Today in APES…

Week #7 Quarter 2 (11/25-11/27)
(calendar site)
Monday, 11/25

APES Learning Goal:
- I can demonstrate the effects of biomes on an ecosystem.

Daily Question:

What is a biome and how does it influence biodiversity?

Activities/Assignments:
1. Homework demonstration
2. Biome Presentations
3. Stamp Annotation will discuss on Tuesday

Have out:
✧Biome Presentations

Homework:
- Test has been moved from 11/26 to 12/4 Study for Chapters 4 & 5 test
- Eco-Column Reports due December 13th

Today in APES…

Week #7 Quarter 2 (11/25-11/27)
(calendar site)
Tuesday, 11/26

APES Learning Goal:
- I can demonstrate the effects of biomes on an ecosystem.

Daily Question:

What is a biome and how does it influence biodiversity?

Activities/Assignments:
1. Finish Biome Presentations
2. Annotation reading concept map
3. Discuss/Grade Radiometric Dating Game Lab Assignment

Have out:
✧Biome Presentations

Homework:
- Test has been moved from 11/26 to 12/4 Study for Chapters 4 & 5 test
- Ecological Succession Lab due Tues. 12/3
- Ecological Succession Activity due Tues. 12/3
- Eco-Column Reports due December 13th

Today in APES…

Week #7 Quarter 2 (11/25-11/27)
(calendar site)
Wednesday, 11/27

APES Learning Goal:
- I can demonstrate the effects of biomes on an ecosystem.

Daily Question:

What is a biome and how does it influence biodiversity?

Activities/Assignments:
1. Climate notes

Have out:
✧Biome Presentations

Homework:
- Test has been moved from 11/26 to 12/4 Study for Chapters 4 & 5 test
- Ecological Succession Lab due Tues. 12/3
- Ecological Succession Activity due Tues. 12/3
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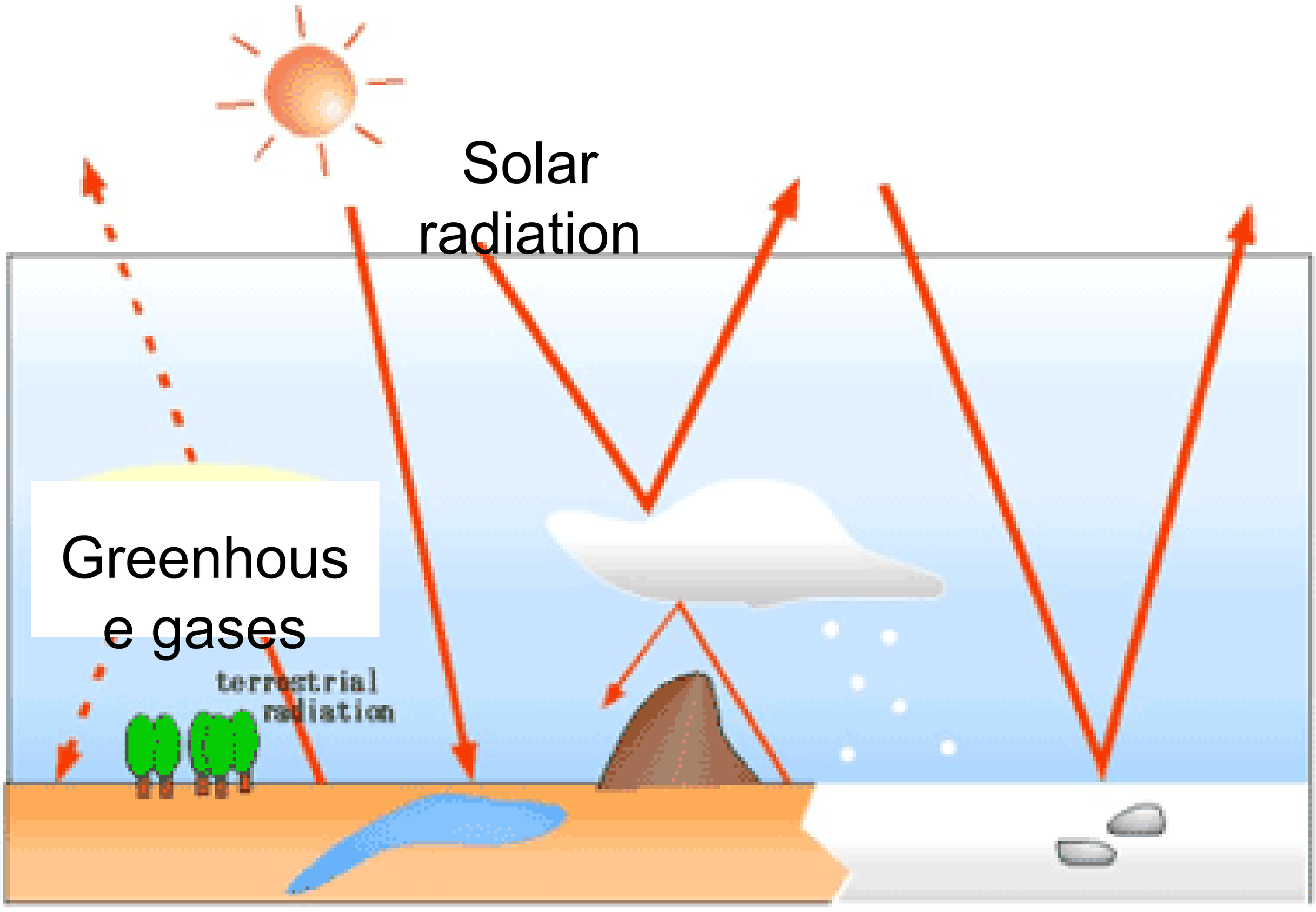
1.Climate vs. Weather

Is there a difference?

1. Elevation – the height above sea level
2. Topography- the shape of Earth's surface
3. Latitude – the distance north or south of the equator
4. Greenhouse effect – the trapping of infrared heat in the atmosphere by carbon dioxide gas
5. Polar region – an area near the poles of Earth that is extremely cold
6. Tropical region – an area near the equator that is very warm.
7. Precipitation – water in ANY form that falls to Earth
ex: rain, snow, hail, sleet

A. What they have in common

1. The weather and climate are both caused by the transfer of heat into and out of the Earth's atmosphere.


Solar
radiation
Greenhous
e gases
terrestrial
radiation

B.The main difference is. . .

1.Weather is short term.

