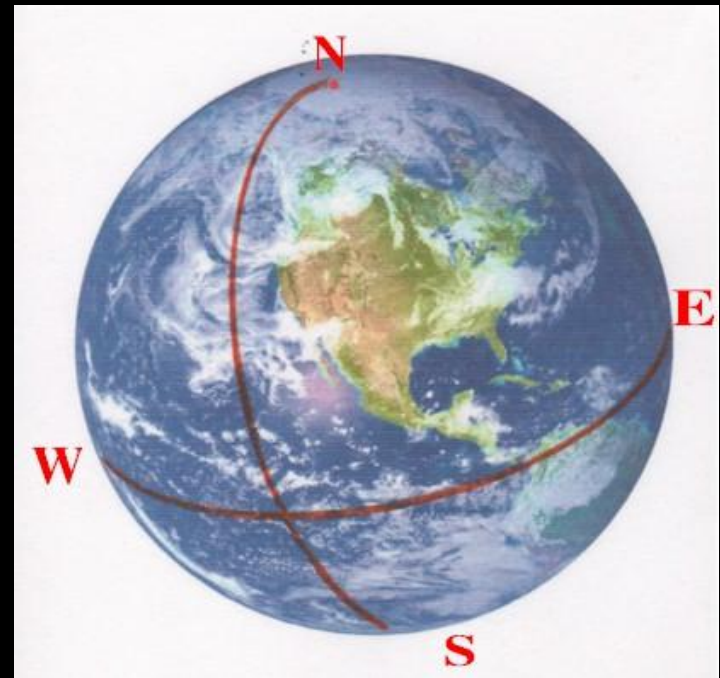


Earth Motions and Tilt

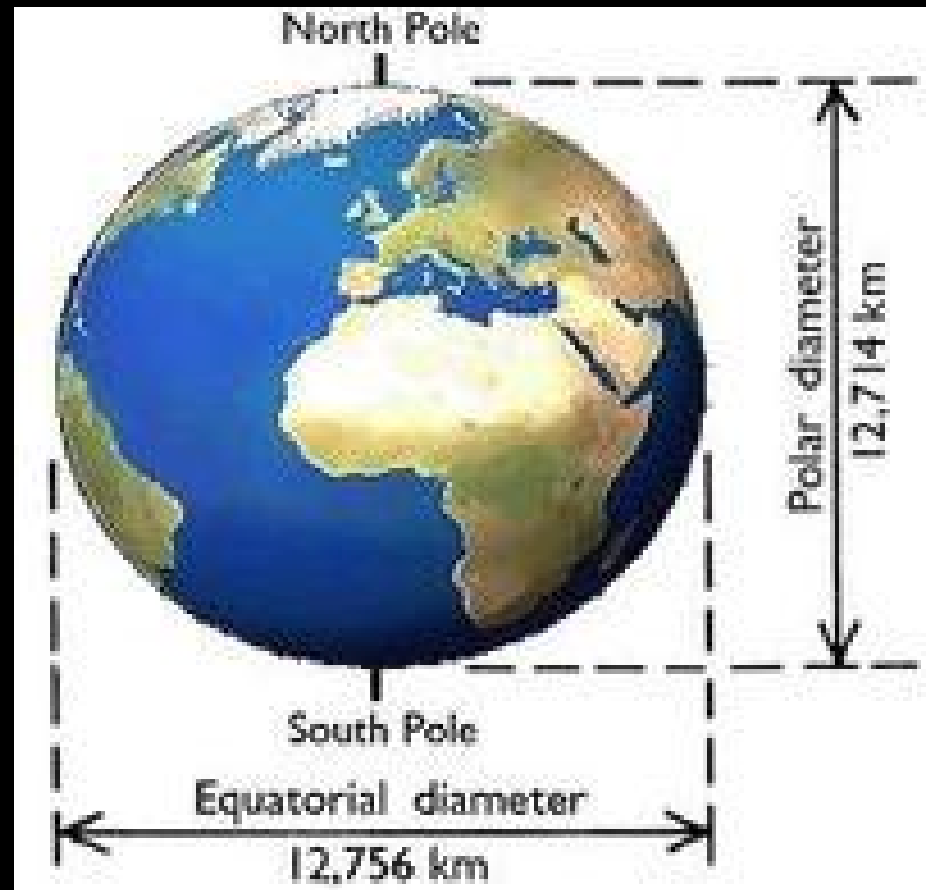
Earth's Circumference

- Erastosthenes determined the earth's circumference was 46,250 km
- At the equator = 40,074 km
- At the poles = 40,007 km



