



Latitude and Longitude

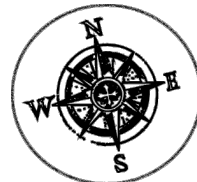
with and Intro to GPS

What is Latitude & Longitude?

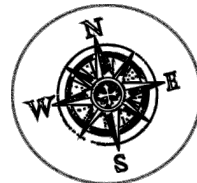




“Lat & Long” is a universal system to locate places on earth.

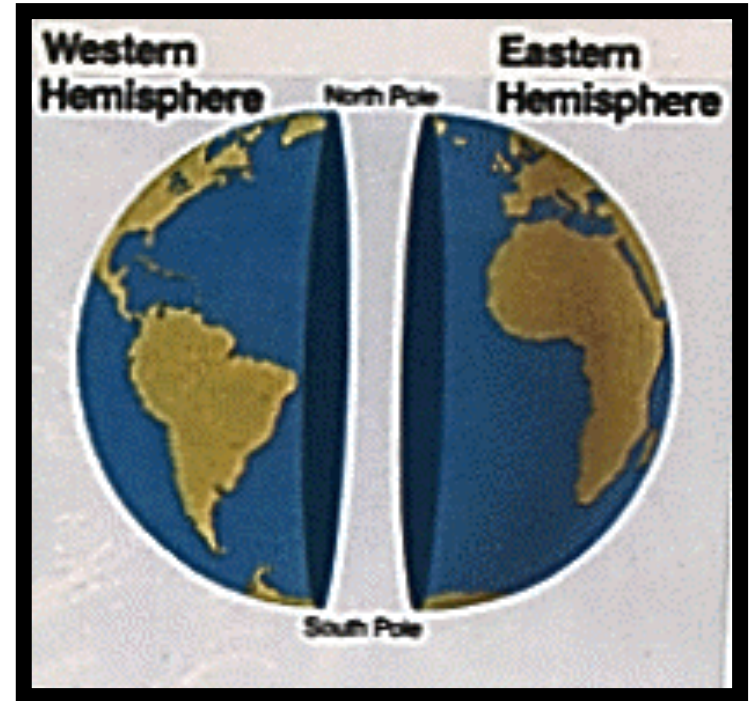
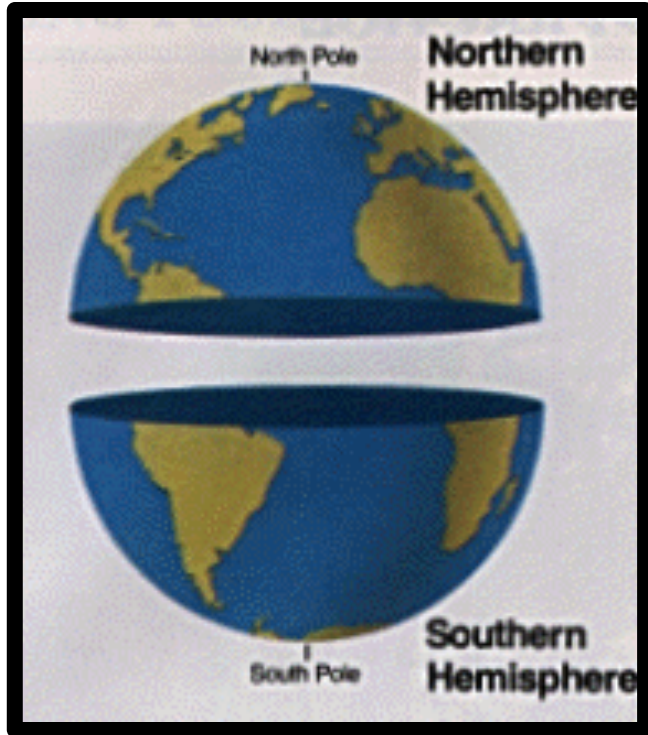


How does it work?