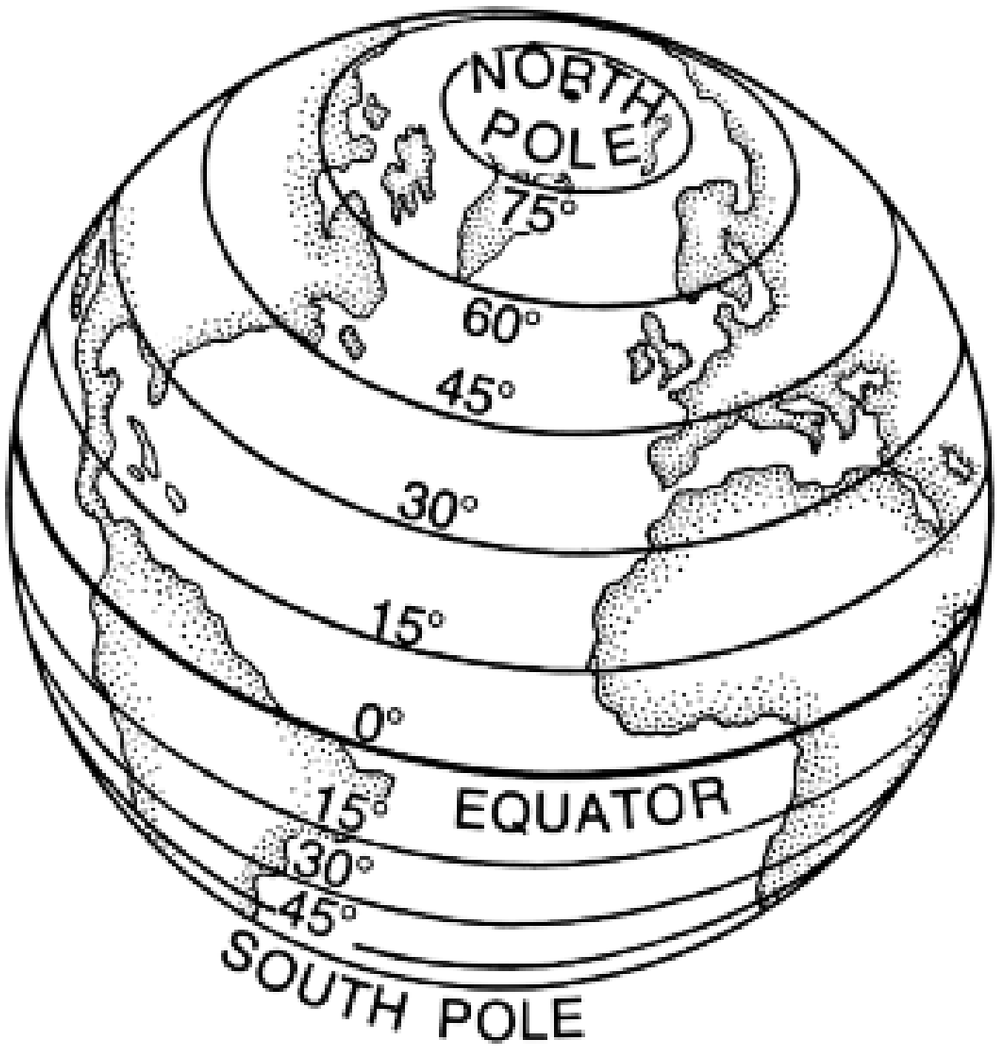
b. Daily forecast

c. Weekly forecast

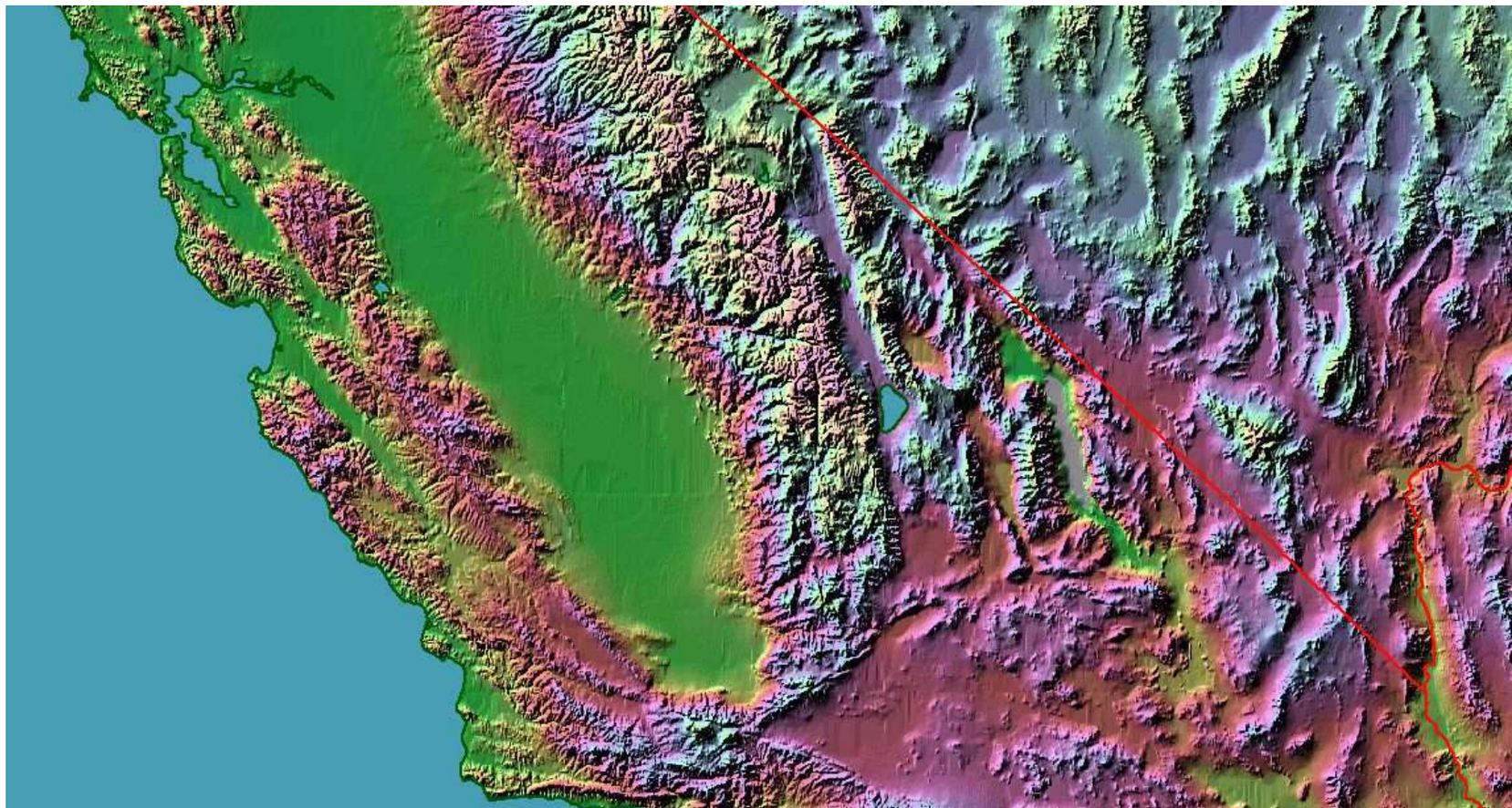
2.Climate is a long term average of a region's weather pattern.

