



Daily Routine

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- Have all necessary materials out
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Bell Work

- What are the four factors that affect climate for an area?
- Choose one of the four factors and explain how it impacts climate?



Earth Science Announcements

District Common Assessment Dec 15

Course Final Dec 18th -19th

Climate



Is climate change
real?



Finish Yesterday's Climate Graph Lab

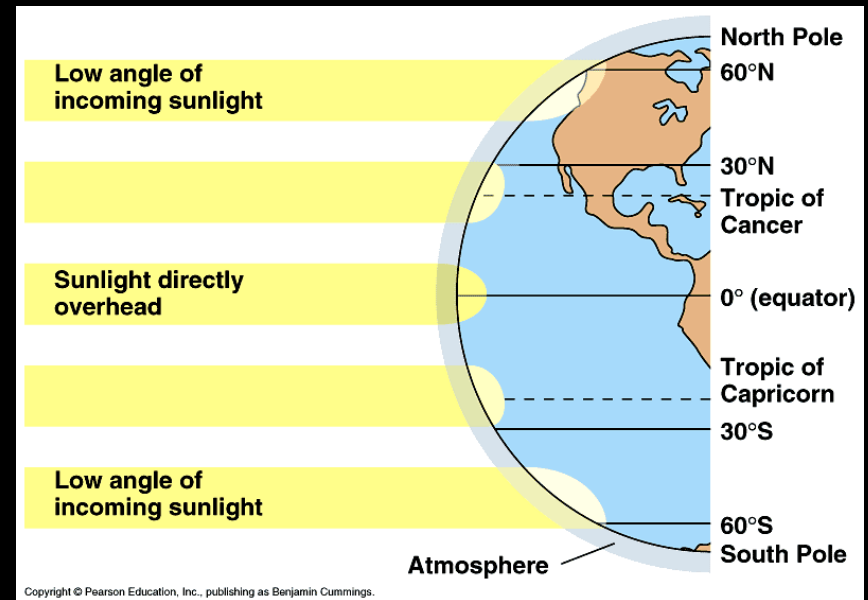
- Complete the graphs
- Answer all questions
- Make sure to answer the last question...question 9...in three thorough sentences on another sheet of paper