Earth's Shape

- Oblate spheroid
- Spherical: slightly flattened at the poles and bulges at the equator.
- As Earth rotates, the sphere is distorted by centrifugal force.
 - Causes objects to move outwards from the center
 - Greatest at the equator



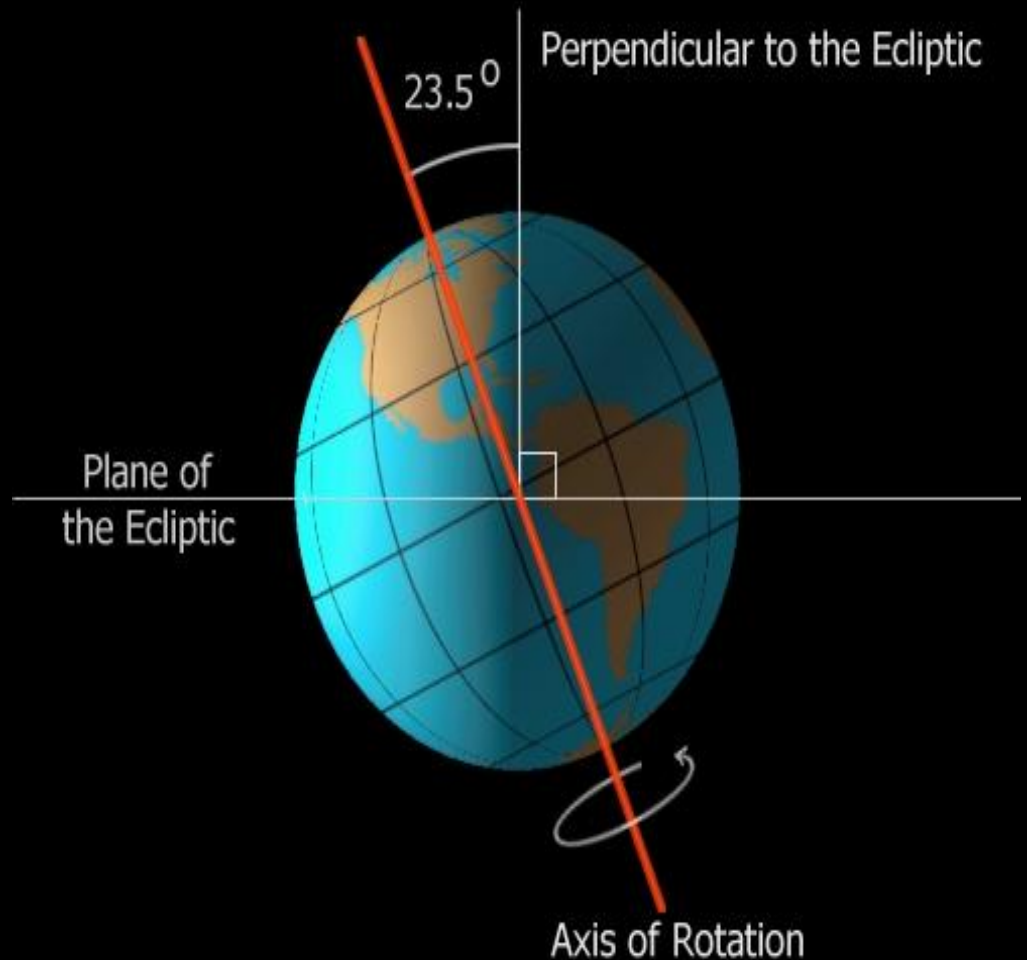
Axis

- An imaginary line that runs through the earth from the north pole to the south pole.
- The earth rotates (spins) on its axis.