Hemispheres

First Step is to divide the earth into “half spheres”



Equator



Imaginary line that runs EAST & WEST around the globe & splits the Earth into “Northern” & “Southern” Hemispheres.

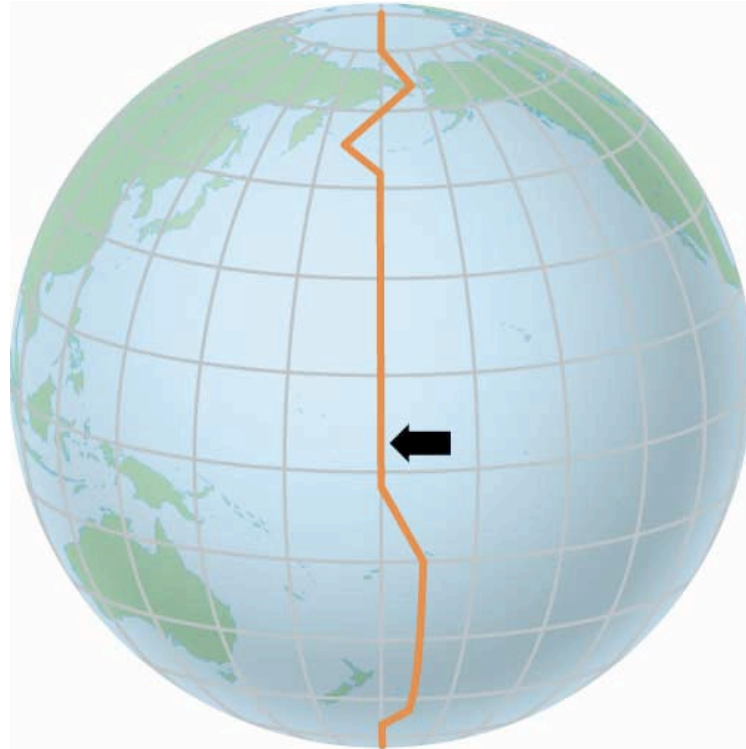
Prime Meridian



NOTE...this line does NOT run around the entire earth!!

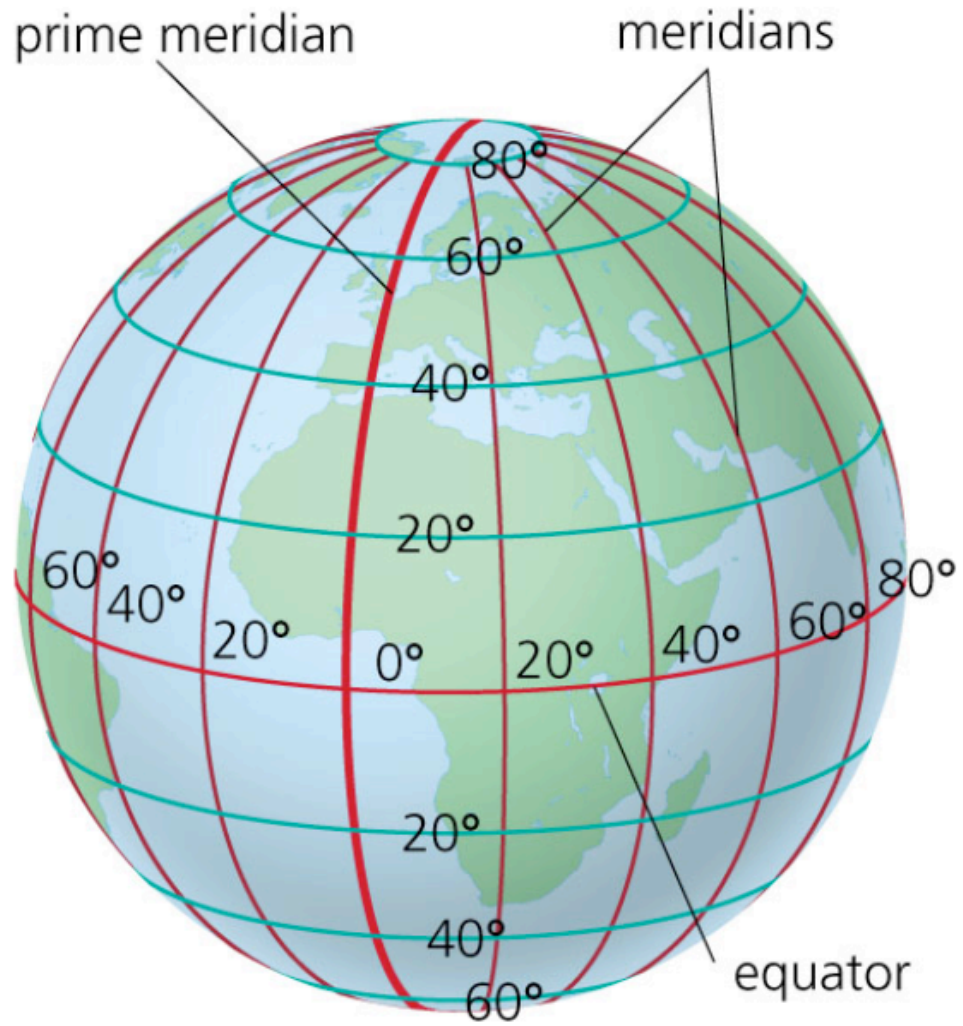
Imaginary line that runs NORTH & SOUTH 180 degrees from the each of the “Poles” through Greenwich, England...this line splits the Earth into “WESTERN” & “EASTERN” Hemispheres.

