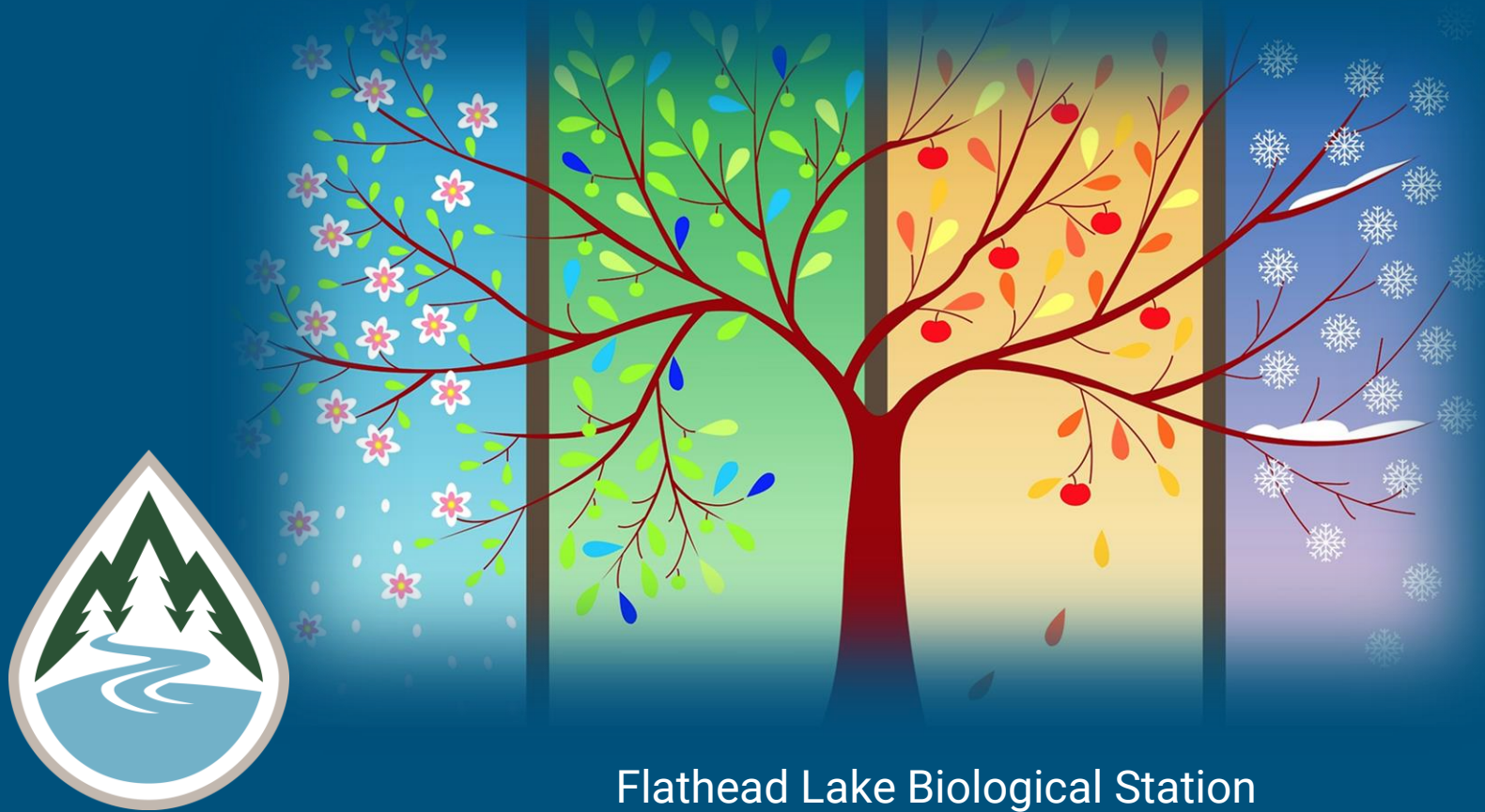


Four Seasons & the Water Cycle



Flathead Lake Biological Station



Sketchnotes Review

Visual Note-taking: "THREE" THINGS TO REMEMBER

THE BASICS

NOT MERELY WRITING THE USUAL WAY:

TEXT

DISTINCTION

HIERARCHY

3 1 2

IMPORTANT

DETAILS, DESCRIPTIONS, ETC.

VISUAL MNEMONICS

draw on images

EMPHASIS

YOU CALL THE SHOTS

A PICTURE IS WORTH A THOUSAND WORDS:

CHARTS MAPS AND GRAPHS

VAMPIRES

DO THINGS YOUR WAY SO EVERYTHING MAKES MORE SENSE.

WHY VISUAL NOTE-TAKING?

HELP YOU REMEMBER

Visual Note-taking

enhances memory

Improves understanding

Way more FUN than

BORING TEXT NOTE BOOKS



Sketchnotes Review

Sketchnote Tips

Carol Anne McGuire

Lettering

• Print (easy to read)

High Low

SKINNY FAT

ALL CAPS
Small CAPS

Kinder

FANCY

≡ Fast

Reverse

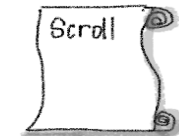
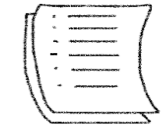
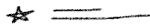
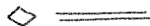
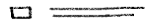
BLOCK

3D

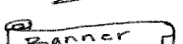
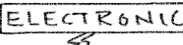
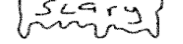
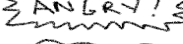
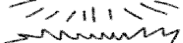
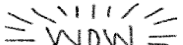
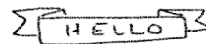
DASH

