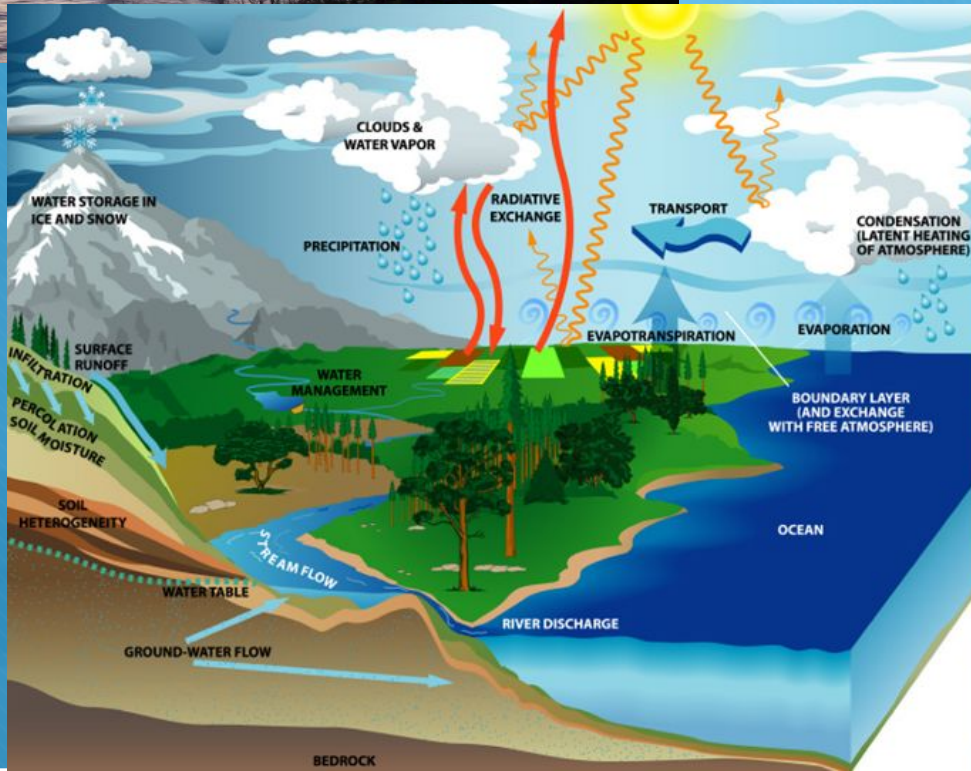


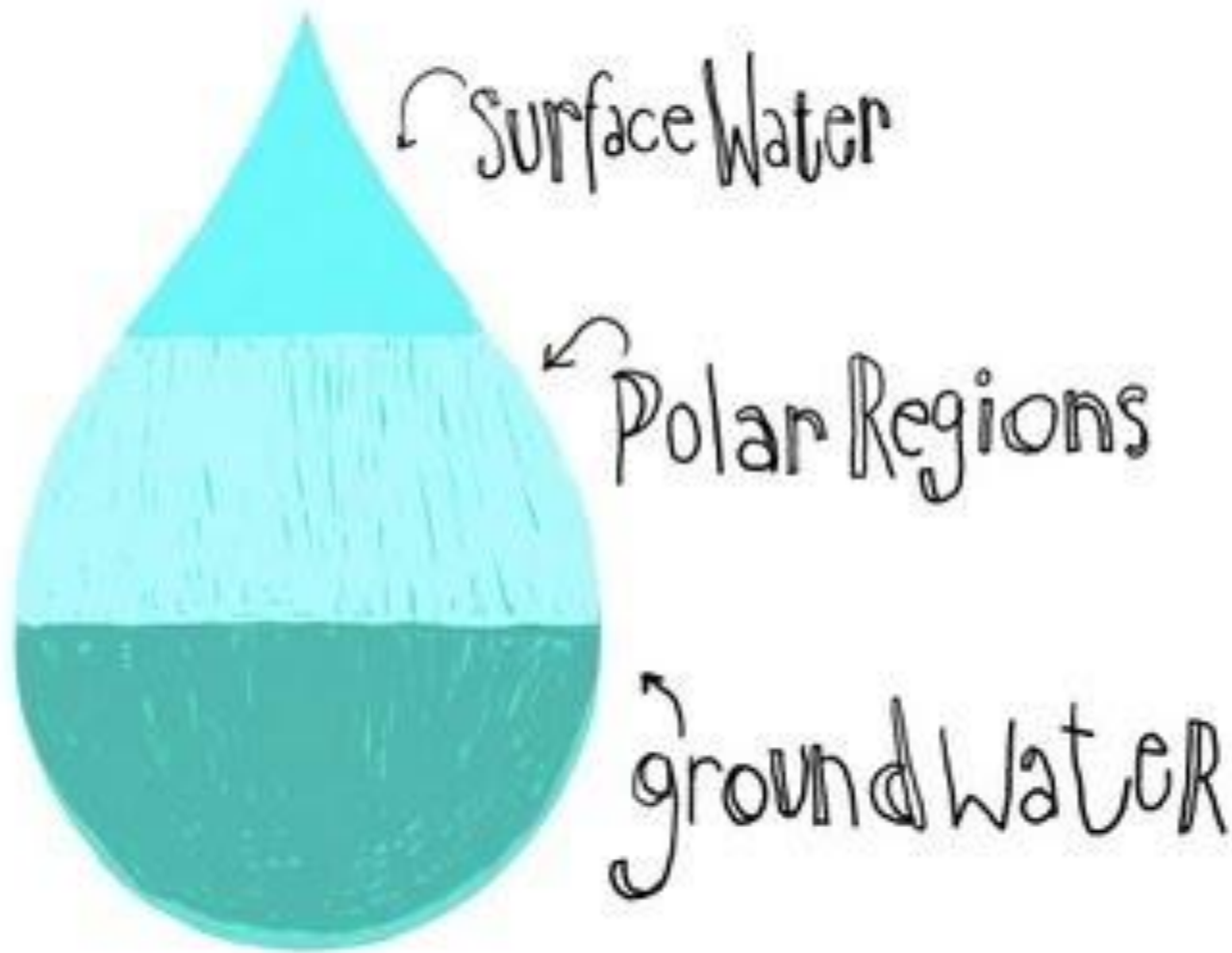


Water Resources in NC

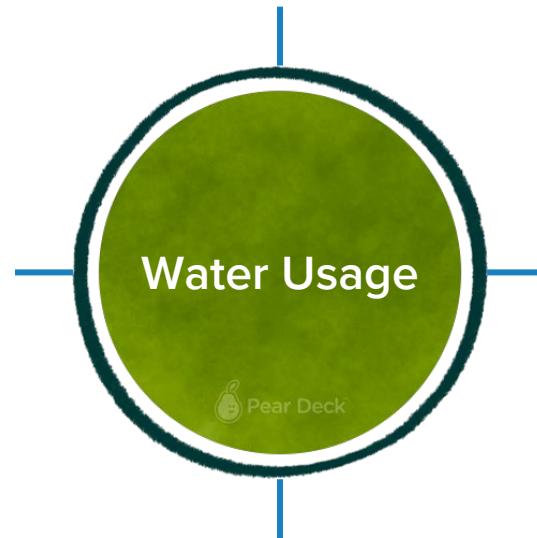




Water Supply in the World



Start a Mind Map by drawing or typing anywhere:



Students, draw anywhere on this slide!

Distribution of the Water on Earth

- 71% of Earth is water
 - 97% in the oceans
 - 3% is freshwater
 - 2% in ice and glaciers
 - 0.6% in underground water
 - 0.4% in rivers, streams, lakes and atmosphere



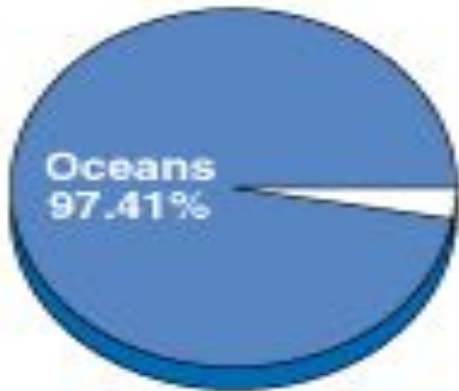
How is water used?