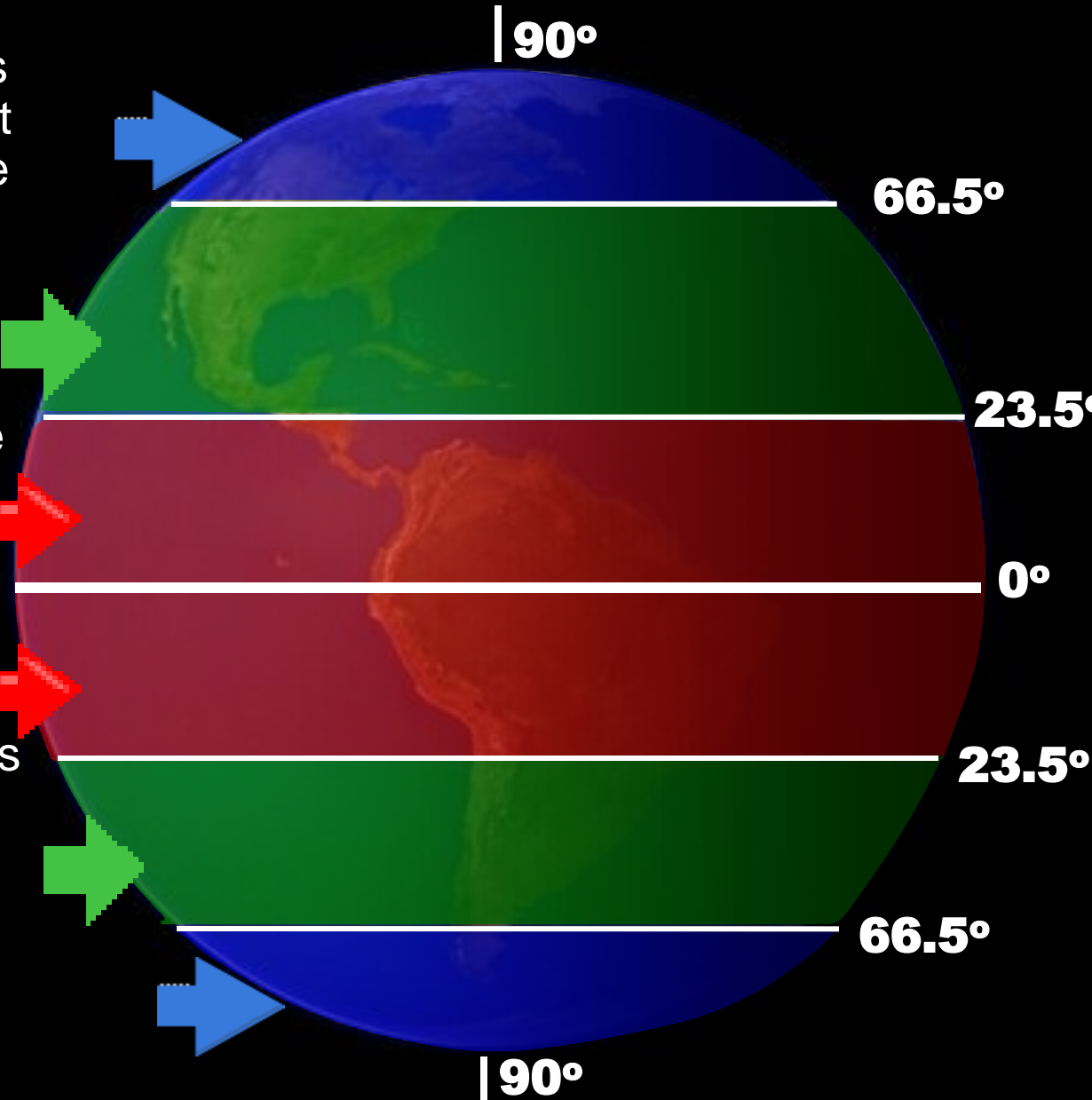
Factors Affecting Climate

4. Latitude

- Affected by Earth's axis tilt which creates seasons
- Close to equator = more direct intense sunlight
- Poles = less direct diffused sunlight
- About 12 hour days around equator
- Variable as you get away from the equator



Latitude Affects Climate



- The further from the equator you go, the more direct the sunlight is.
- The tropics are located between 23.5° and 66.5° latitude.
- Polar zones are low latitudes, have the most direct sunlight, and are the warmest.
- The tropics receive the most direct sunlight and are the warmest.
- Polar zones are cold climates year round.

Latitude Effects Climate

30° North Latitude

Desert climates
are located
Here, air is sinking
Creating High Pressure
at around 30°
(Sunny weather)
Why?
North latitude

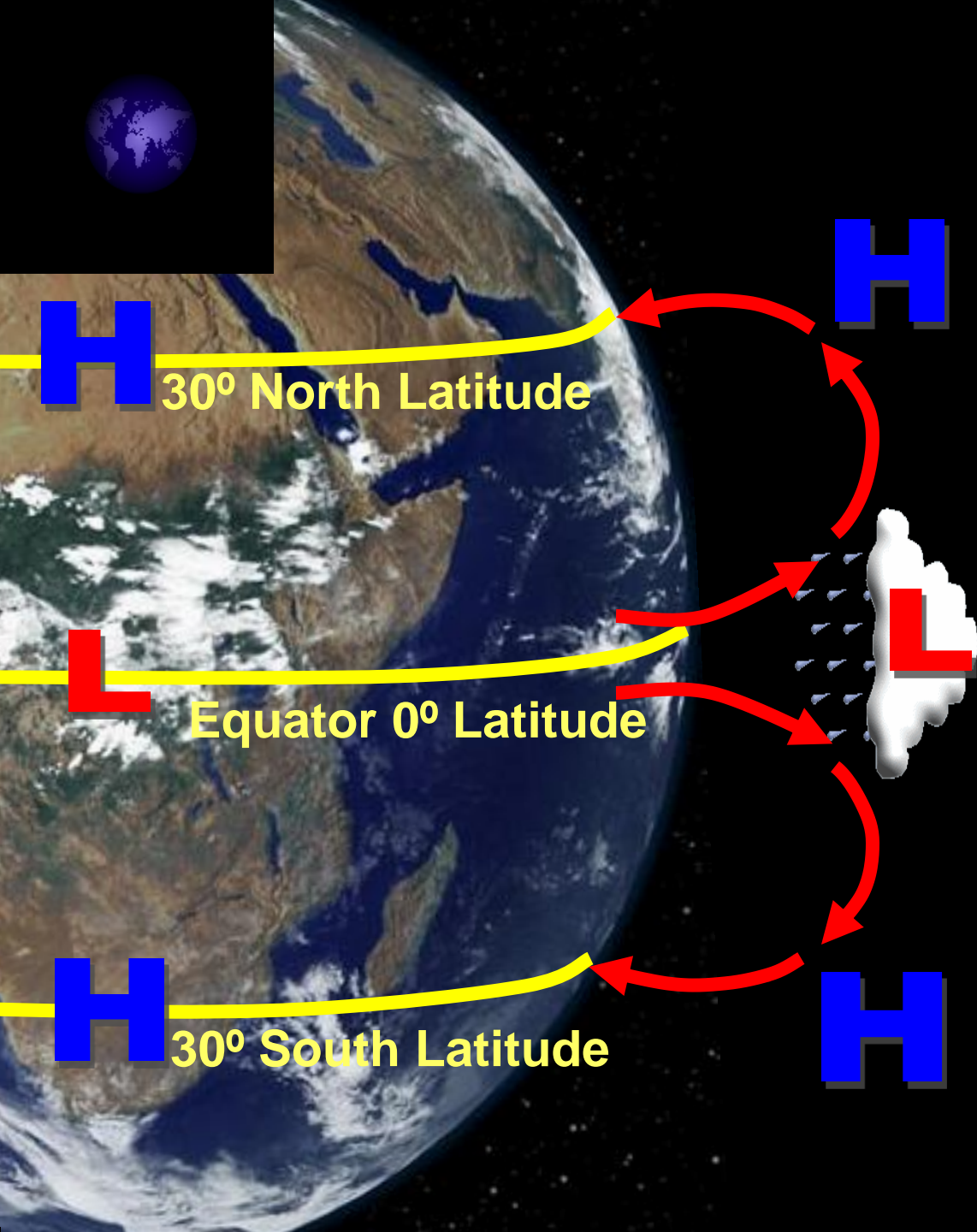
Why?