C. Factors that can affect Climate

1. Latitude - As latitude increases, the average yearly temp. decreases.

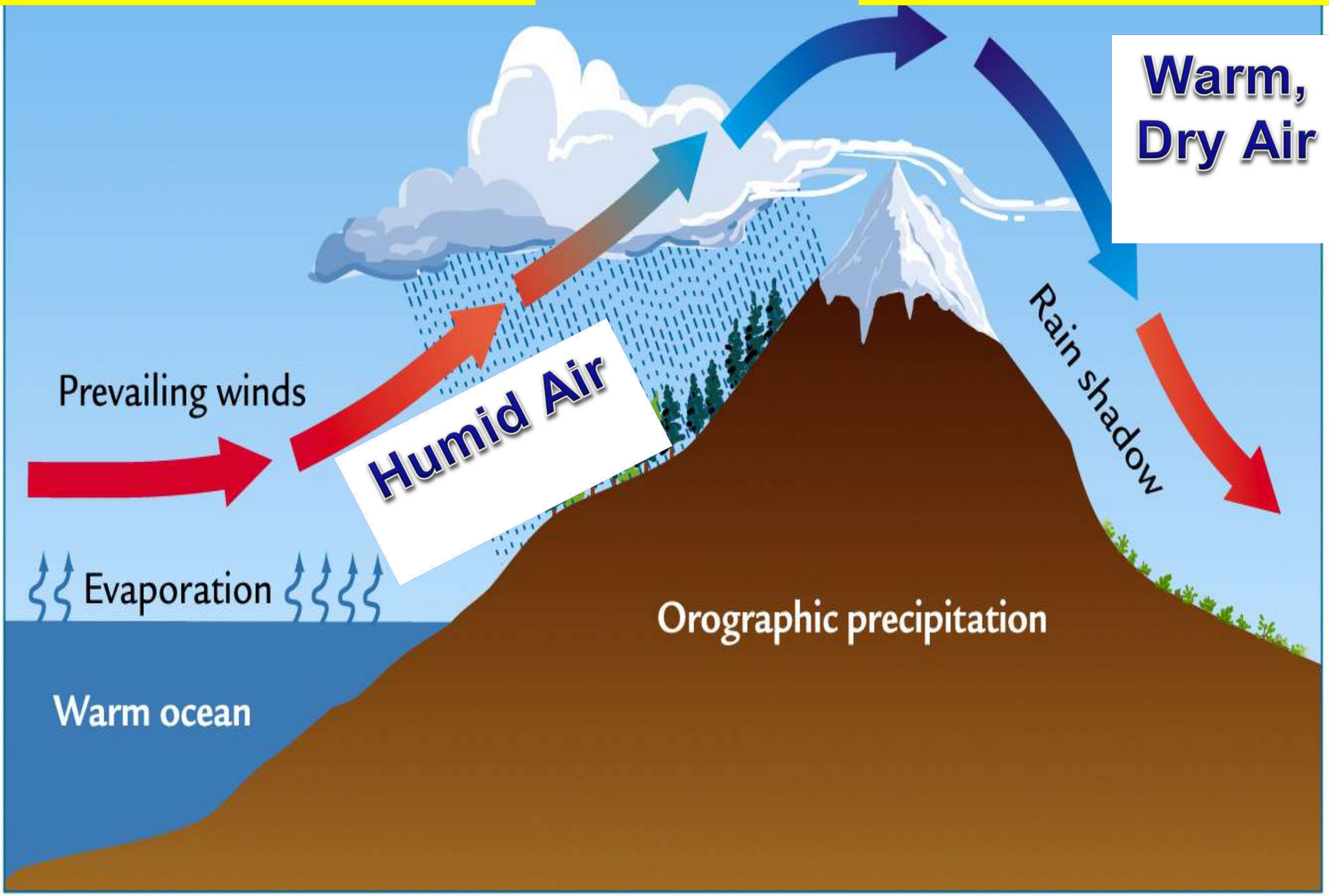


2. Topography - Windward sides of mt. ranges are cooled, while leeward sides are warmed.



Windward Side

Leeward Side

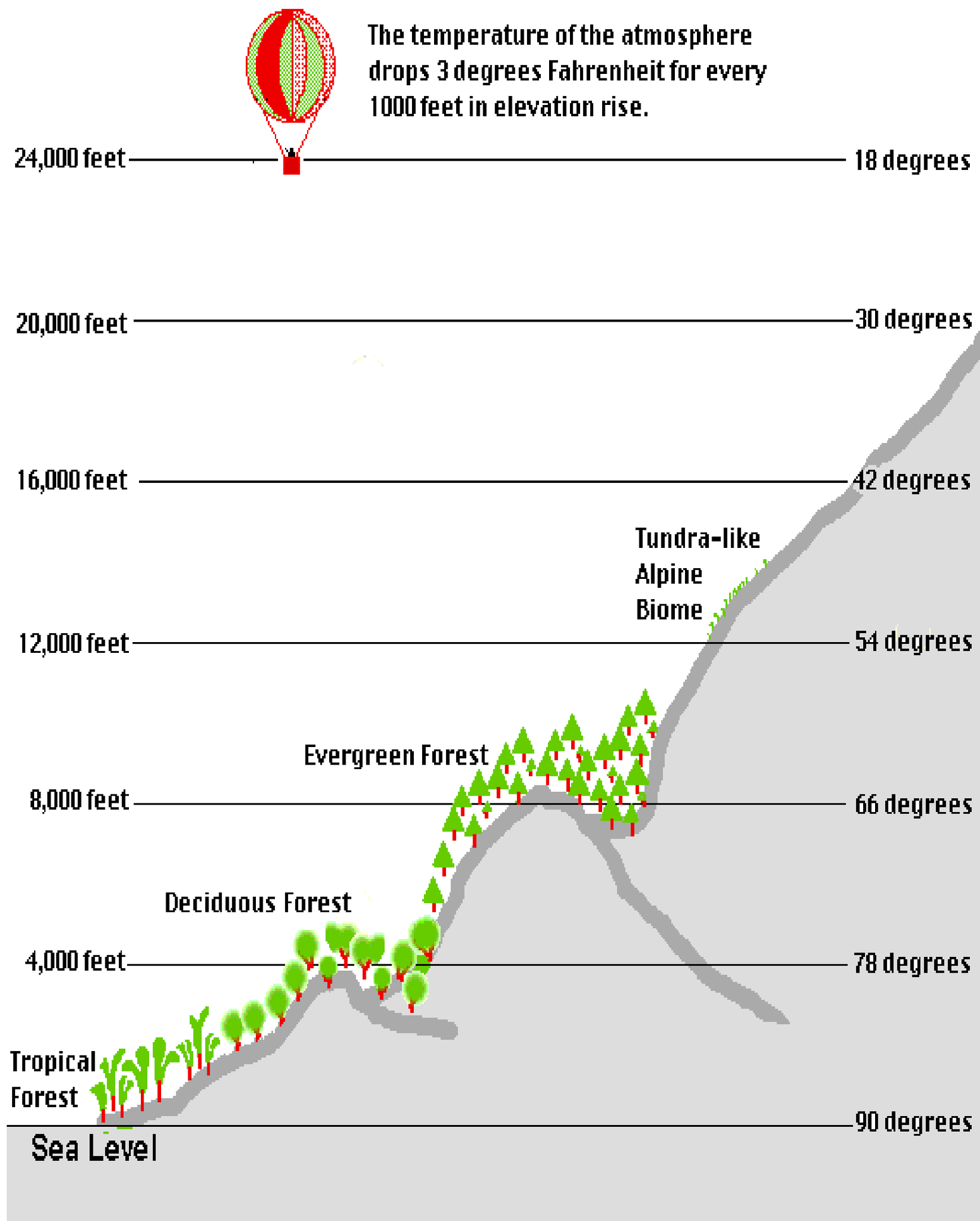


3.Large bodies of water -Has a moderating effect on the temp. of coastal areas producing low ranges in temp., both day/night and seasonally

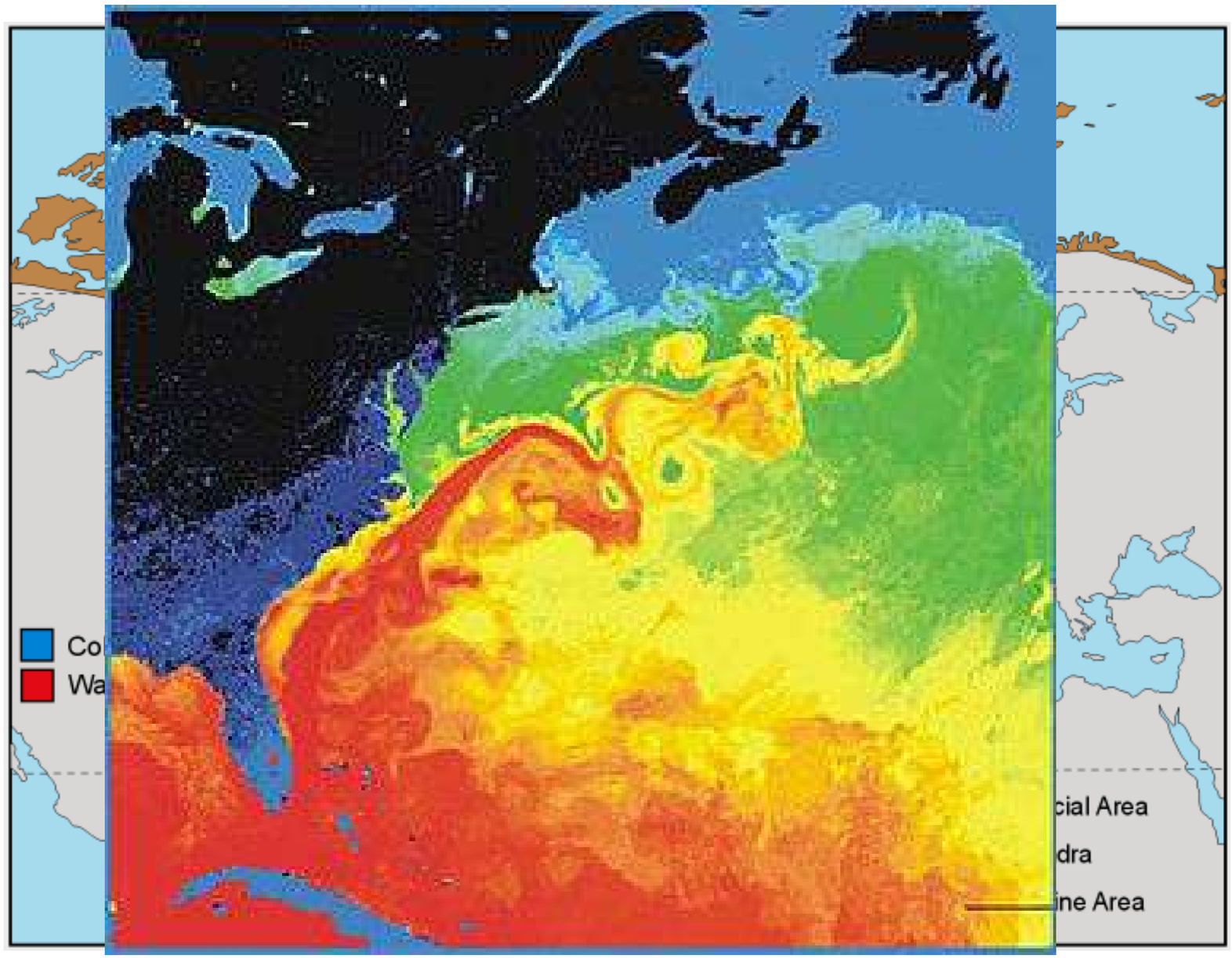
4.Vegetation – Can affect both temperature and precipitation patterns in an area.