Script

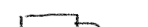
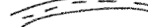
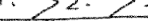
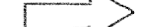
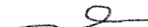
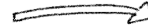
Bullets



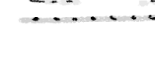
Frames



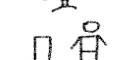
Connectors



Shadows

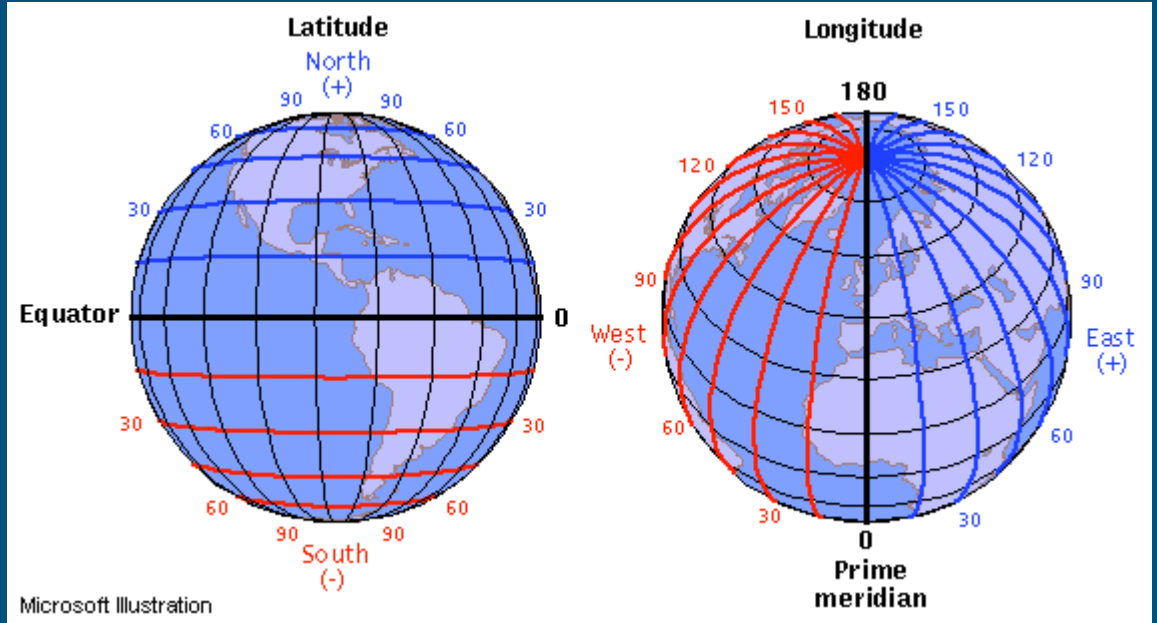
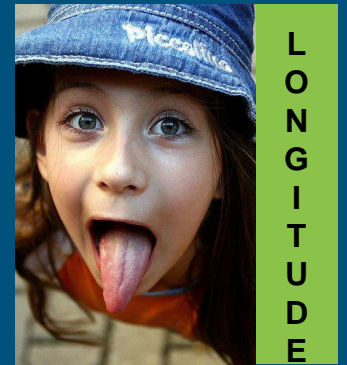


People



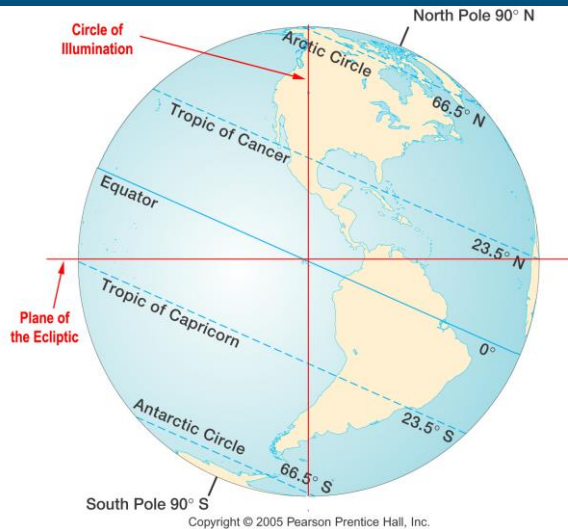


Geography Review





The Four Seasons



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The Earth is tilted and so the amount of sunlight varies throughout the year.