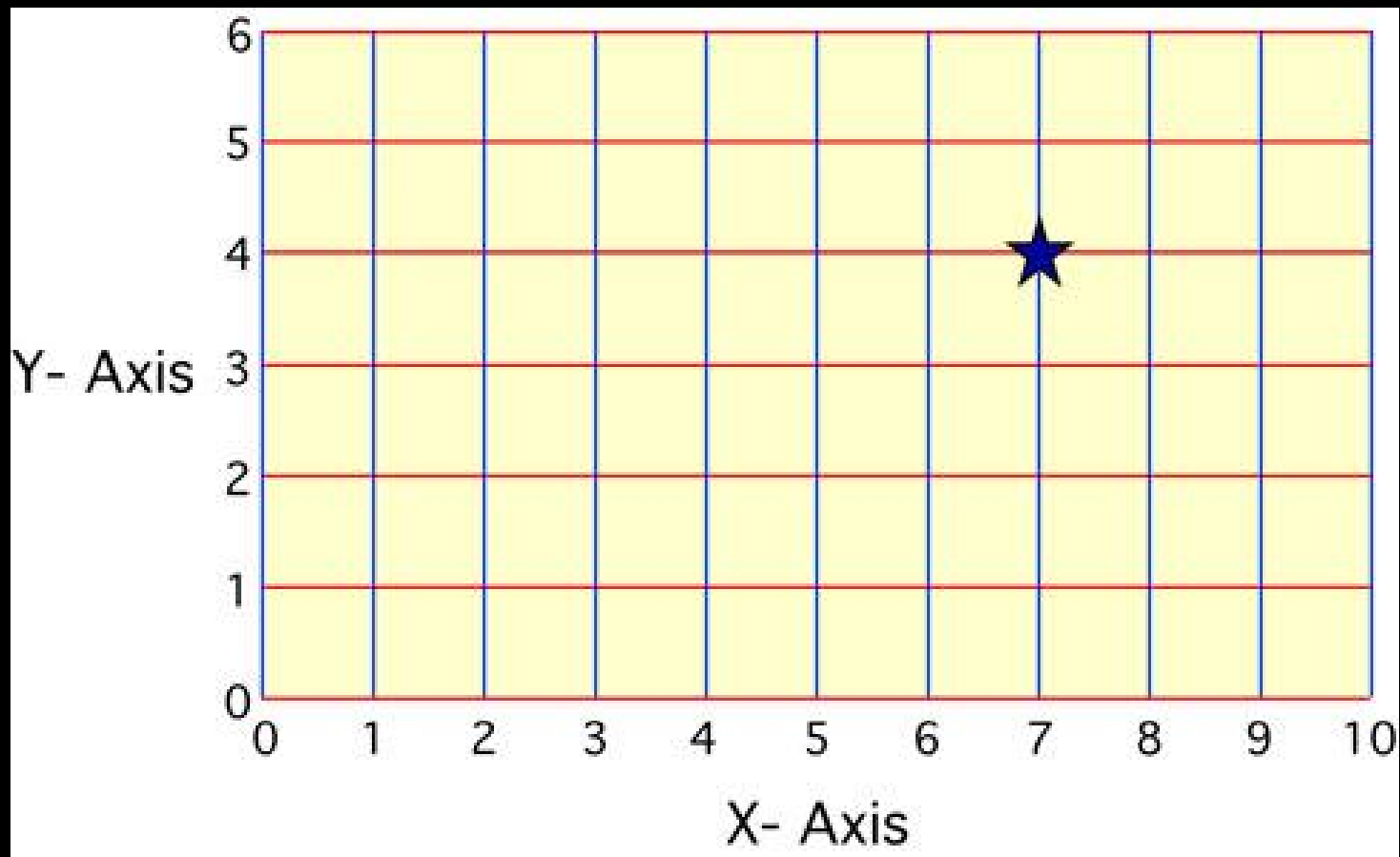


Tilt

- The earth is tilted at 23.5°

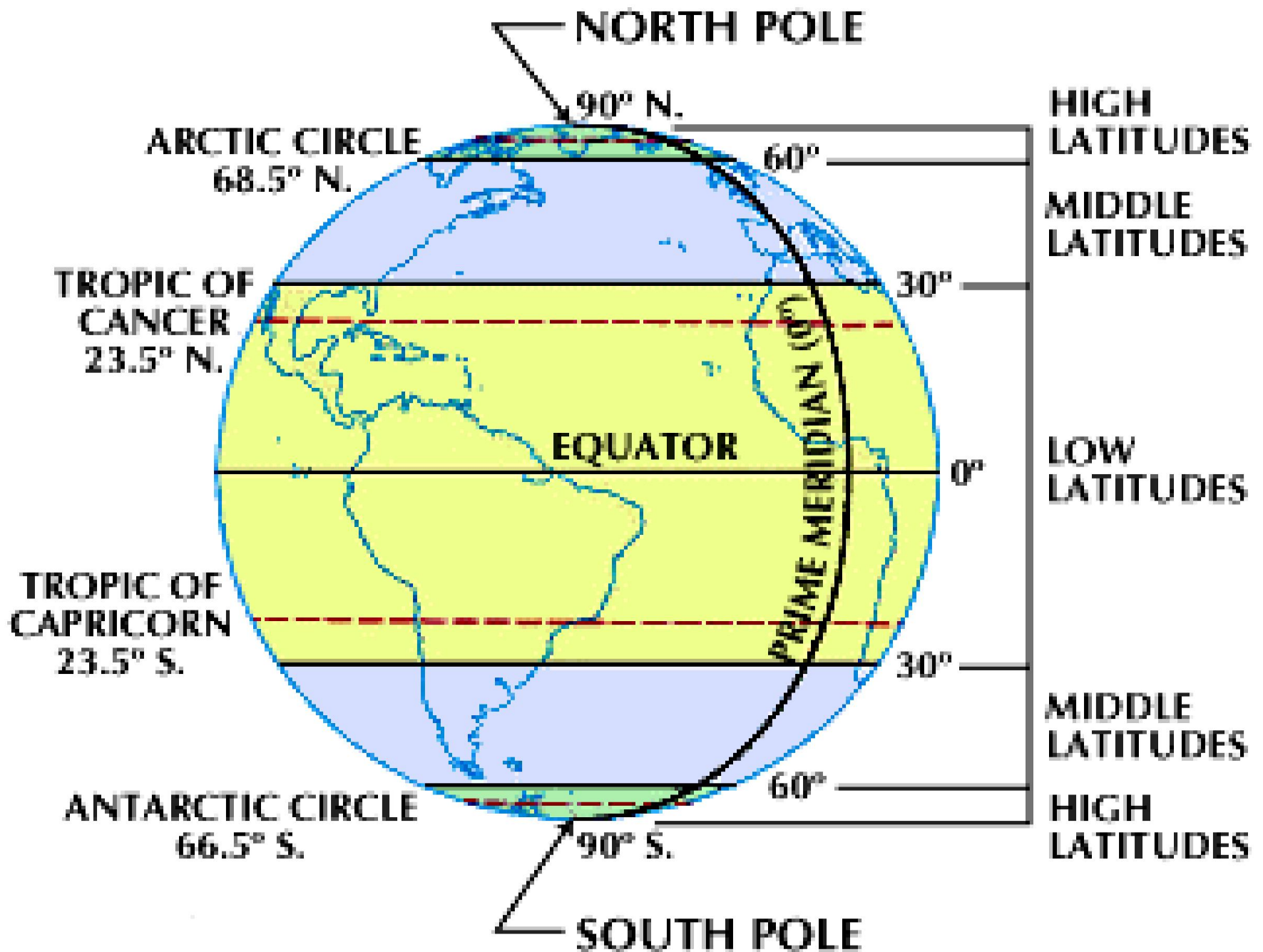


Coordinate system- a system of intersecting lines used to determine locations on the Earth's surface