Equator 0° Latitude

Tropical climates
are located near
Here, air is rising (doldrums)
Creating low pressure

30° South Latitude

(Cloudy Rainy weather)
Desert climates
are located
Here, air is sinking
Creating High Pressure
at around 30°
(Sunny weather)
South latitude



Warm Humid Tropical air
Rises at the Doldrums
0° latitude -- Equator

Whenever air rises,
clouds form and we
Get precipitation

Low Pressure

Here we get tropical
rainforests

Air sinks at 30°

Latitude creating sunny

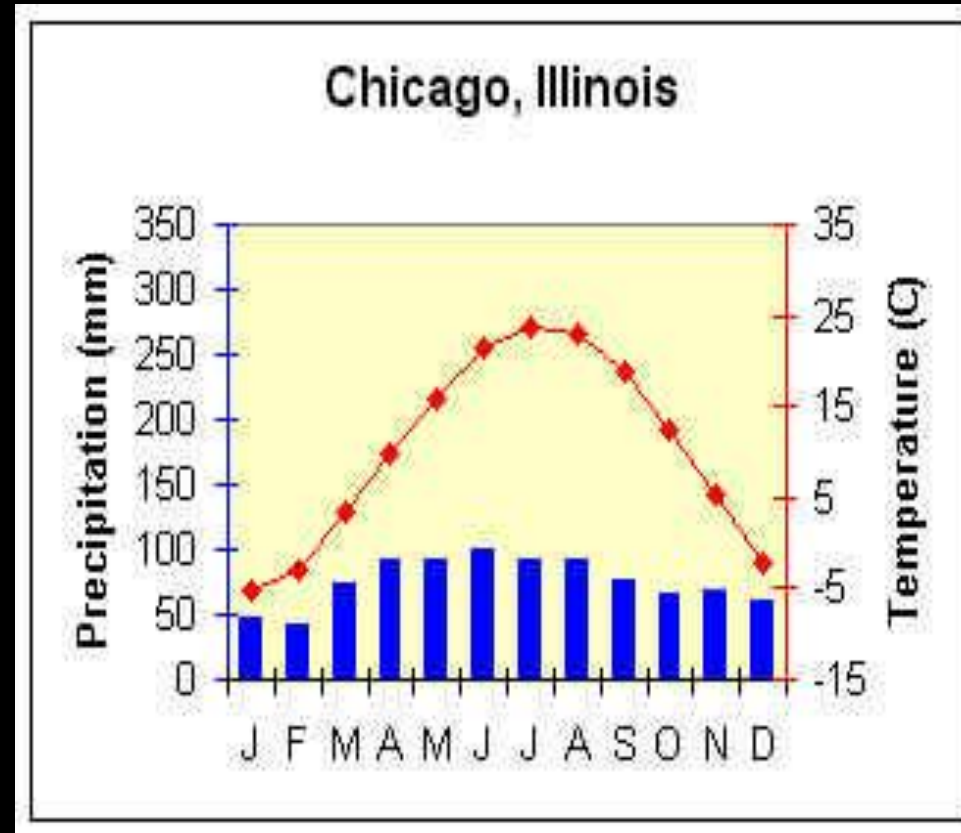
High Pressure

Here we get Deserts



Continental Climates

- Cities which are located in the middle of continents experience freezing winters and hot summers
- Therefore, cities like Chicago experience dramatic temperature fluctuations over the course of a year:
Hot summers and
Cold winters