Jun. 21st is the
LONGEST day
in the year

June
Solstice

Spring

Summer

March Equinox

Winter

Autumn

Dec. 21st is the
SHORTEST
day in the year

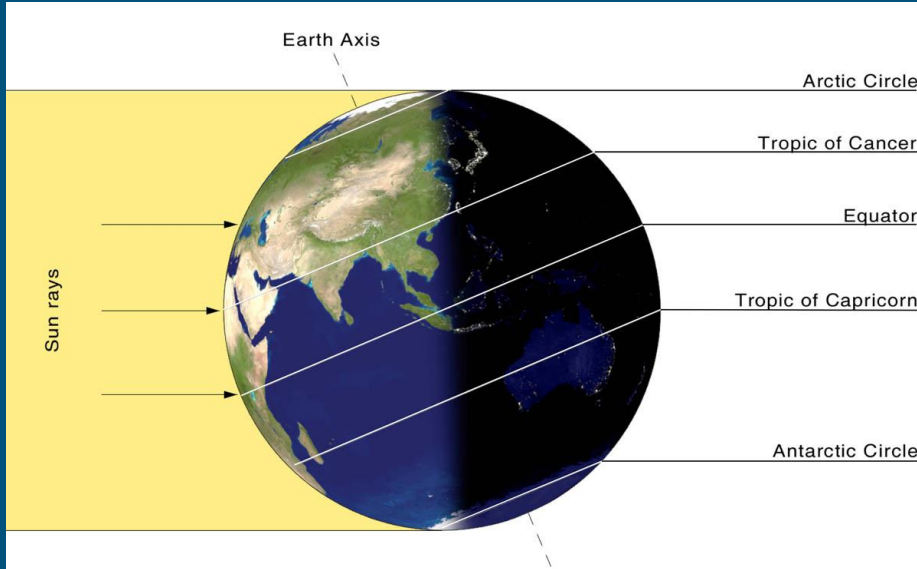
December
Solstice

September Equinox

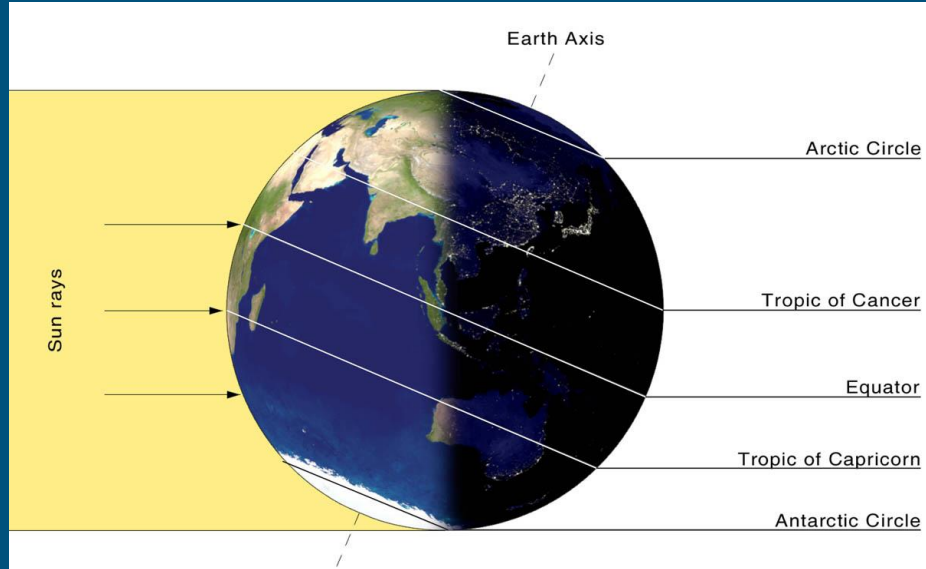
© timeanddate.com



Is it Winter or Summer???



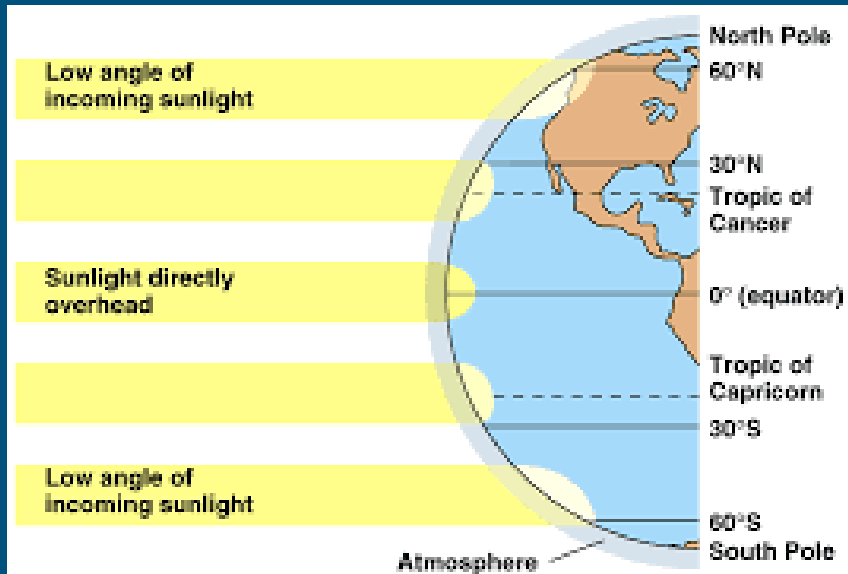
The summer in the Northern Hemisphere is
the winter in the Southern Hemisphere



The winter in the Northern Hemisphere is
the summer in the Southern Hemisphere

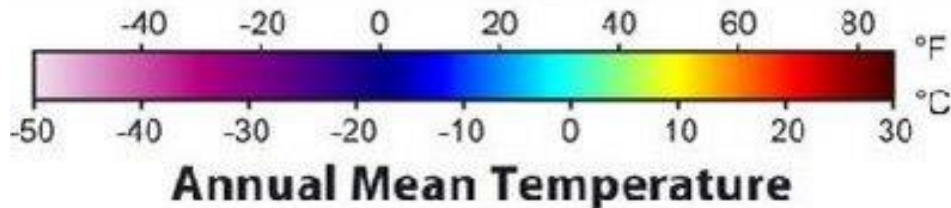
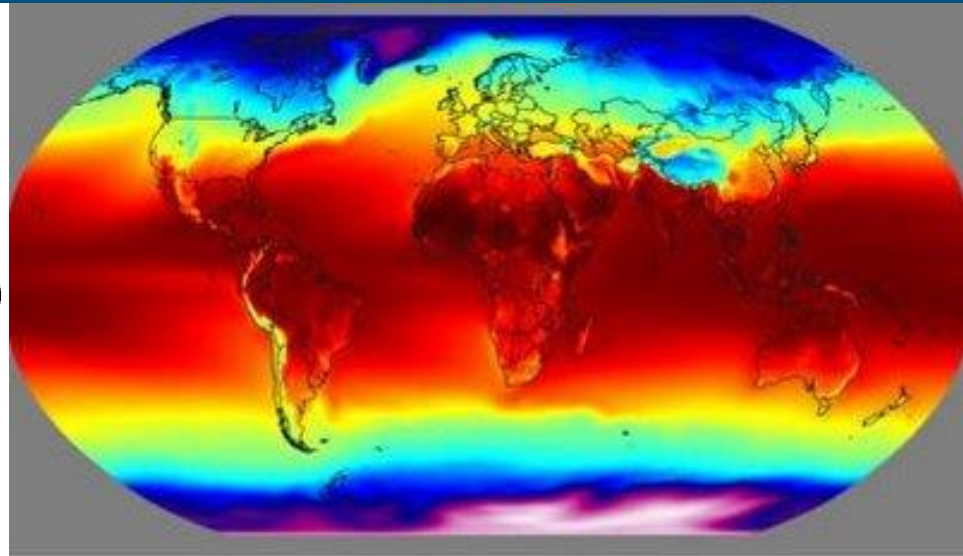