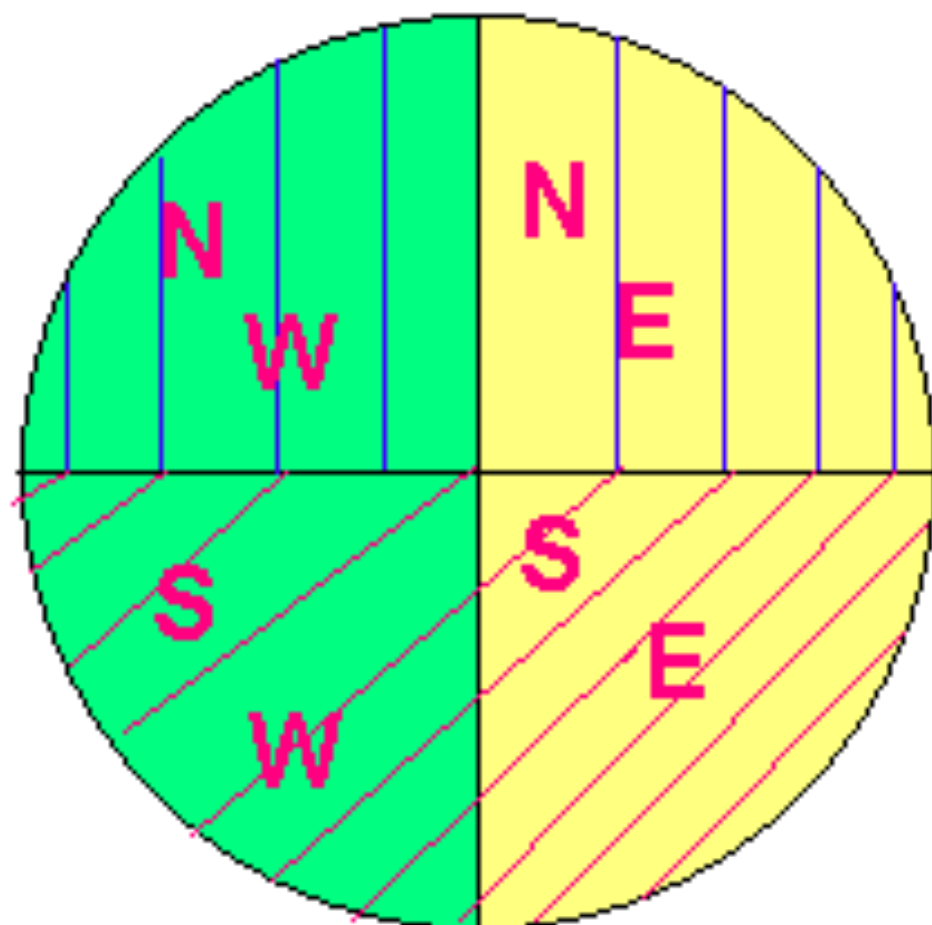
International Date Line



NOTE...this line designates where the DAY changes for the world.

Imaginary line OPPOSITE of the Prime Meridian that completes the 360 degree circle around the globe.