5. Elevation / Altitude:

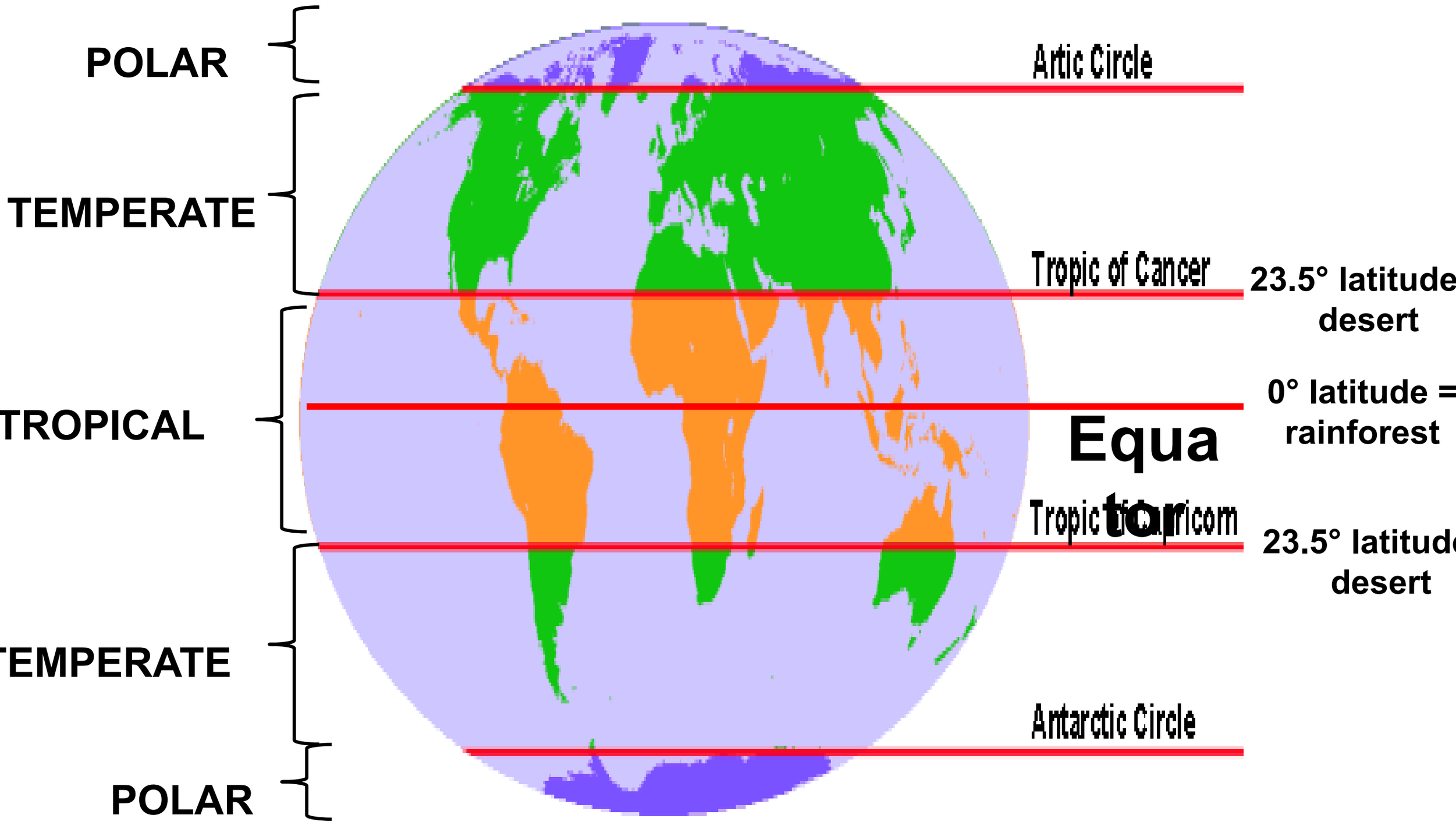
(Height above sea level)



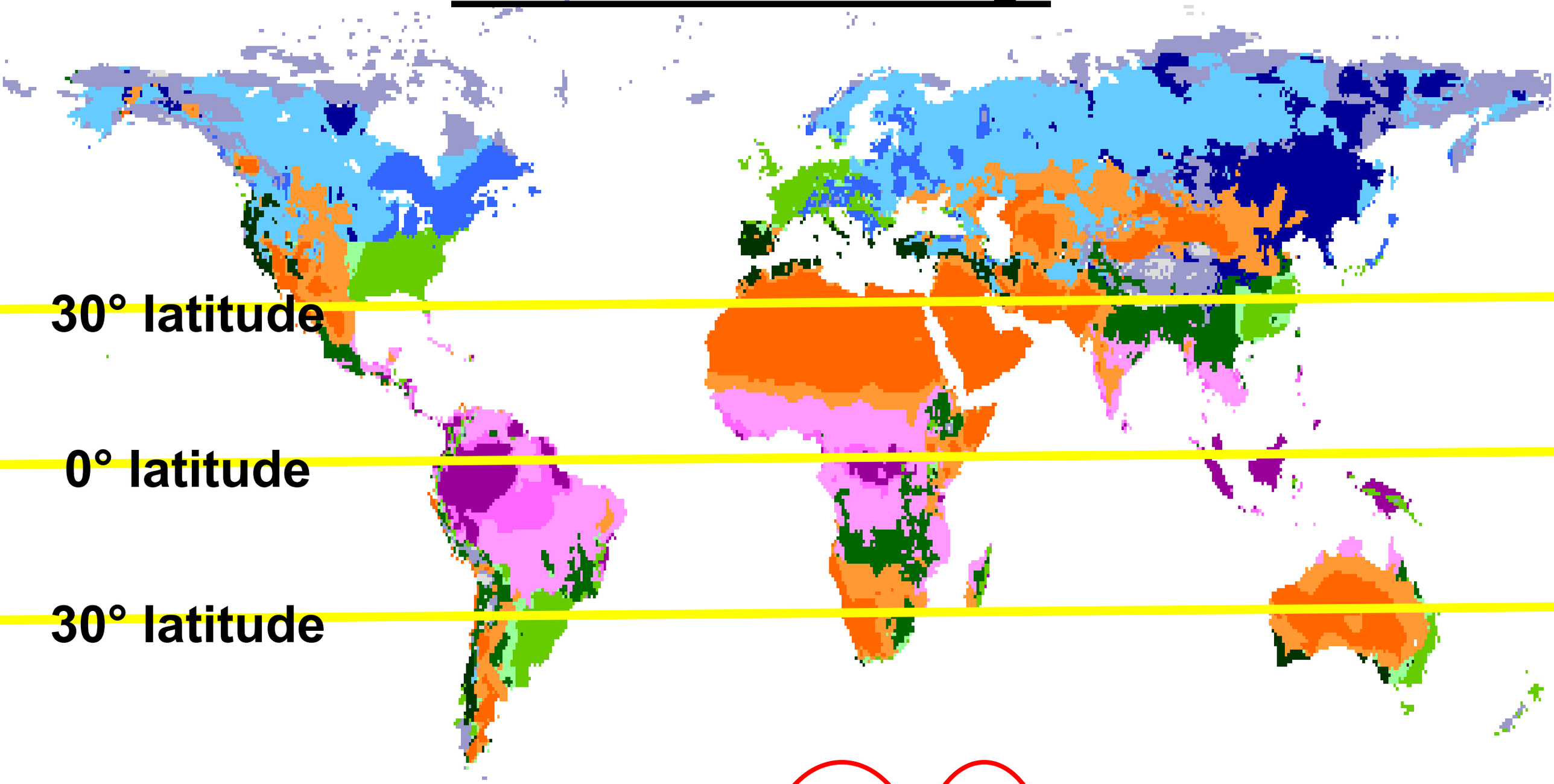
6. Atmospheric Circulation:



Earth's Major Climate Zones



Climate Map


30° latitude
0° latitude
30° latitude
Koeppen's Climate Classification
by FAO - SDRN - Agrometeorology Group - 1997
A
Tropical
B
Dry
C
Temperate
D
Cold
E
Polar