How Does the Amount of Sunlight Vary by Latitude?



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There is **MORE DIRECT SUNLIGHT** at the **equator**...which leads to **MORE EVAPORATION!**



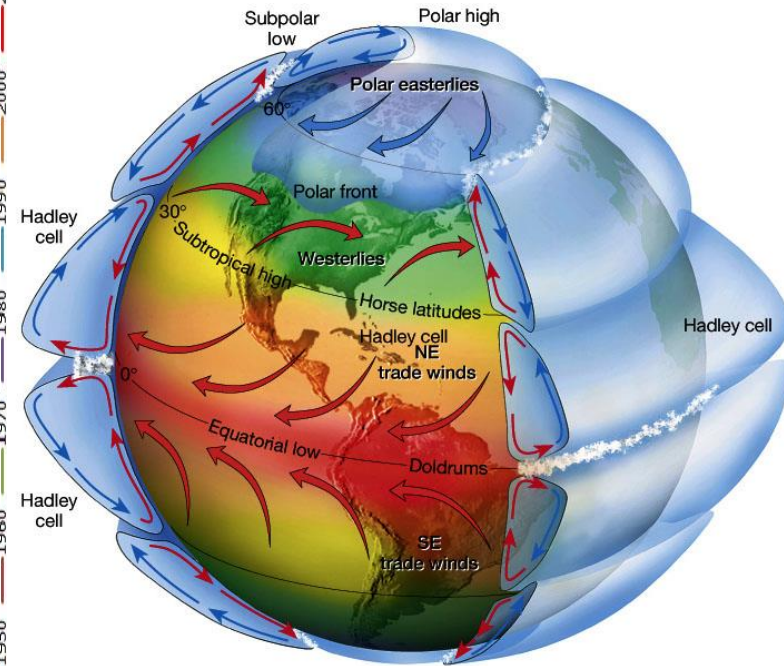
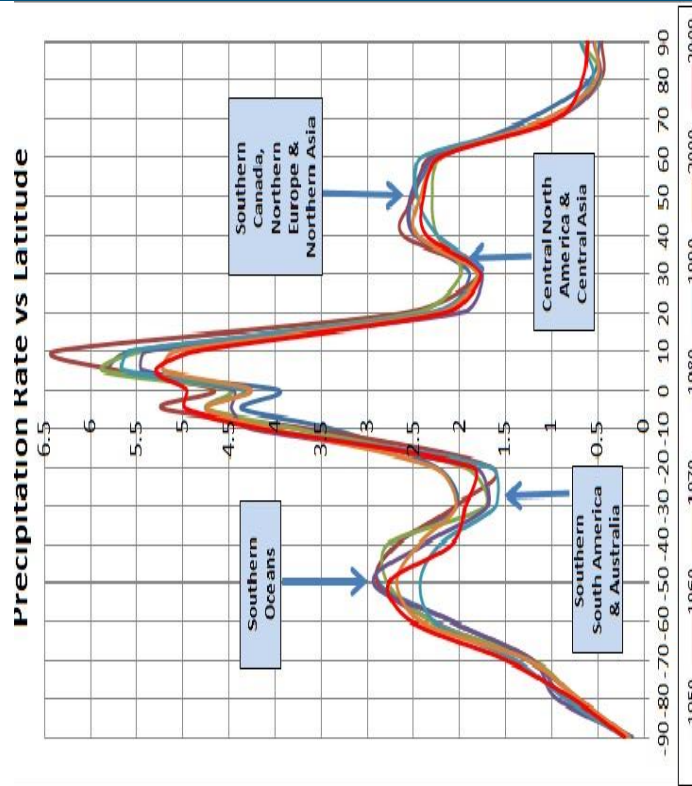


How Does the Sun Impact the Water Cycle?