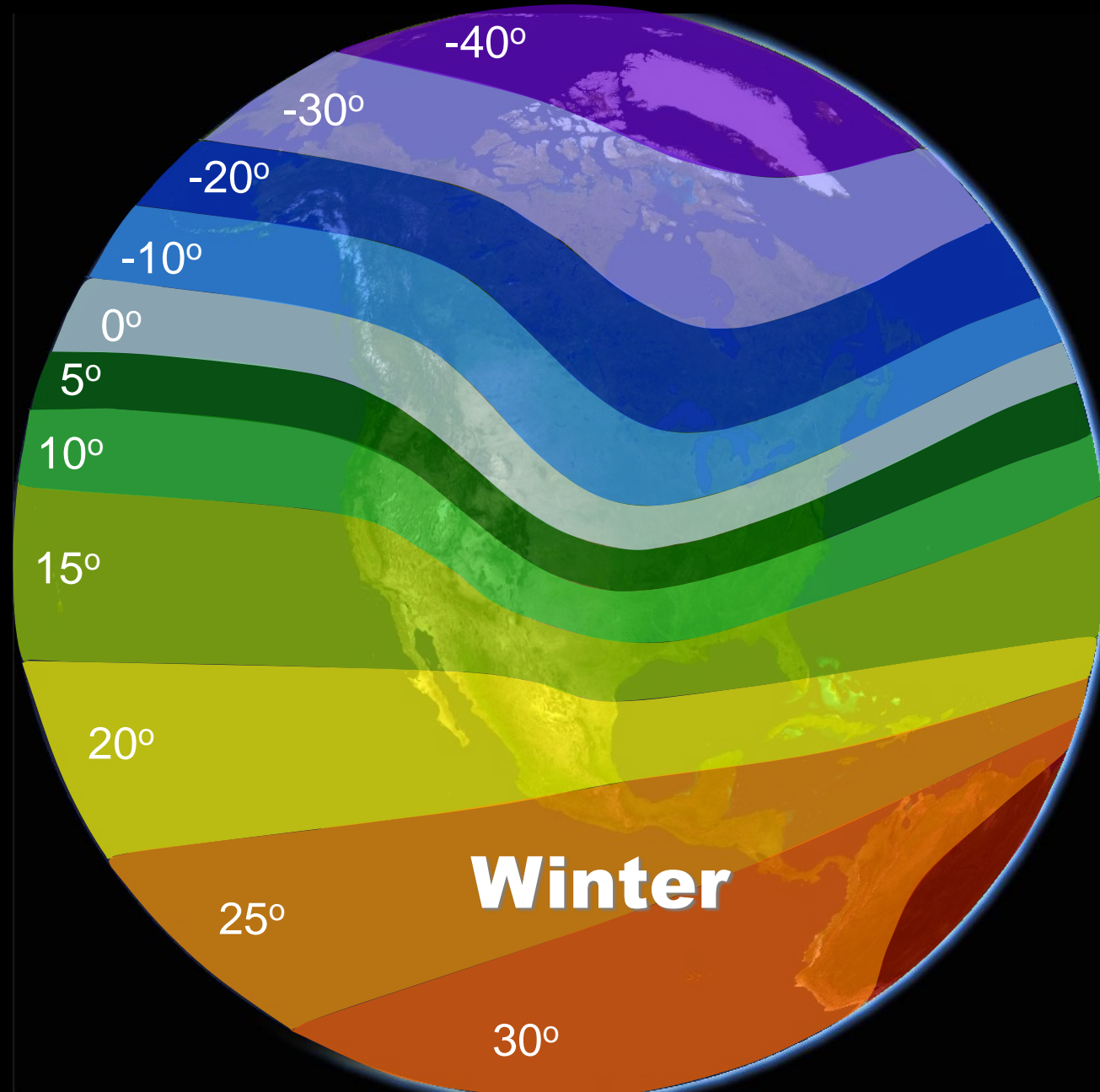




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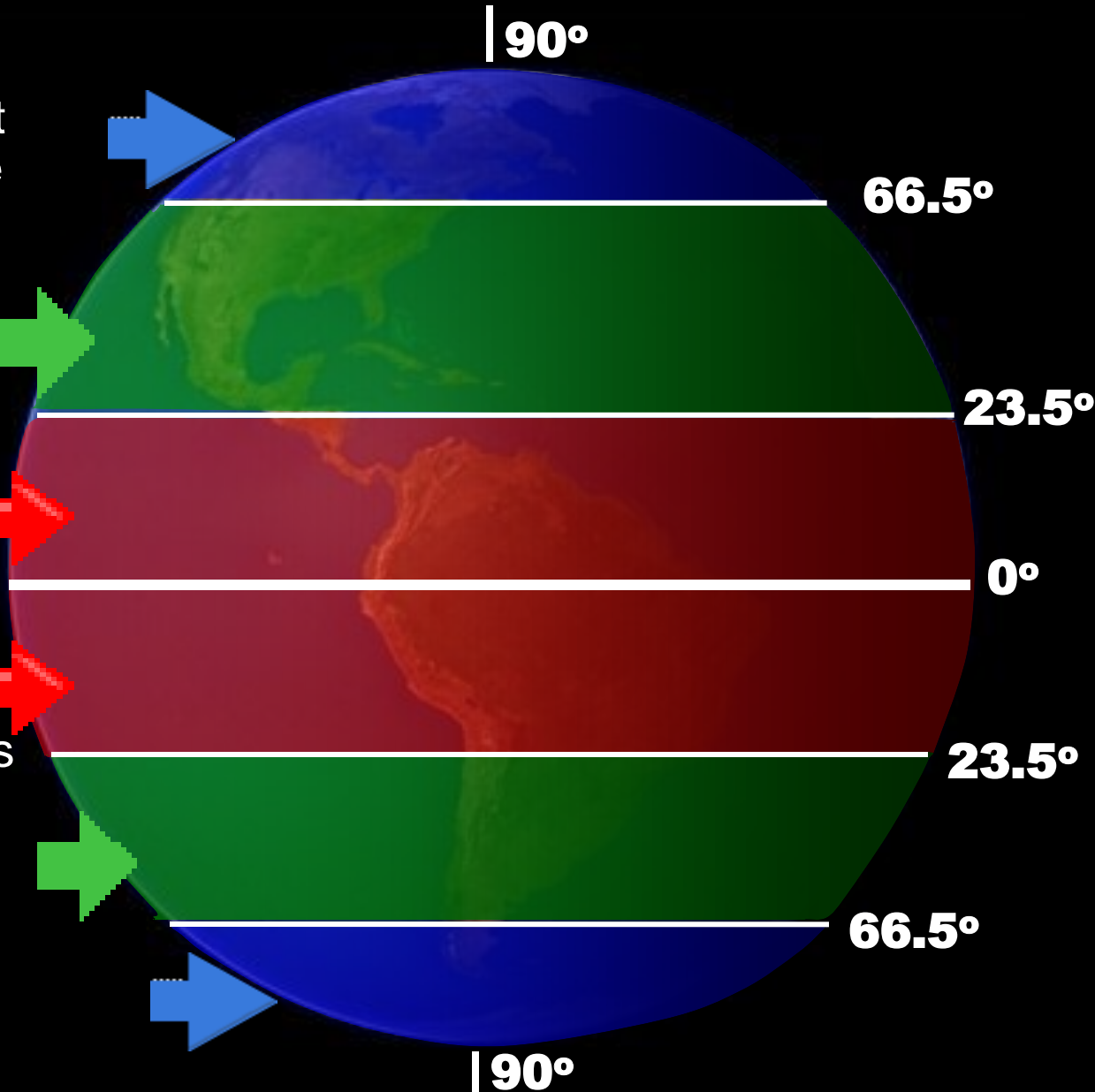
- Observe the behavior of temperatures as they cross over the North American Continent

- How do temperatures increase or decrease as they cross a continent???