Alaska video clip

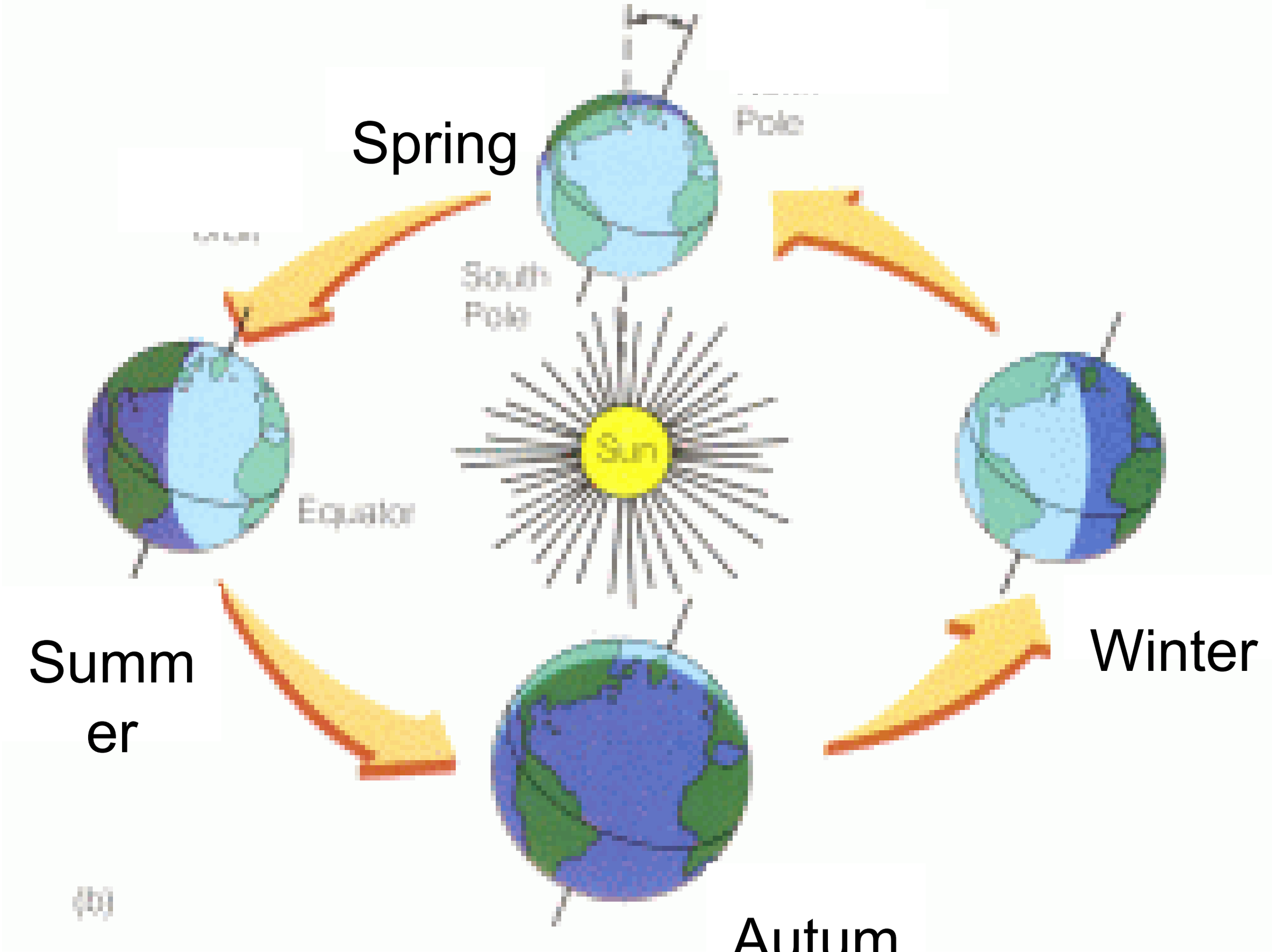
D. What kind of changes occur over time that may affect the climate?

1. Procession

a. The change in the shape of the Earth's orbit around the sun.

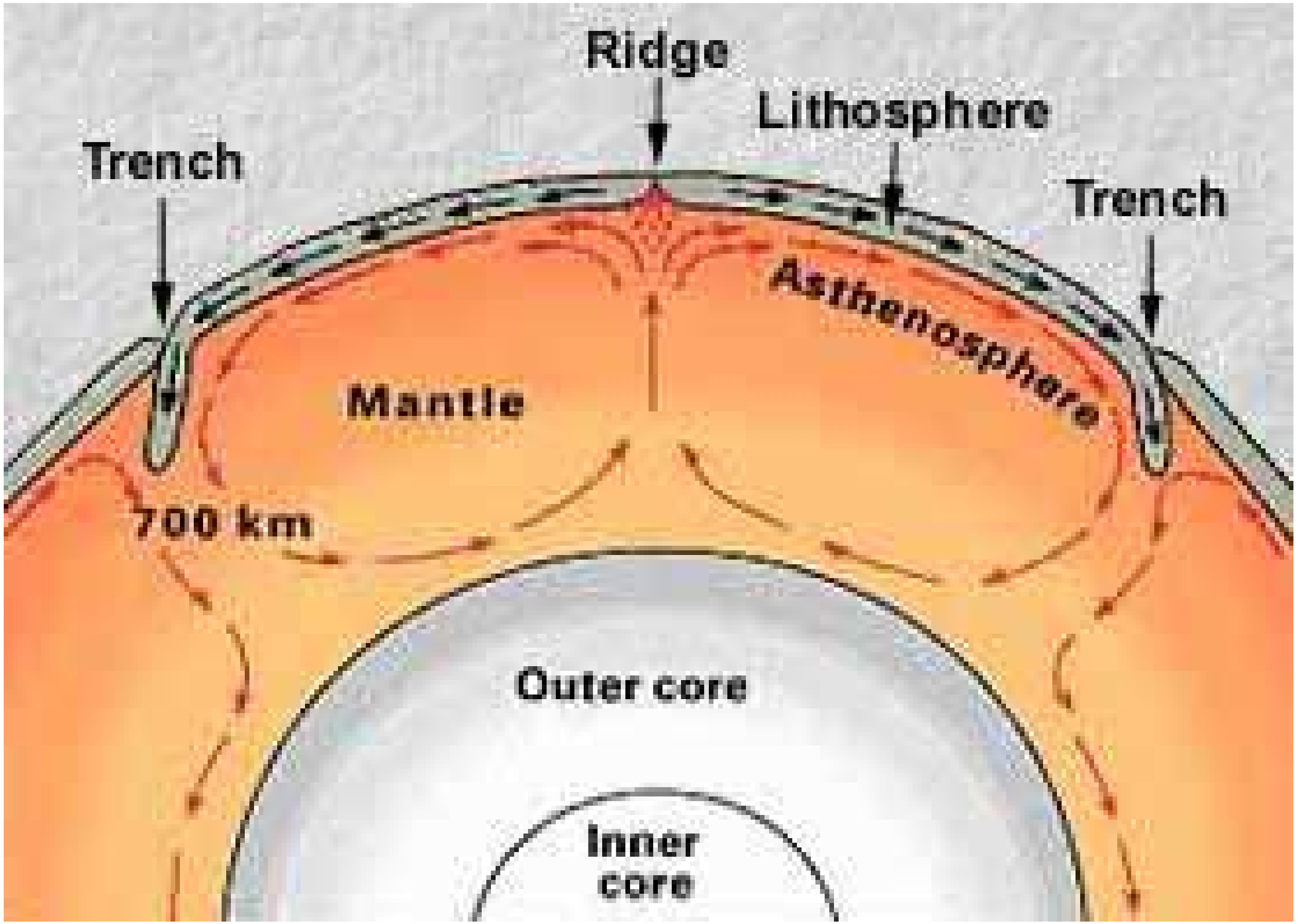
b. It is thought that the shape of Earth's orbit around the sun changes over a 100,000 year cycle.