The **WARM, MOIST (light) AIR RISES** at the equator

As it moves towards the poles it **COOLS (gets heavy) DRIES, AND SINKS** at 30°

It **rises at 60°** and **sinks again at the poles**

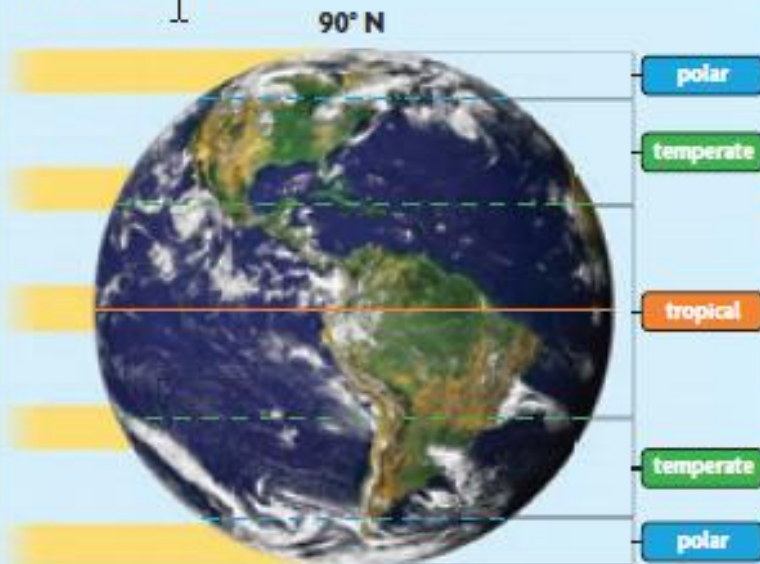




How Does Uneven Sunlight Create Three Climate Zones?

FIGURE 15.3 Climate Zones

The uneven heating of Earth by the Sun results in three different climate zones.



POLAR CLIMATE

The polar climate zone is located in far northern and far southern reaches of the planet, where the temperature is typically cold and often below freezing.

TROPICAL CLIMATE

The tropical climate zone, which surrounds the equator, runs from the tropic of Cancer to the tropic of Capricorn and is characterized by warm, moist conditions.

TEMPERATE CLIMATE

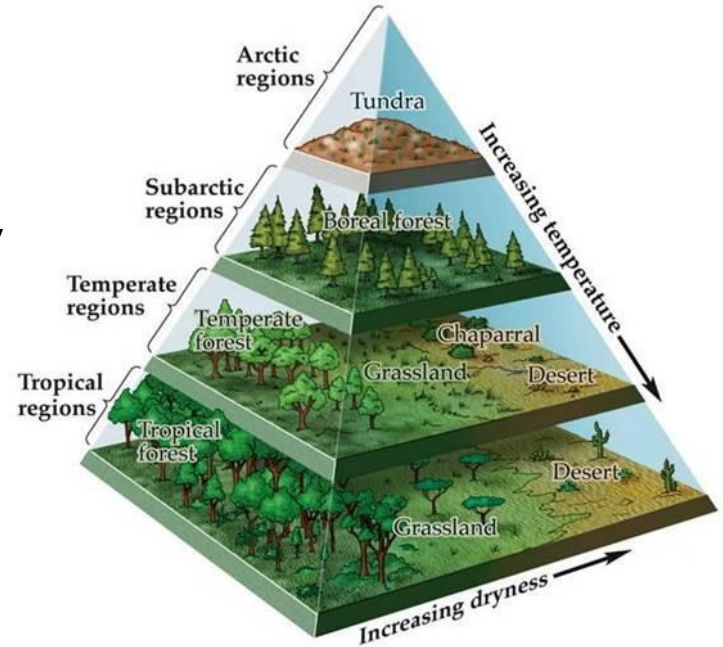
The temperate climate zone is located in the broad area lying between the polar and tropical climate zones. This zone experiences summer and winter seasons of about equal length.



What is a Terrestrial Biome?

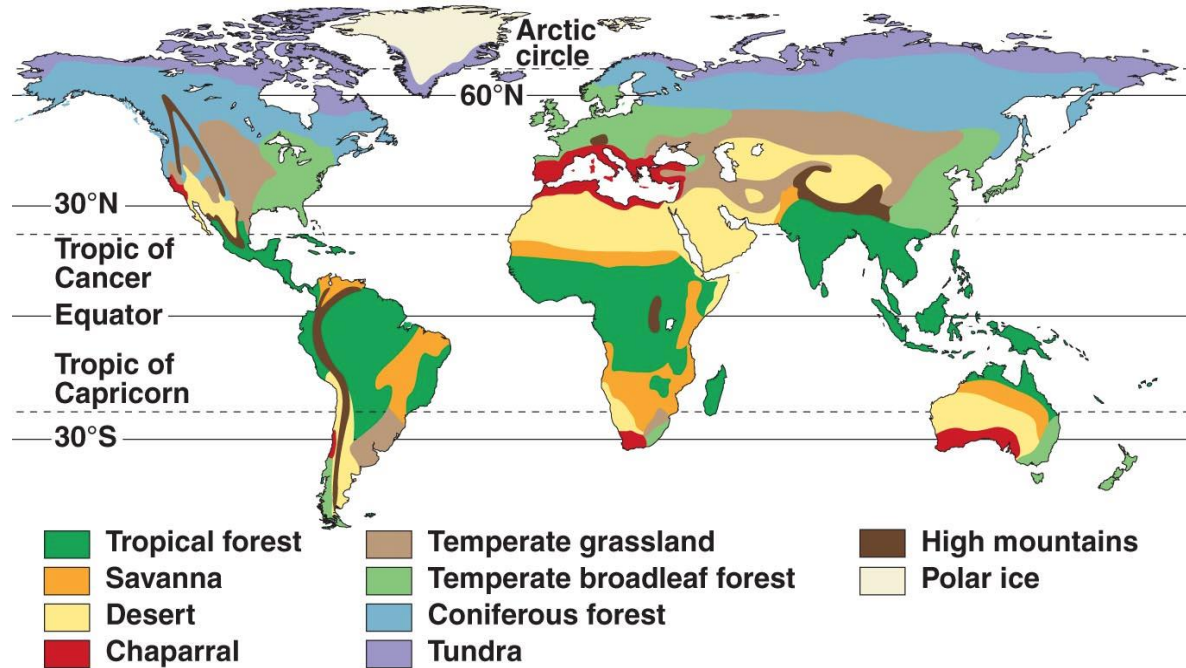
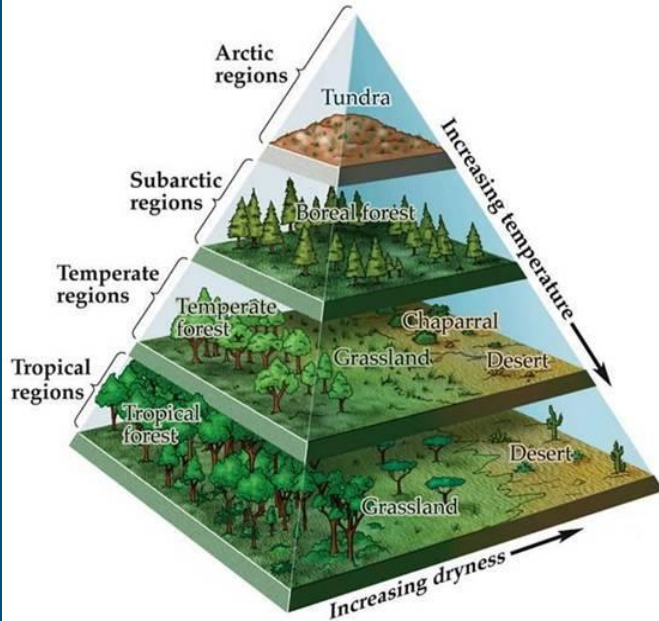
BIOME: A large community of plants and animals that live in a distinct region. Biomes are defined by their climate and vegetation.