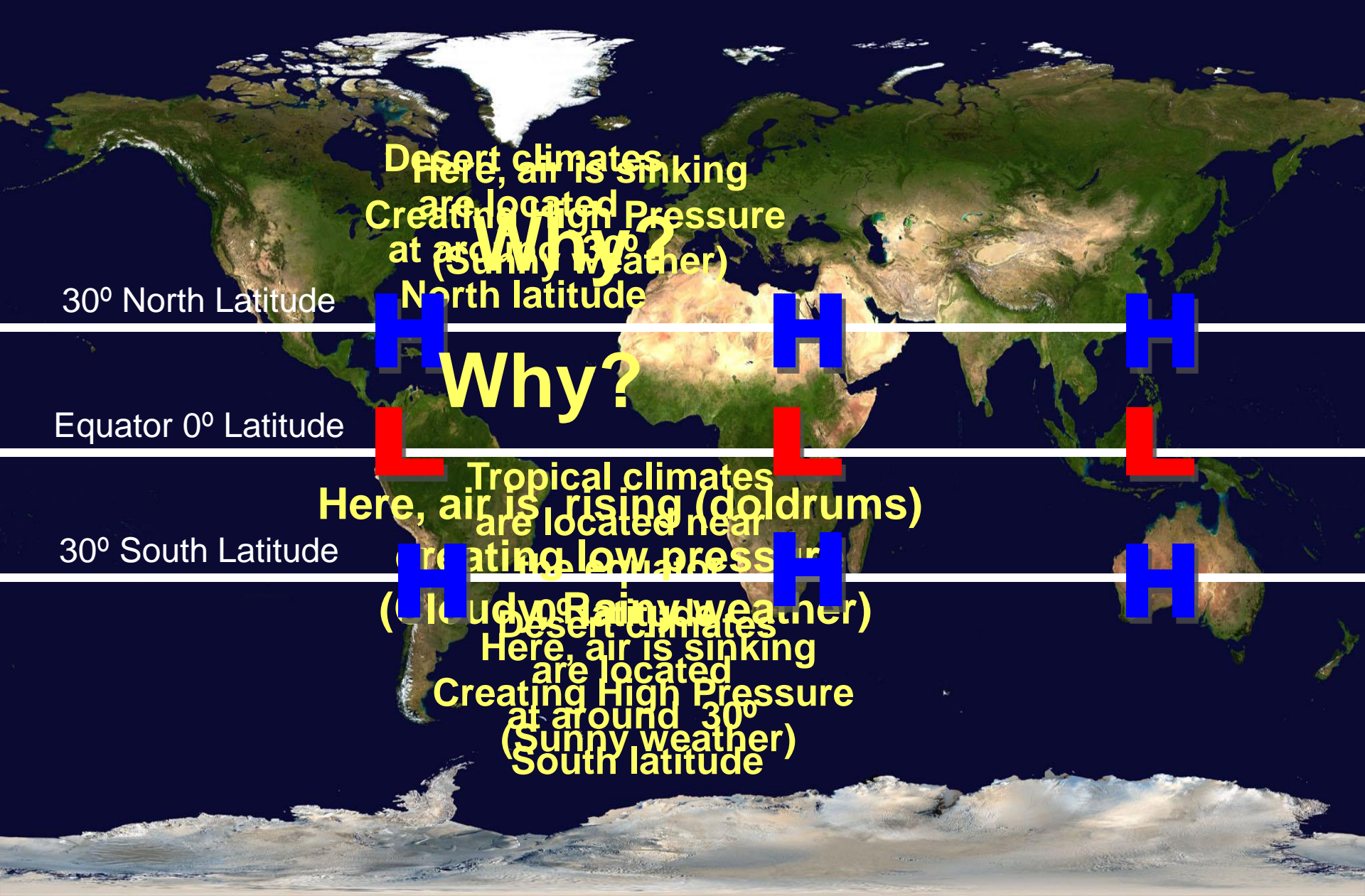


Latitude Affects Climate

- As we move farther from the equator, the amount of direct sunlight we receive decreases.
- The light that reaches the Earth is spread over a larger area, so each square meter receives less energy.
- At the poles, the sun is low in the sky, and the light rays are spread over a very large area. This means that the poles receive the least amount of energy.
- At the equator, the sun is high in the sky, and the light rays are concentrated over a small area. This means that the equator receives the most energy.