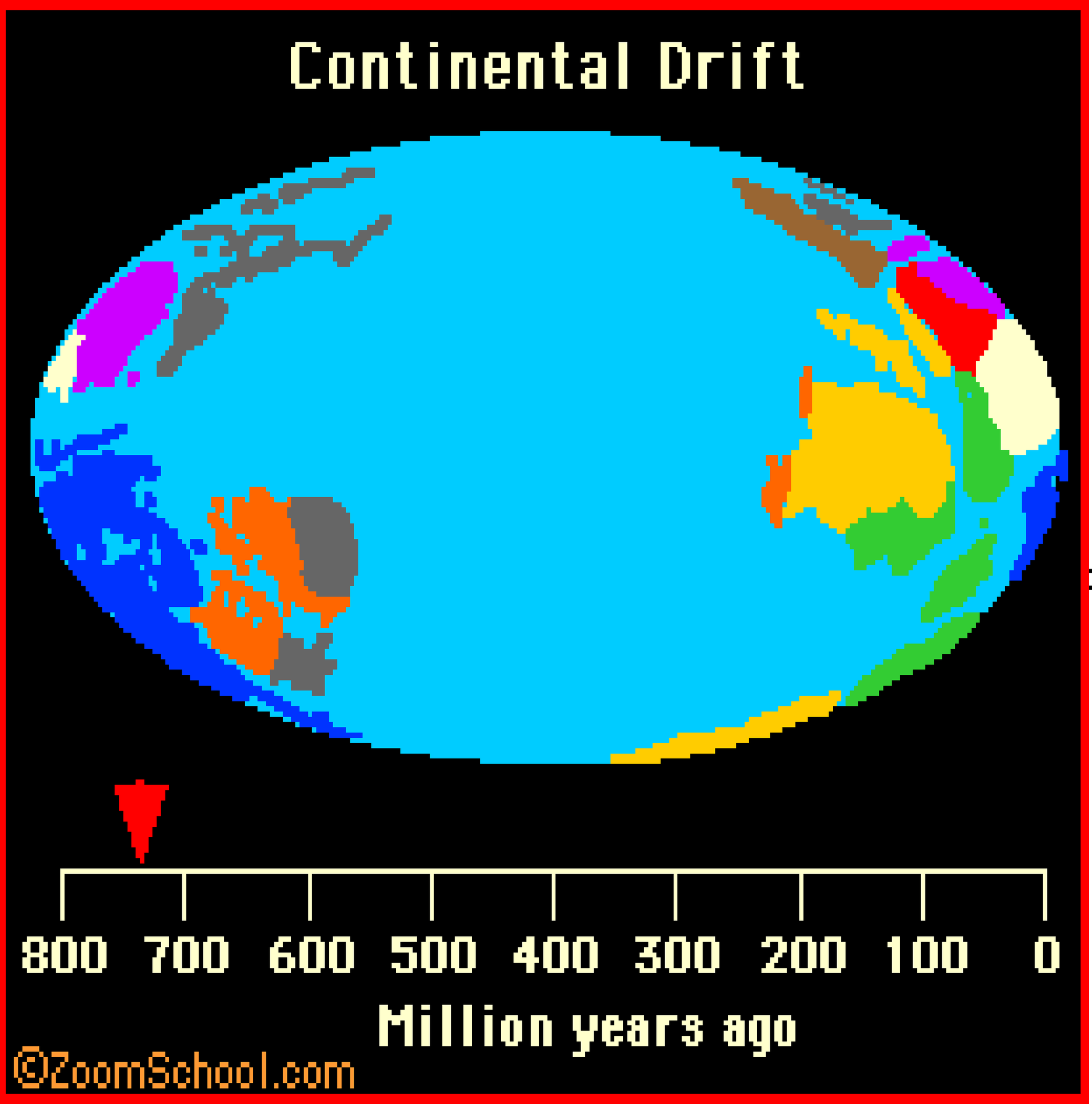
c. When the orbit is more circular rather than an ellipse, Earth is farther from the sun and the temperature becomes colder.


Spring
Pole
South
Pole
Sun
Equator
Summ
er
Winter
Autum

2. Plate movement /Geography

a. Tectonic plates move so they will eventually change the location of landforms, and therefore may affect the climate patterns on the Earth.


Ridge
Lithosphere
Trench
Trench
Asthenosphere
Mantle
700 km
Outer core
Inner
core



Blue-North America

Yellow – Africa

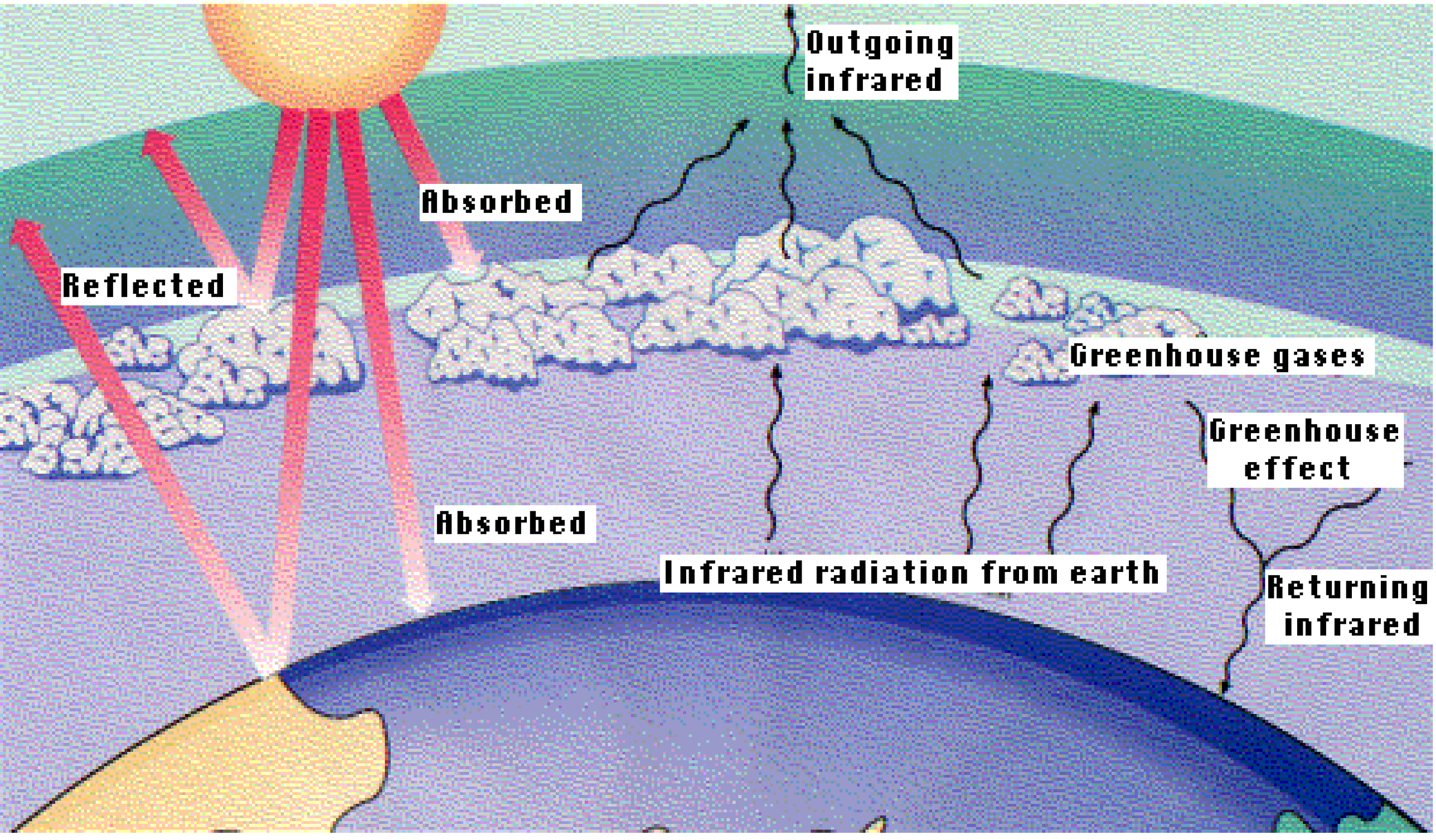
Purple –Australia

Green – South America

3. Atmospheric Conditions

a. An increase in clouds may lead to an increased greenhouse effect trapping gases in the atmosphere making our temperatures rise.

b. It is also believed that an increase in clouds allows them to reflect more solar radiation which produces a cooling effect on the climate.