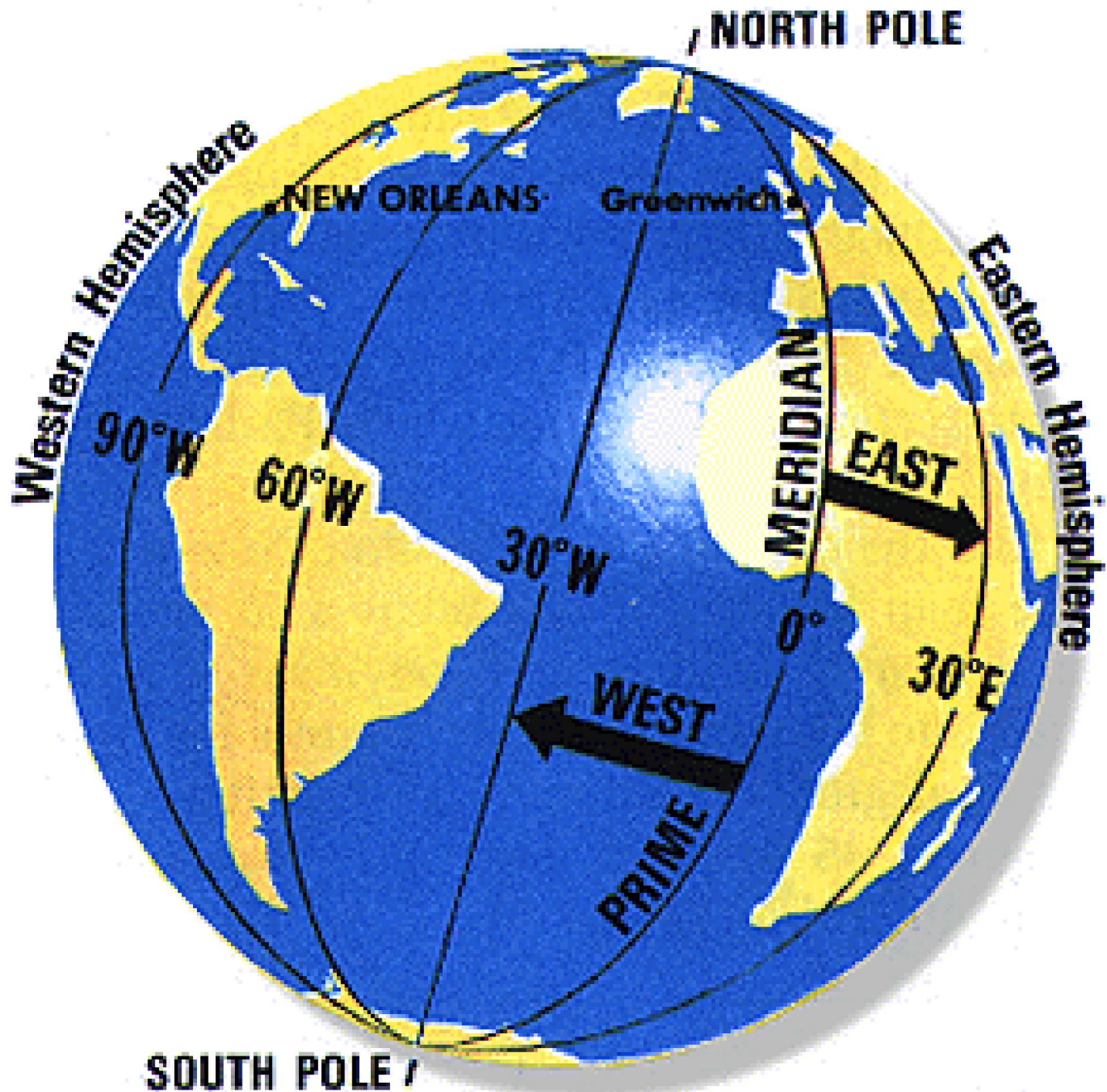
Latitude

- **Latitude:** Measures distance North and South of the Equator
- **Parallels:** imaginary lines that run E to W



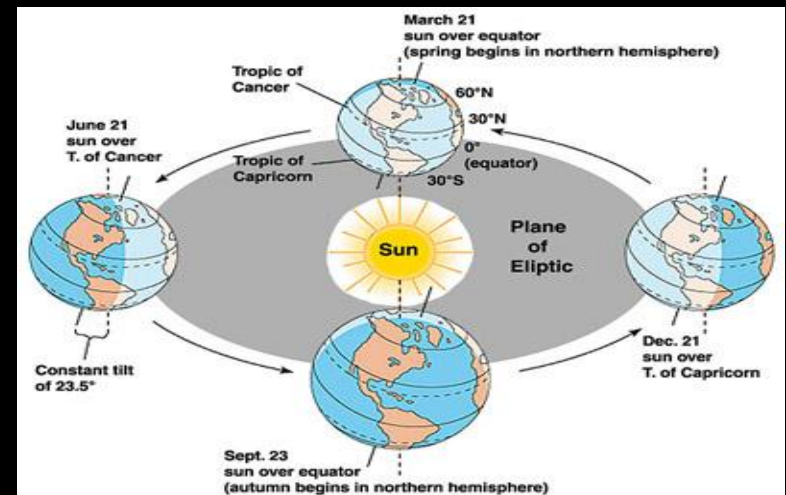
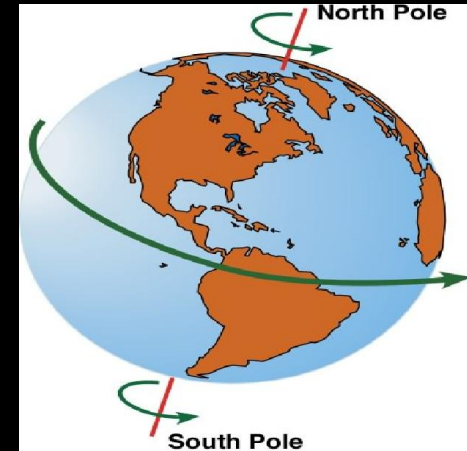
Longitude