- The tropics (between 23.5° and 23.5° latitude) receive a lot of energy and are warm.
- The temperate zones (between 23.5° and 66.5° latitude) receive a moderate amount of energy and have a moderate climate.
- The polar zones (above 66.5° latitude) receive very little energy and are cold.



Latitude Effects Climate



Desert climates
Here, air is sinking
Creating High Pressure
at around 30°
(Sunny weather)
Why?
North latitude

30° North Latitude

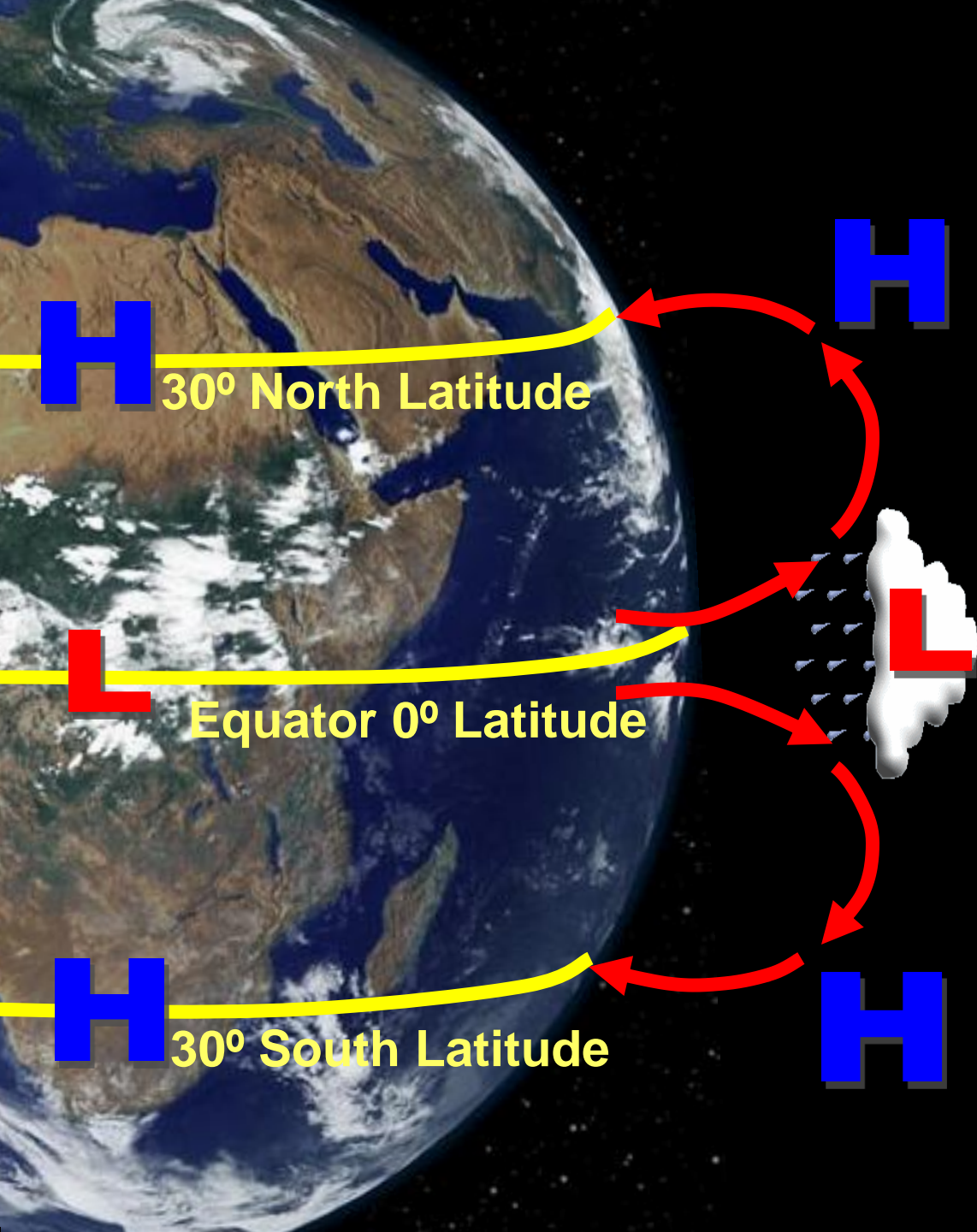
Why?

