

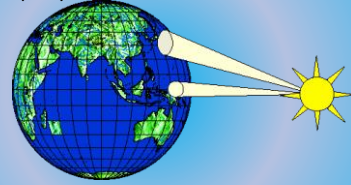
## The Earth's Geography and Climate

A region's climate is largely determined by the amount of solar radiation striking that part of earth's surface. Why do some areas absorb more radiation than others?



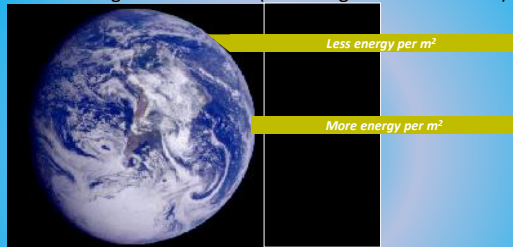
## 1) Earth's Spherical Shape

- Due to its shape the radiant energy of the sun cannot heat all locations equally



- At the equator **DIRECT RAYS** – INTENSE!
- Higher latitudes, **INDIRECT RAYS** – less intense

- Intensity is determined by the angle at which the light strikes the Earth  
= angle of Insolation (INcoming SOLar rADIATION)



- The angle of Insolation is greater at the poles than at the equator

- This creates climatic zones which are divided by specific latitudes

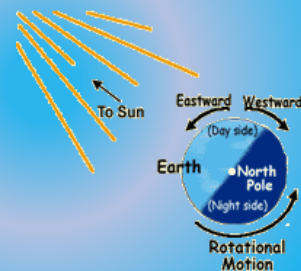


- **Polar Zones:** cold climates
- **Temperate Zones:** varying temperatures
- **Tropical Zones:** warm climates

- The **polar zones** have 24 h of darkness during parts of the winter & 24 h of sunlight during parts of the summer.

## 2) Rotation of the Earth

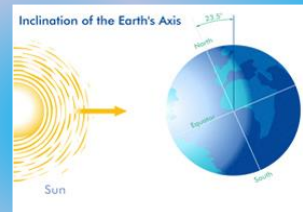
- The earth rotates on a central axis every 24 hours  
= limits the time that various locations are exposed to solar radiation  
= causes day and night



## 3) Earth's Tilted Axis

- Earth is tilted on its axis at an angle of 23.5°

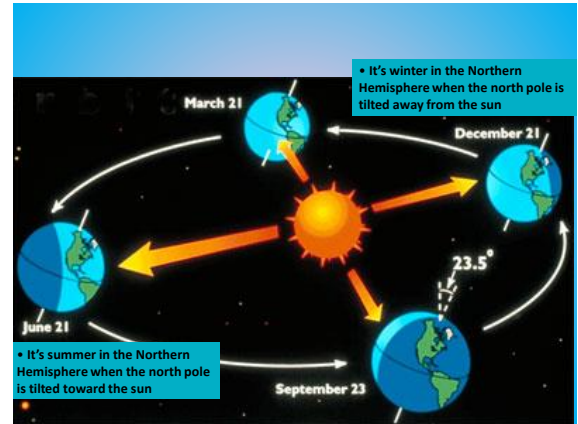
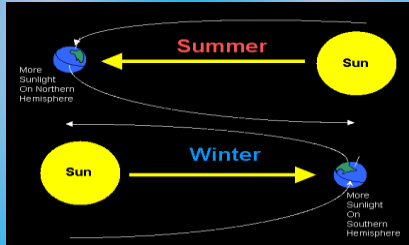
= angle of inclination



- causes a variation in the number of hours of daylight at different latitudes.  
= determines the length of day /night

#### 4) Earth's Elliptical Orbit

- The Earth revolves around the sun in an elliptical orbit.
- Combined with the tilt of the earth, this allows certain parts of the Earth to be closer to the sun at different times of the year.



- Earth's daily rotation, yearly revolution and its tilt on its axis (angle of inclination) cause the seasons



- The seasons in the two hemispheres are opposite; when it is summer in the Northern Hemisphere it is winter in the Southern Hemisphere.

<http://www.youtube.com/watch?v=rcquRMaVSKU>