

TIME ZONE

A time zone is a region of the globe that observes a uniform standard time for legal, commercial, and social purposes. Time zones tend to follow the boundaries of countries and their subdivisions instead of strictly following longitude, because it is convenient for areas in close commercial or other communication to keep the same time. Most of the time zones on land are offset from Coordinated Universal Time (UTC) by a whole number of hours (UTC−12:00 to UTC+14:00), but a few zones are offset by 30 or 45 minutes (e.g. Newfoundland Standard Time is UTC−03:30, Nepal Standard Time is UTC+05:45, Indian Standard Time is UTC+05:30 and Myanmar Standard Time is UTC+06:30).

Some higher latitude and temperate zone countries use daylight saving time for part of the year, typically by adjusting local clock time by an hour. Many land time zones are skewed toward the west of the corresponding nautical time zones. This also creates a permanent daylight saving time effect.

GREENWICH MERIDIAN

Mean Time or GMT is clock time at the Royal Observatory in Greenwich, London. It is the same all year round and is not affected by Summer Time (Daylight Saving Time) clock changes. When the sun is at its highest point exactly above the Prime Meridian, it is 1200 noon at Greenwich.

GMT is also a time zone, used by the United Kingdom of Great Britain and Northern Ireland (UK) when Daylight Saving Time is not in use, from October to March. The Greenwich Meridian (Prime Meridian or Longitude Zero degrees) marks the starting point of every Time Zone of the time zone map.

Time Zones and Daylight Curve

Every 15° longitude represents one hour's difference in time: ($24 \times 15 = 360$, the degrees of a circle). You can work out the time at every location on earth if you know how many degrees it is east or west of Greenwich.

Where is Greenwich, England ?

Longitude $0^{\circ} 0' 0''$

Latitude $51^{\circ} 28' 38''\text{N}$ (North of the Equator)

GMT is still widely used as the standard time against which all the other time zones in the world are referenced.

Historical timeline

GMT was originally set up to aid naval navigation when travel around the globe started to open up with the discovery of the “New World” (America) in the fifteenth century. Greenwich was a royal park and palace on a hill to the south of the River Thames east of London. In 1675 the great race to create accurate maps for navigators had begun and Charles II offered the land to The Royal Society for Britain's first national observatory. Christopher Wren was commissioner to design the domed building. John Flamsteed was appointed the Astronomer Royal. British mapmakers began to set Longitude from Greenwich and in 1884 it was adopted as the Prime Meridian.

Defining Elapsed Time

Elapsed time is simply the amount of time that passes from the beginning of an event to its end. In this lesson, you will learn how to solve for elapsed time and explore how it can be used in your everyday life.

Say it is currently 3:35pm in the afternoon and you are supposed to meet your best friend for dinner at 6:20pm. Before you leave your house you have to clean your room, shower, get dressed, and still have time to get to your friend's house. Do you just wing it and hope you make it there on time? Or do you use your awesome math skills to figure out how much time you have to finish all of your tasks and arrive for dinner at 6:20pm?

Elapsed time is the amount of time that passes from the start of an event to its finish. In simplest terms, elapsed time is how much time goes by from one time (say 3:35pm) to another (6:20pm)