Equator 0° Latitude

Tropical climates
Here, air is rising (doldrums)
are located near
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30° South Latitude

(Cloudy Rainy weather)
Desert climates
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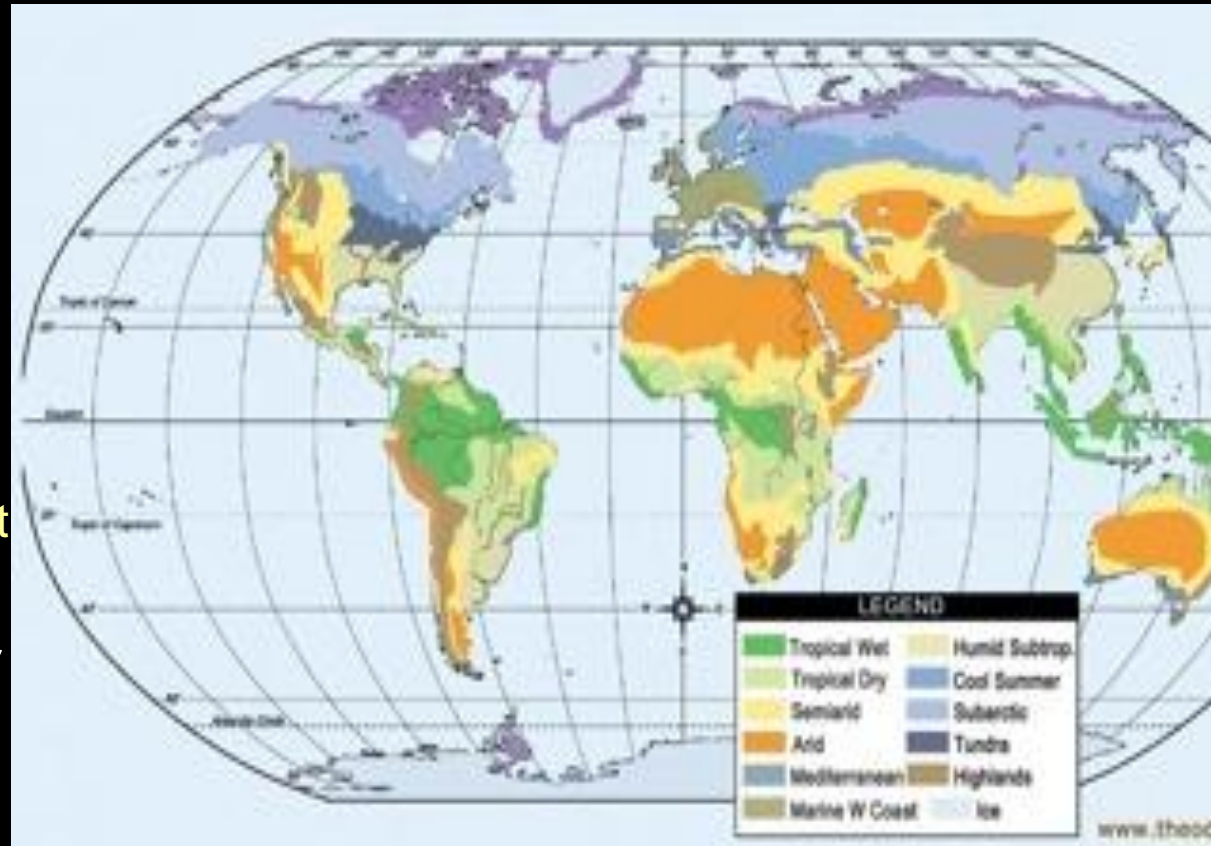
Air sinks at 30°
Latitude creating sunny