CLIMATE: Patterns of **rainfall** and **temperature** over time.





How Does the Water Cycle Impact Climate?



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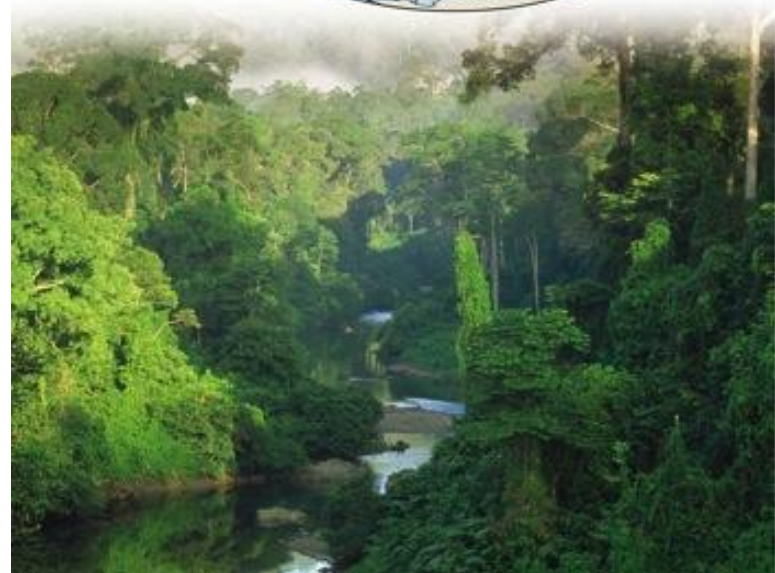
Notice where all of the tropical forests, deserts, and temperate areas are!



Terrestrial Biomes

TROPICAL FOREST:

- Warm temps all year
- High precipitation
- Structured, layered tree canopy
- Diverse animals
 - Monkeys, birds, insects, snakes, bats, frogs, tigers, etc.





Terrestrial Biomes

DESERT:

- Low rainfall (<30cm/year)
- All life adapted to conserve water
- Growth and reproduction tied to seasonal rains
- Shrubs, cacti, succulents
- Animals that can live in high temps
 - Ants, sparrows, rodents, lizards, snakes, etc.





Terrestrial Biomes

TEMPERATE BROADLEAF FOREST:

- High rainfall and snowfall
- Hot summers & cold winters
- 4 distinct seasons
- Varied shrubs and deciduous trees
- Many migrating & hibernating animals
 - Mice, squirrels, birds, foxes, black bears, mountain lions, etc.





Terrestrial Biomes

CONIFEROUS FOREST/TAIGA:

- High elevations/latitudes
- Harsh snowy winters
- Shorter, cool summers
- Many cone bearing conifers, mosses, lichens, & shrubs
- Many migrating & hibernating animals
 - Moose, deer, elk, hares, wolves, lynx, owls, bears, migratory birds, etc.