- 70% - Irrigation
- 20% - Industry
- 10% - Cities & Residence

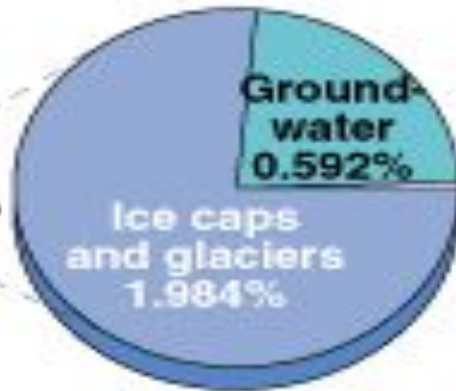


Water Supply & Use

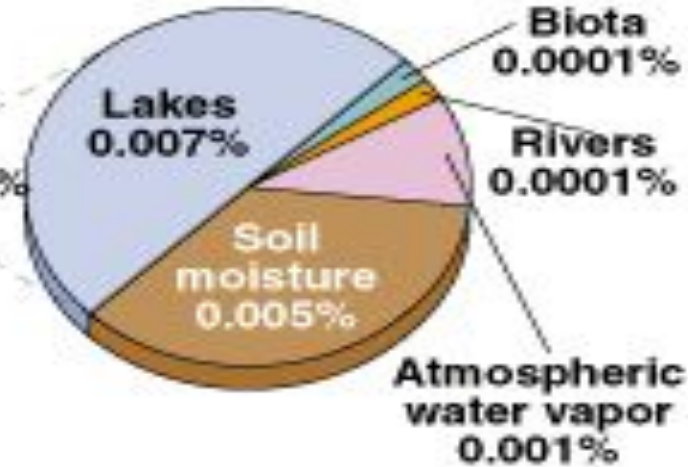
All water



Freshwater



Readily accessible freshwater

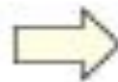


100 liters (26 gallons)

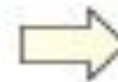


Total water
100%

3 liters (0.8 gallon)



Freshwater
3%



0.003 liter
(1/2 teaspoon)



Readily available
freshwater
0.003%

How well do you understand what we just covered?



 Pear Deck



Students choose an option

Pear Deck Interactive Slide
Do not remove this bar

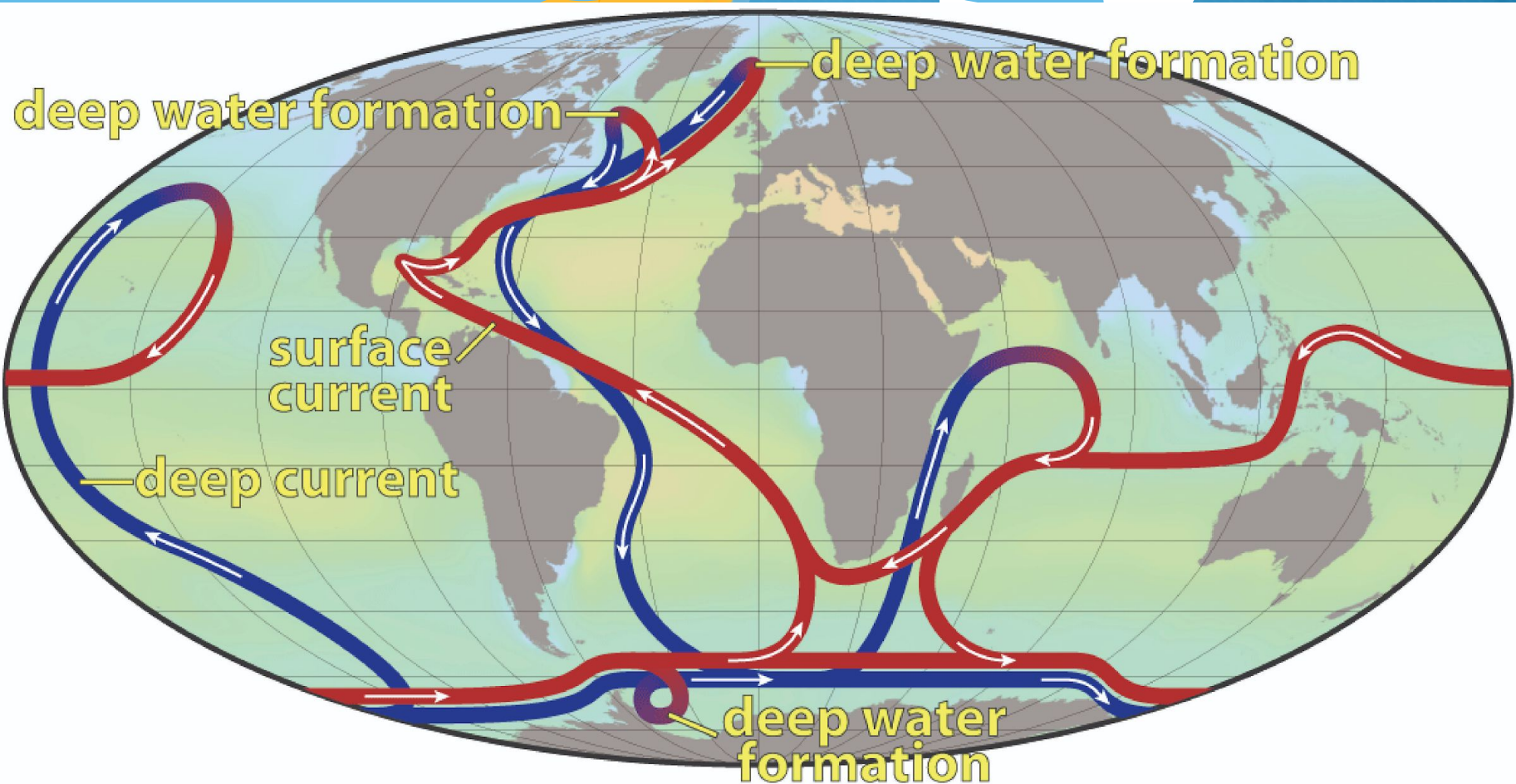
<http://glencoe.mheducation.com/sites/dl/free/0078778026/164155/00050756.html>