Hemispheres

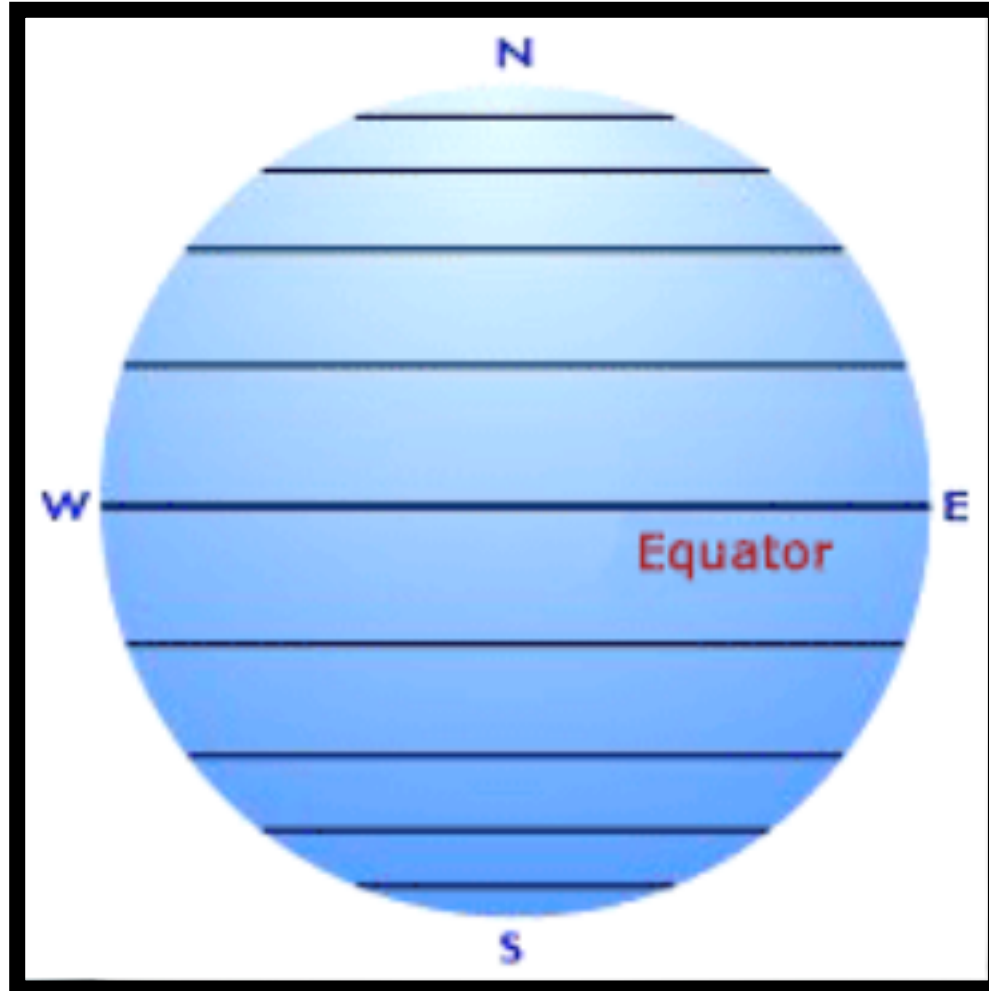
 Eastern

 Western

 Northern

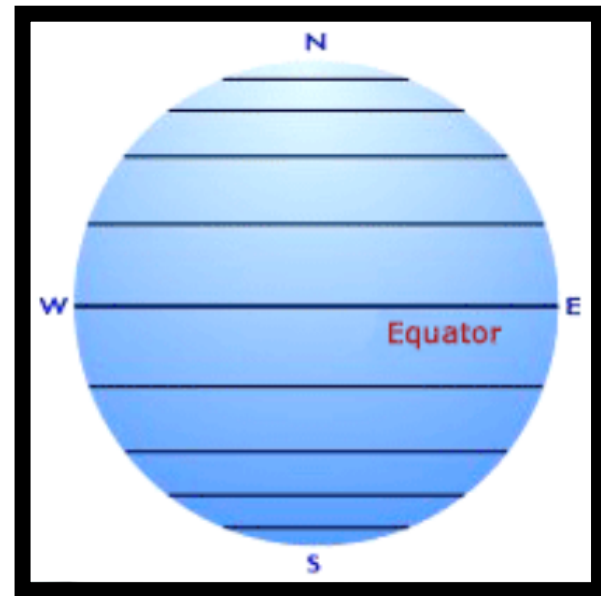
 Southern

Latitude Lines

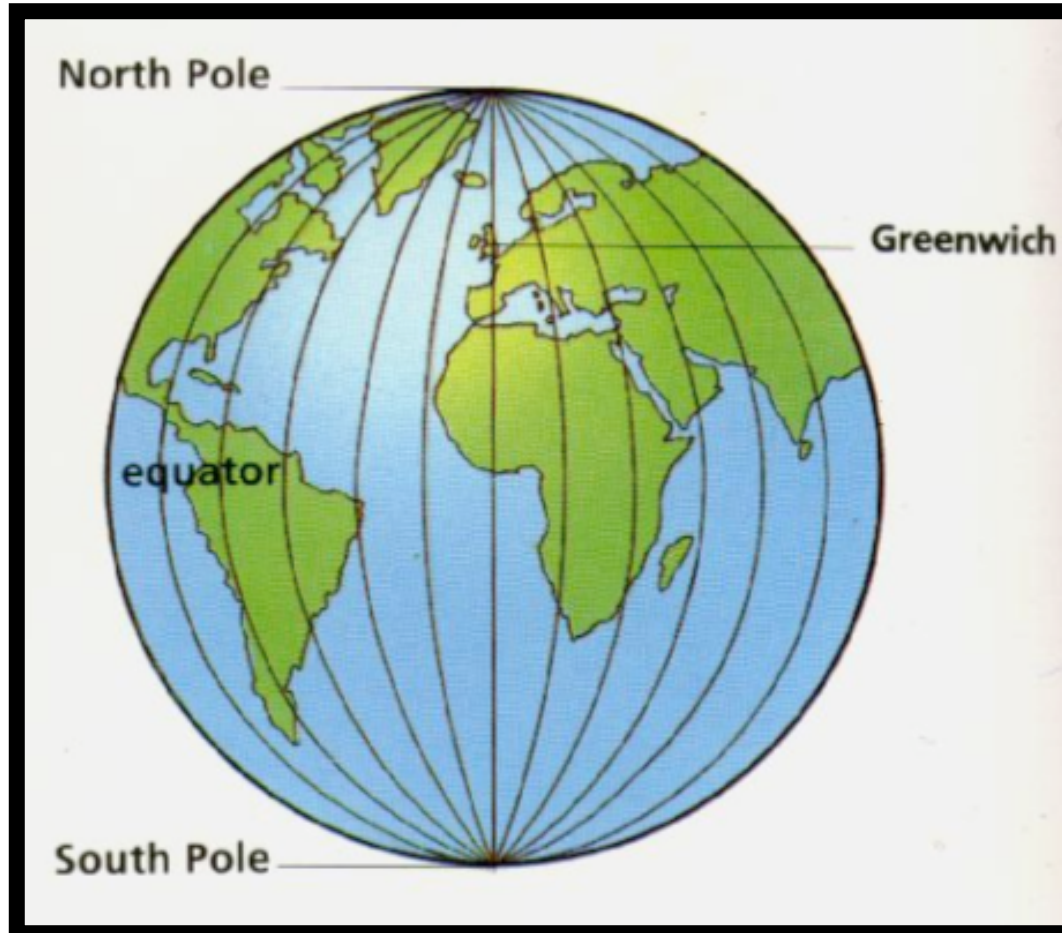


Latitude Lines

- 1) measures distances North & South of the Equator
- 2) run EAST & WEST around globe & never cross (parallel)
- 3) North Pole is 90 Degrees North
- 4) South Pole is 90 Degrees South
- 5) Equator is ZERO Degrees