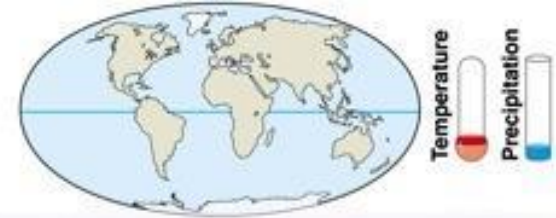




Terrestrial Biomes

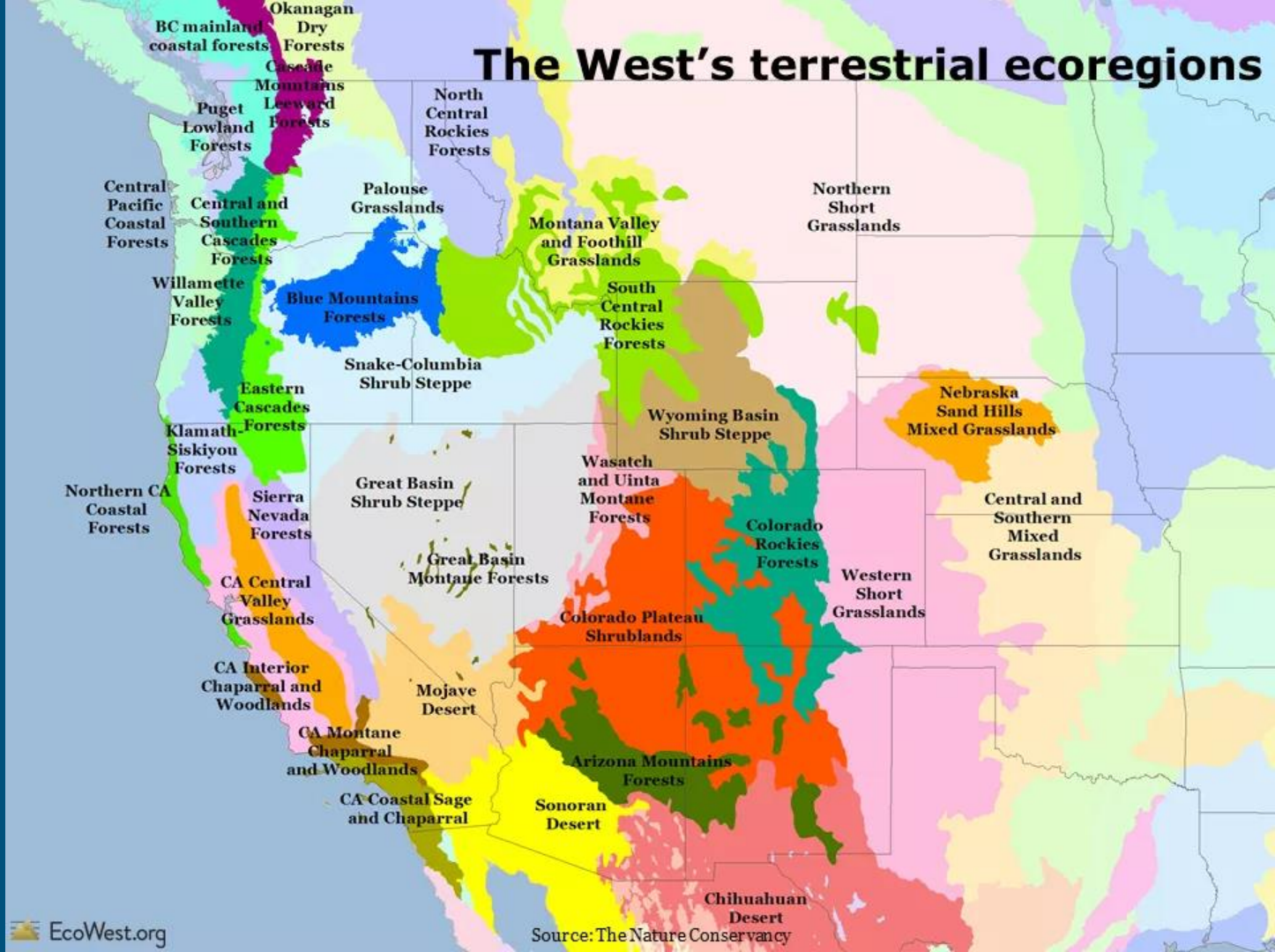
POLAR ICE:

- High latitudes
 - North of Arctic Tundra & Antarctica
- Extremely cold year round
- Low precipitation
- Mosses and lichens
- Many animals with more insulation
 - Arctic: polar bears, seals, walrus, etc.
 - Antarctic: penguins, seals, whales, etc.



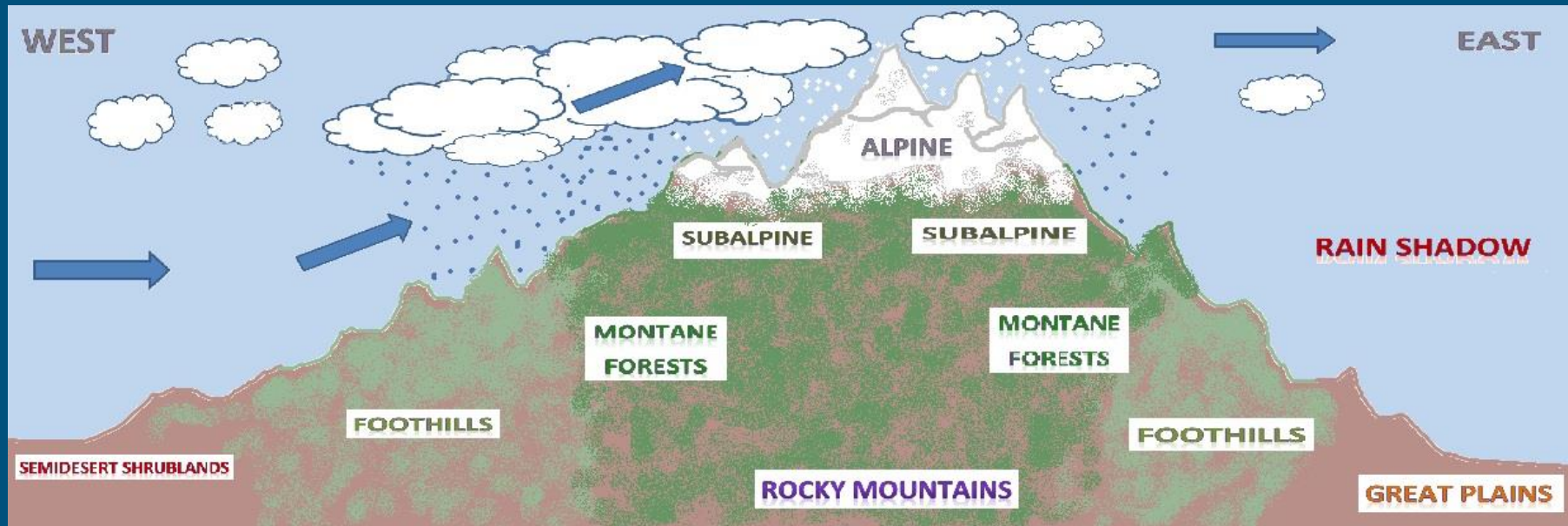


How Does the Water Cycle Impact Climate in the West U.S.?





