so, we probably need to break our degrees down (remember, they are each about 69 miles apart. We can identify smaller units, dividing the degrees longitude and latitude into minutes (') and seconds (").

There are 60 minutes in each degree. Each minute is divided into 60 seconds. Seconds can be further divided into tenths, hundredths, or even thousandths. For example, the U.S. Capitol is located at 38°53'23"N, 77°00'27"W (38 degrees, 53 minutes, and 23 seconds north of the equator and 77 degrees, no minutes and 27 seconds west of the meridian passing through Greenwich, England).