Outgoing infrared
Absorbed
Reflected
Greenhouse gases
Greenhouse effect
Absorbed
Infrared radiation from earth
Returning infrared

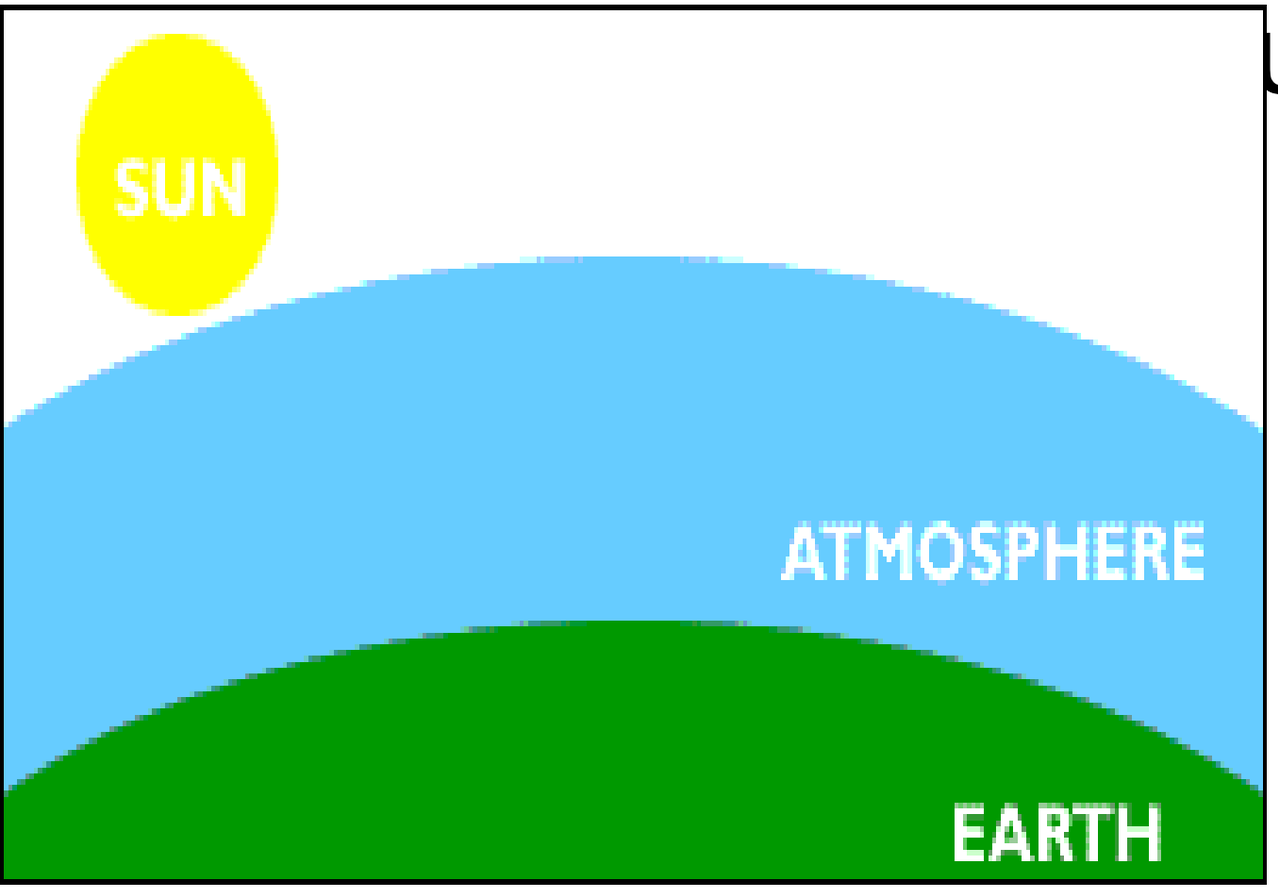
4. Greenhouse Effect & Global Warming

a. Greenhouse Effect- natural warming of Earth's atmosphere

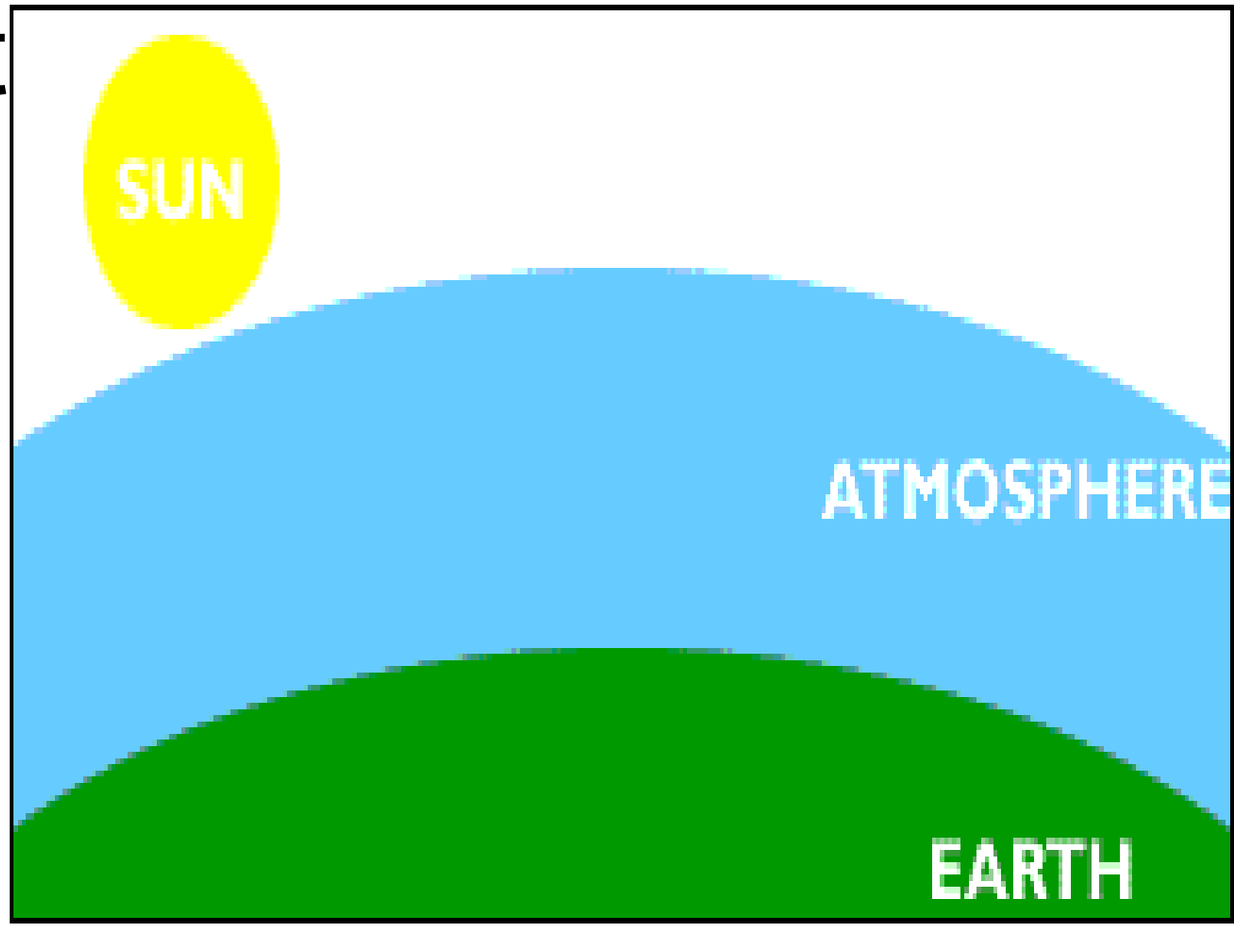
b. Global Warming

Effects of Greenhouse Gases

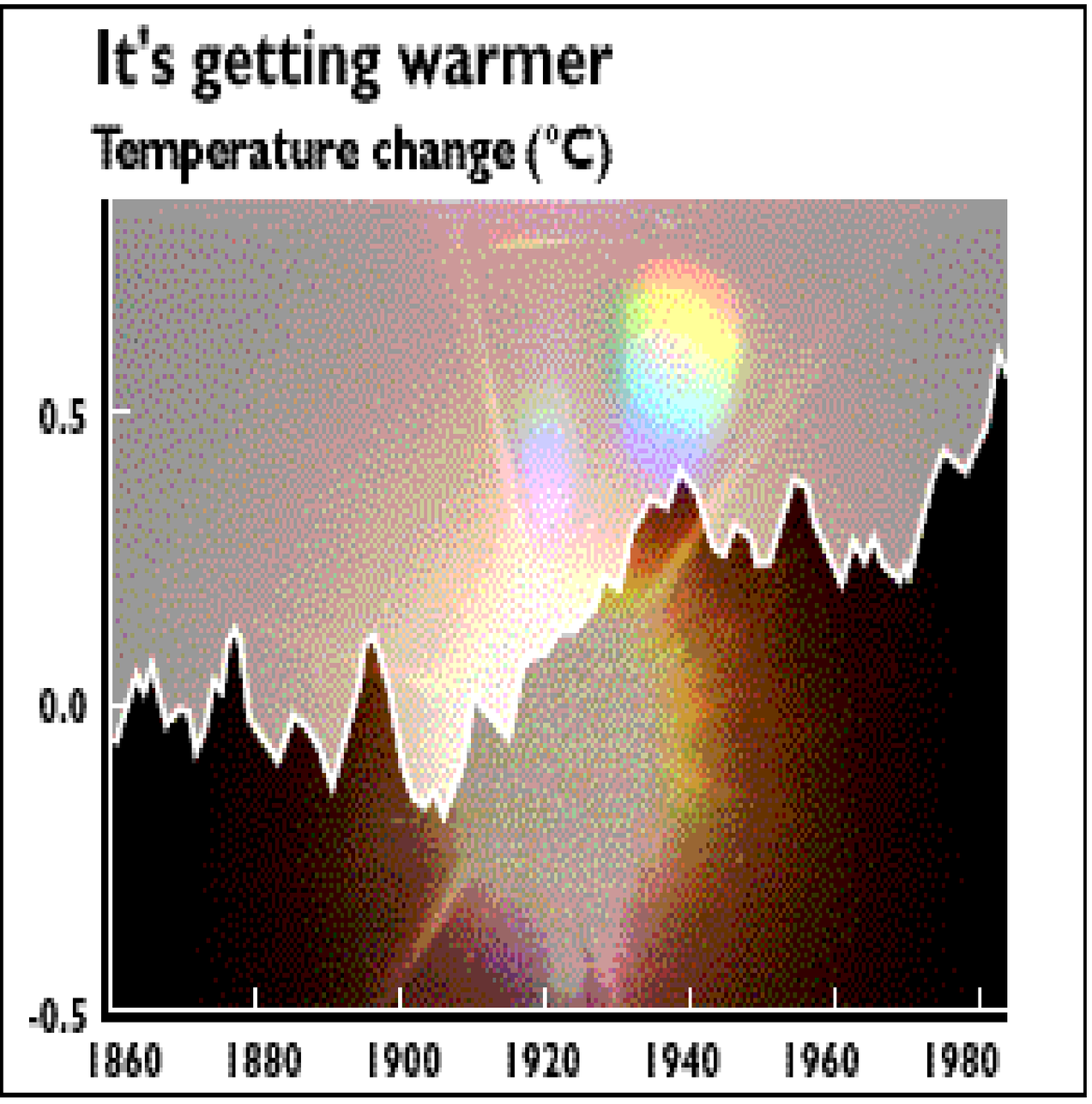
Natural Earth

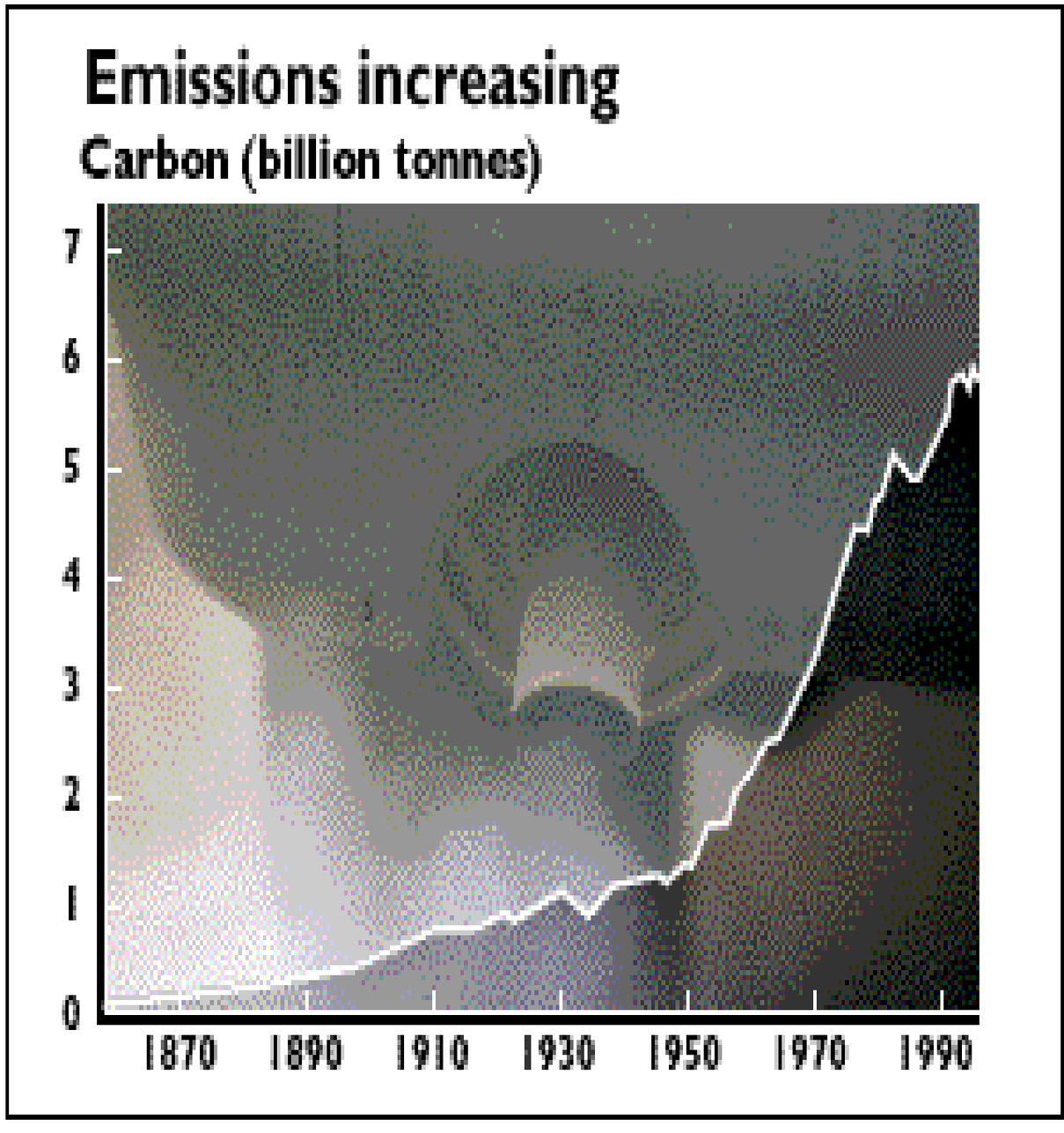


After CO2



Temp vs. CO2


It's getting warmer
Temperature change (°C)
0.5
0.0
-0.5
1860
1880
1900
1920
1940
1960
1980


Emissions increasing
Carbon (billion tonnes)
7
6
5
4
3
2
1
0
1870
1890
1910
1930
1950
1970
1990

5. Volcanoes

a. When a volcano erupts, it puts enormous volumes of dust, ash, smoke & chemicals into the atmosphere.

b. The dust and ash particles in the air block solar radiation from reaching the surface of the Earth. This causes the Earth's temperature to drop.

SUMMARY Climate Controls

	Temperature	Precipitation
Latitude		The low-pressure areas of the ITCZ and the mid-latitudes have precipitation. The poles and horse latitudes usually have little precipitation.
Elevation		Air at higher elevations generally contains moisture.
Nearby water	The temperature range of large bodies of water is small, so coastal areas often have	Large bodies of water add water vapor to the air, so precipitation is more likely downwind of large bodies of water.
Ocean currents	Warm ocean current Cold currents, including upwelling currents, .	Some ocean currents cause fog.
Topography	The leeward side of a mountain range may than the windward side. Mountains can act as barriers to air masses.	The windward side of a mountain range may be the leeward side. Mountains can act as barriers to air masses.
Prevailing winds	Prevailing winds may determine whether air masses arrive from a hot region or from a cold region. See also note at topography.	Prevailing winds may determine whether air masses arrive from a wet region or from a dry region. See also note at topography.
Vegetation		