How Do the Rocky Mountains Impact The Water Cycle?

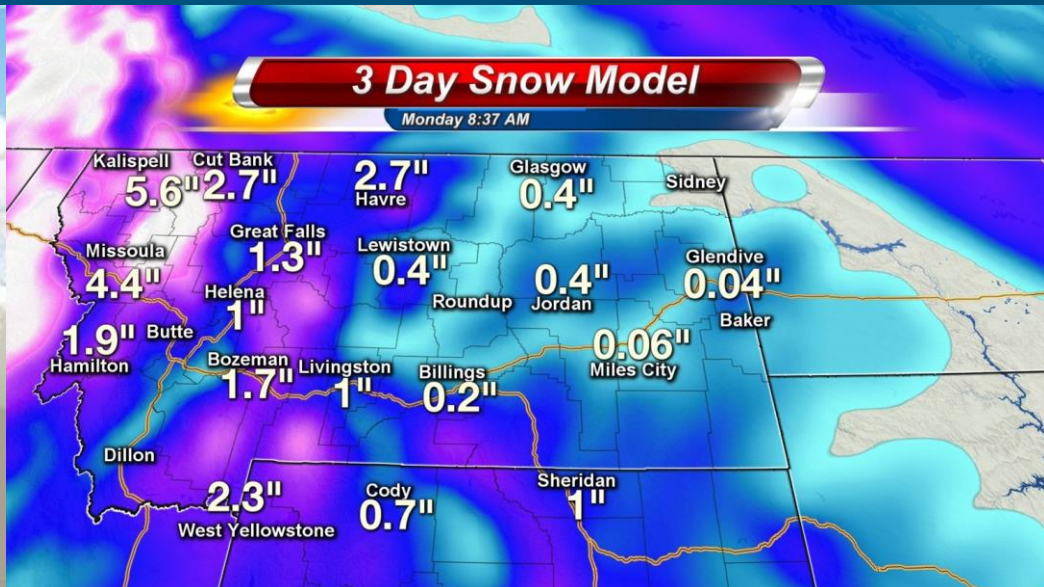
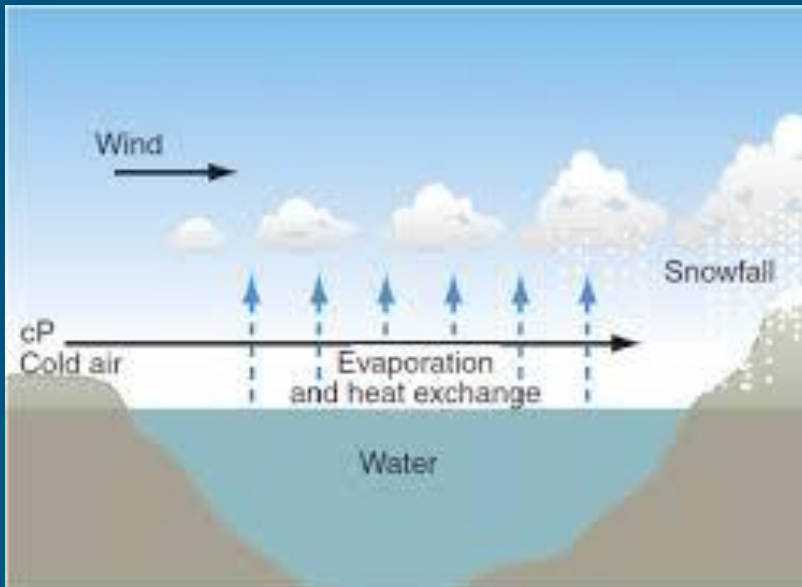


Local geography also affects climate

- Altitude, nearby bodies of water, & mountains...we have all three!



How Do the Rocky Mountains Impact The Water Cycle?



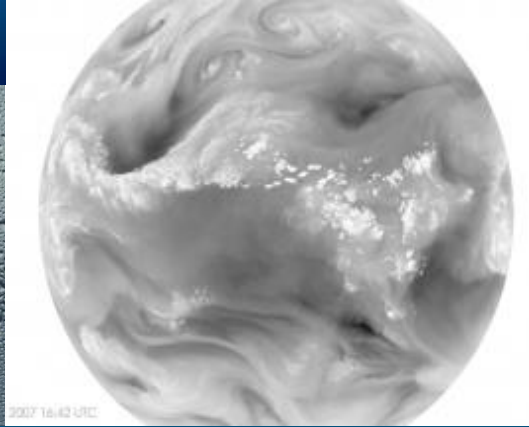
Local geography also affects climate

- Altitude, nearby bodies of water, & mountains...we have all three!



Water is life!

Click [HERE](#) to watch water vapor moving on Earth.



How can you help to protect it!



How Does Climate Change Impact the Water Cycle?

Click [here](#) to check out this great video of the Mendenhall Glacier in Alaska!

Click [here](#) to check out this eye opening look at the Columbia Glacier in Alaska!

Click [here](#) to see the impressive Ilulissat Glacier in Greenland!