- **Longitude:** Measures distance in degrees east and west of the Prime Meridian.
- **Meridians:** lines of longitude



Earth's Movement

- **Rotation:** spinning motion of the earth. 24 hours for one rotation (1 day).
- **Revolution:** movement of the earth around the sun. 365 1/4 days (1 year)



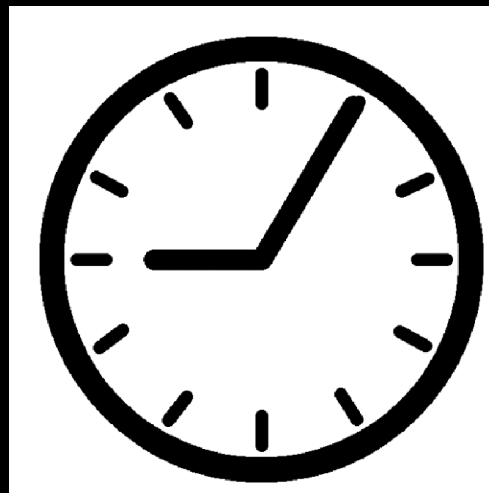
Why do you have summer and winter?

- I want guesses, NOW!!!!

(Hint: Think about the sun)

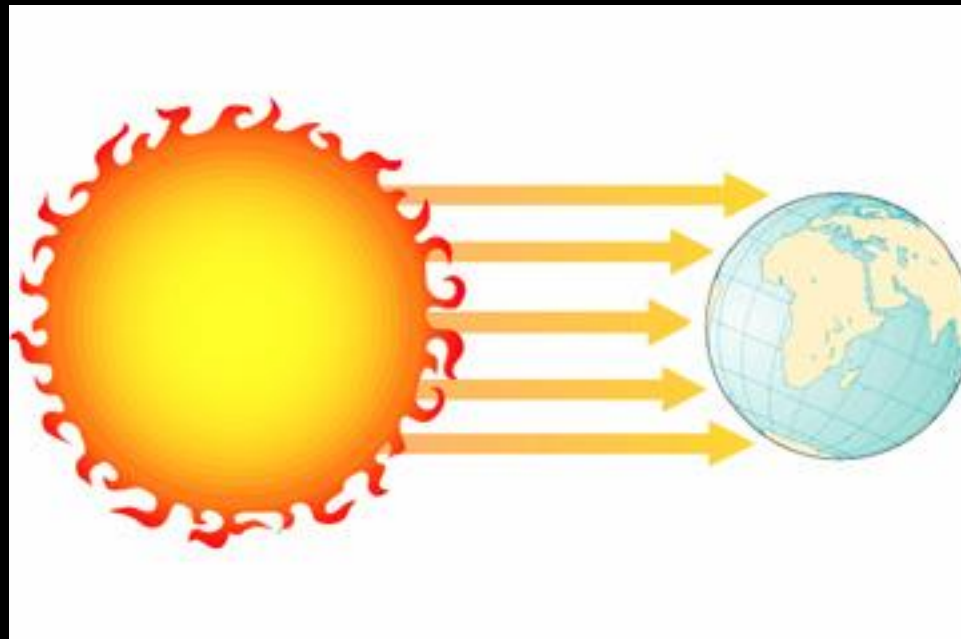
Reason #1: # of daylight hours

- The amount of sunlight varies throughout the year. The tilt of the earth means no two latitudes get the same amount each day.
- In the summer you have more hours of sunlight and fewer in the winter.



Reason #2: Angle of sunlight

- The angle of the sun's rays cause different intensities, this is also caused by the tilt of the earth.



Equinoxes

- Vernal Equinox: March 21-22
- Autumnal Equinox: Sept. 21-22
- 12 hours of daylight/12 hours of darkness
- The sun is directly overhead at the equator

Solstices

- Summer Solstice
 - June 21-22
 - Longest day of the year in the N. Hemisphere
 - The sun is directly overhead at the Tropic of Cancer.
- Winter Solstice
 - December 21-22
 - Shortest day of the year in the N. Hemisphere
 - The sun is directly overhead at the Tropic of Capricorn.