High Pressure

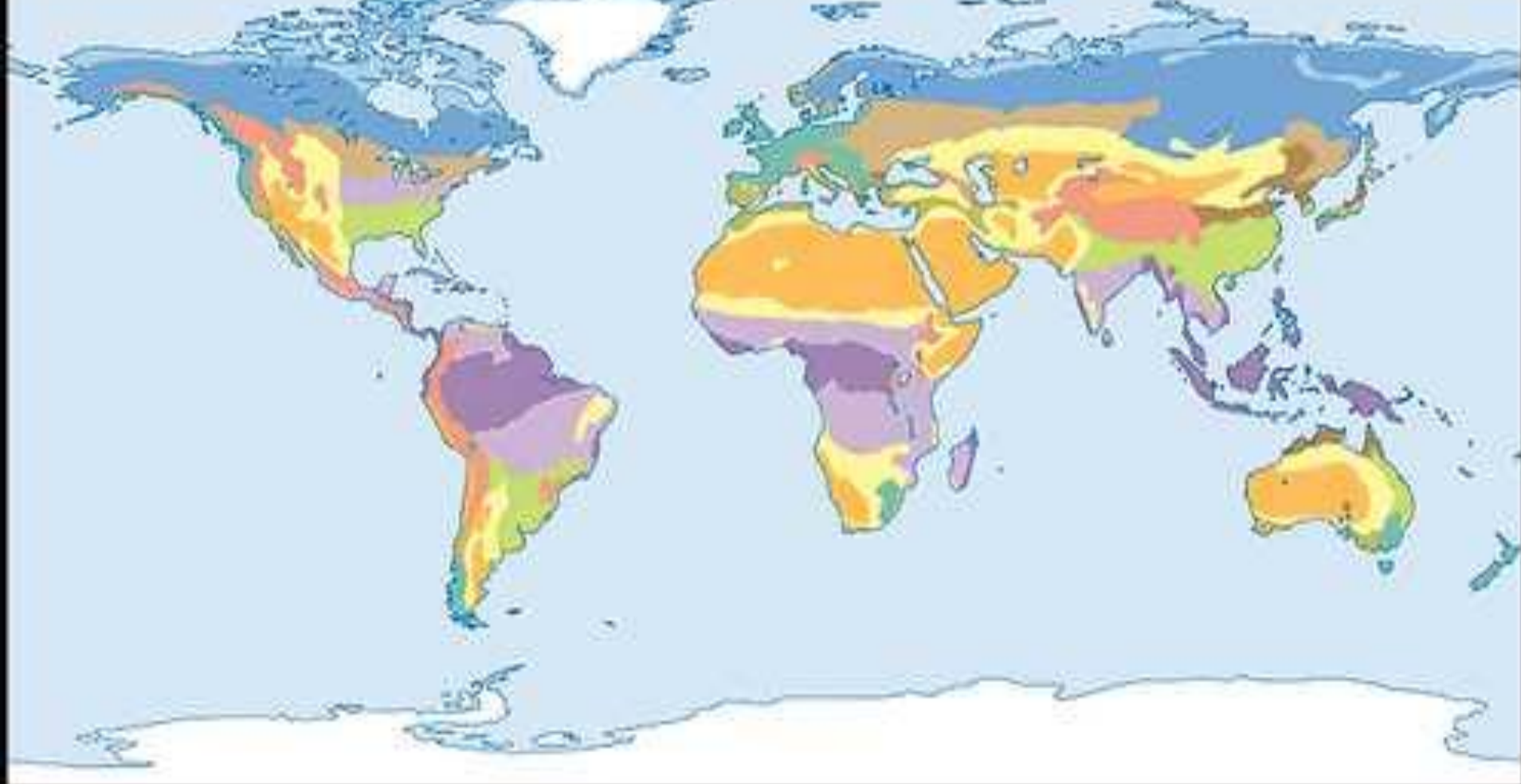
Here we get Deserts

Climate Classification

- How should we classify climates?
- As it turns out, climates are classified by **temperature** and **precipitation** (how hot or wet a place is)
- ***There are 5 major climate types:***



- Climate types include: ***Tropical Climates, Temperate or Moderate Climates, Arid Dry Climates, Continental Climates, and Polar Climates***



■ Tropical wet

■ Tropical wet and dry

■ Semi arid

■ Arid

■ Mediterranean

■ Humid sub-tropical

■ Maritime

■ Continental cool summer

■ Continental warm summer

■ Sub arctic

■ Tundra

■ Mountain

■ Ice cap



Climate Mapping Lab



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Bell Work

- What type of winters and summers do continental areas experience?
- Why do deserts form at 30 degrees N and S of the Equator?



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Finish Yesterday's Climate Map Lab

- Complete the graphs
- Answer all questions
- Turn in work in the front
- You have 10 minutes to finish this assignment



Climate Lab