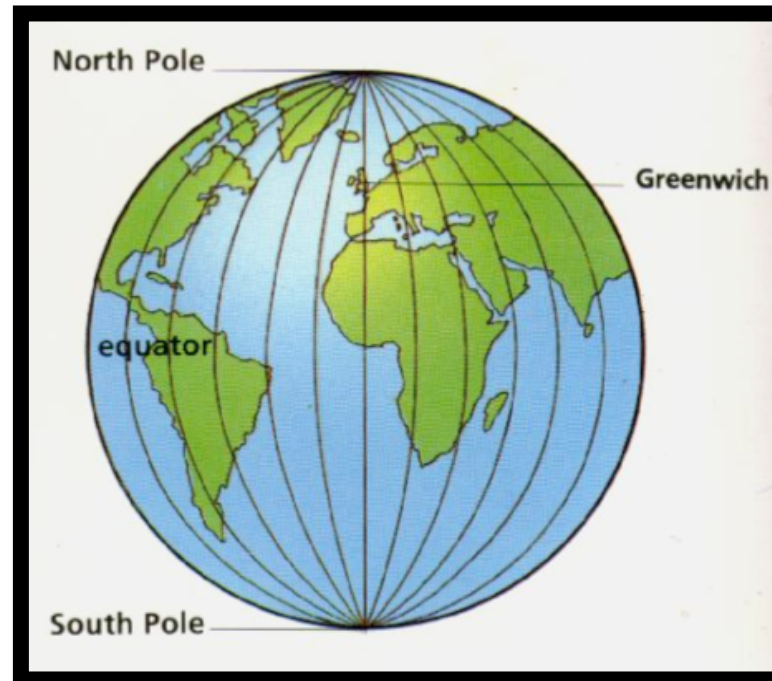


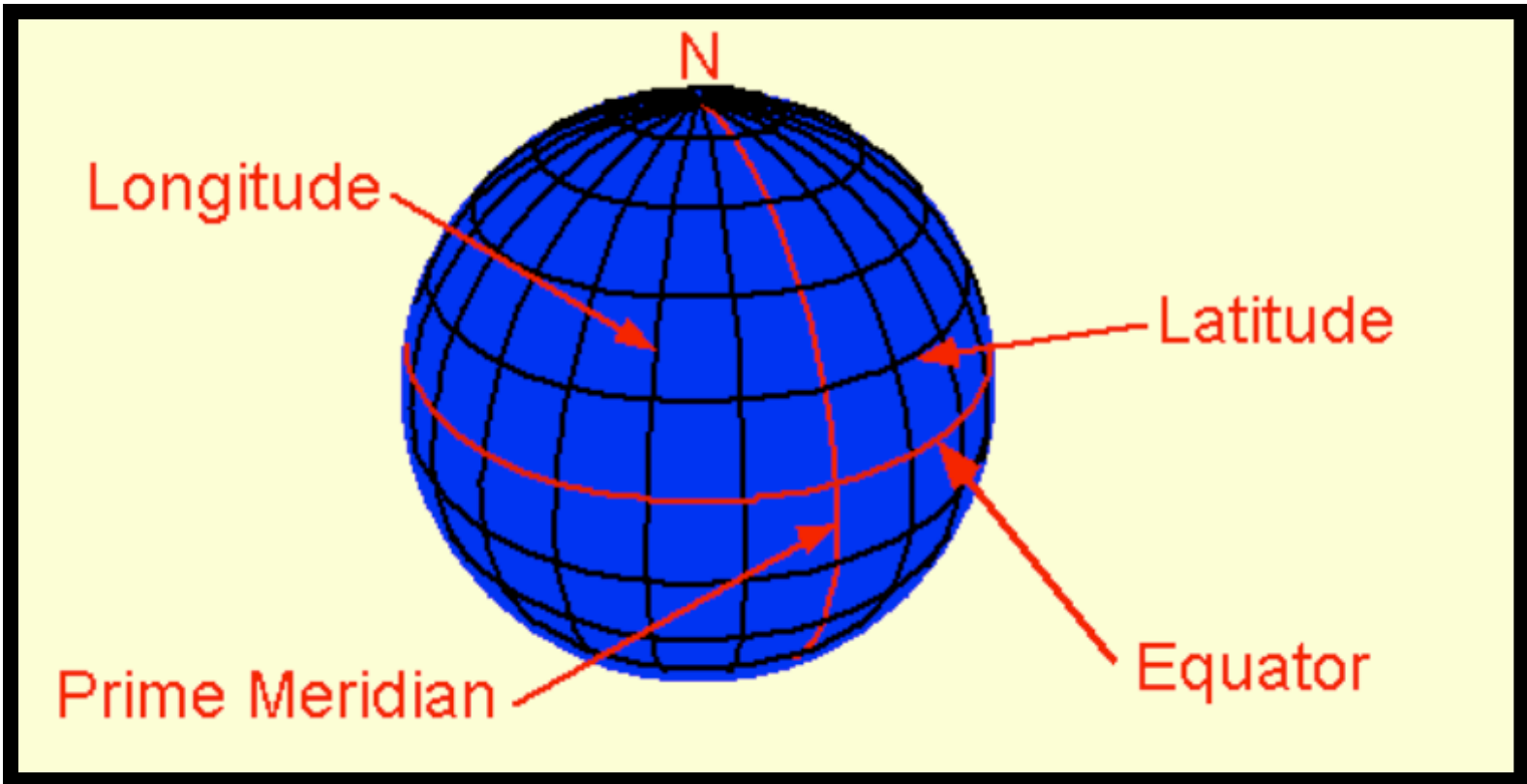
Longitude Lines



Longitude Lines

- 1) measures distances East & West of Prime Meridian
- 2) run NORTH & SOUTH and meet at the Poles
- 3) Prime Meridian is ZERO Degrees
- 4) International Date line is at 180 Degrees





Group Activity...using Latitude & Longitude!

GPS

Real World Latitude & Longitude Application!



What is GPS?

GLOBAL POSITIONING SYSTEM



GPS is a satellite based navigation system of 24 satellites placed into orbit by the US government.



GPS invented in the 1980's for
military use



GPS works in ANY weather, any location on earth, and open 24 hours a day.



GPS needs to connect with 4
Satellites in order to be “found”.
(Found = Lat & Long!!)



After a **GPS** is “Found” it can calculate altitude, speed, distances, sunrise/sunset, and compass bearing.



GPS is free to use, but is limited to “line of sight”, which means signals don’t travel through solids objects.



Each **GPS** Satellite weighs 17,000 pounds, travels at 7,000 mph 12,000 miles above earth, and makes 2 complete orbits around the earth daily.



GPS fun time! Tomorrow we will be OUTSIDE using our classroom GPS Units USING Lat & Long!! (Dress Accordingly)