Oceans currents



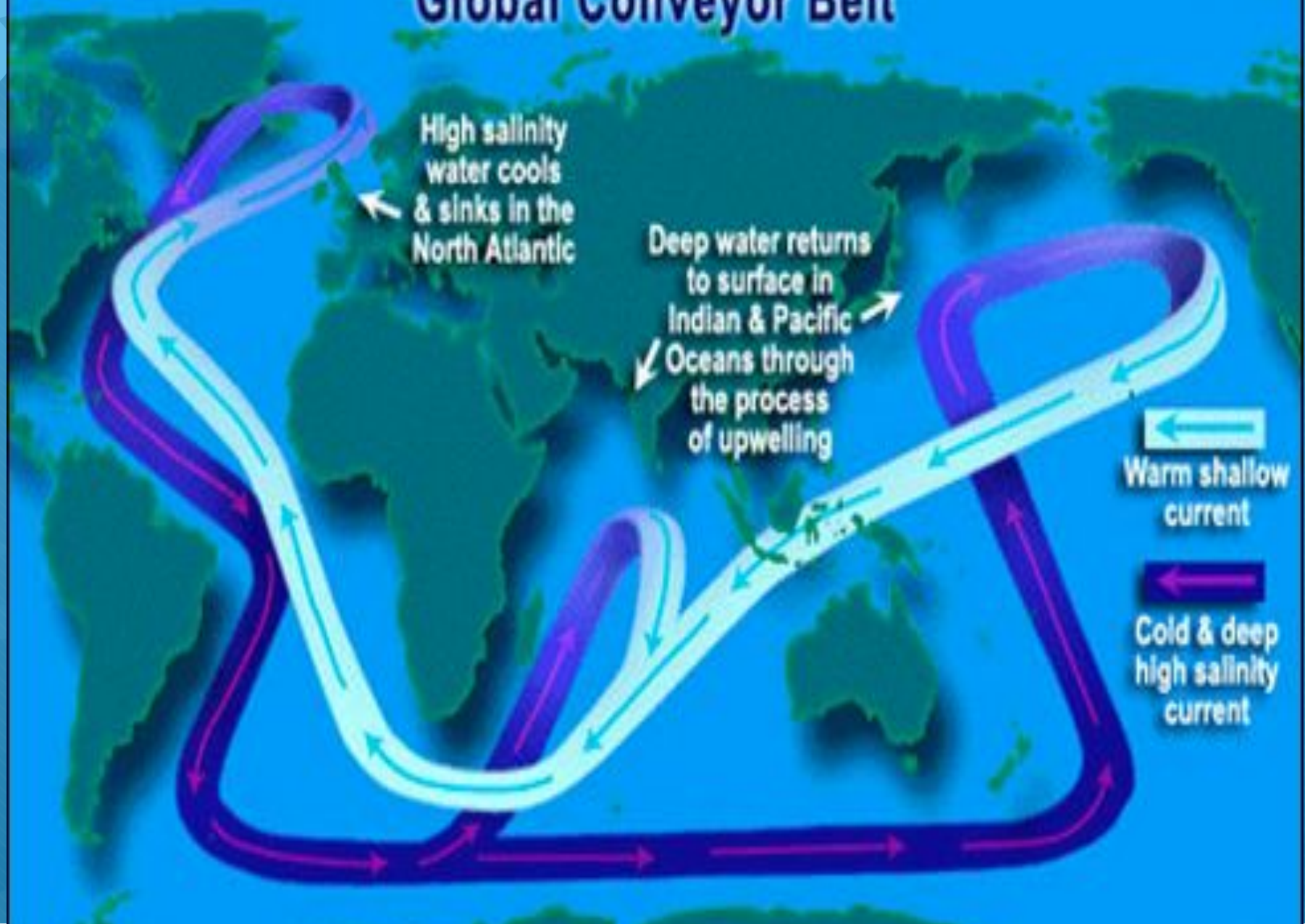
Surface Currents

- Driven by winds
- Affect land and wave formation - cold air causes water to sink and warm air causes water to rise

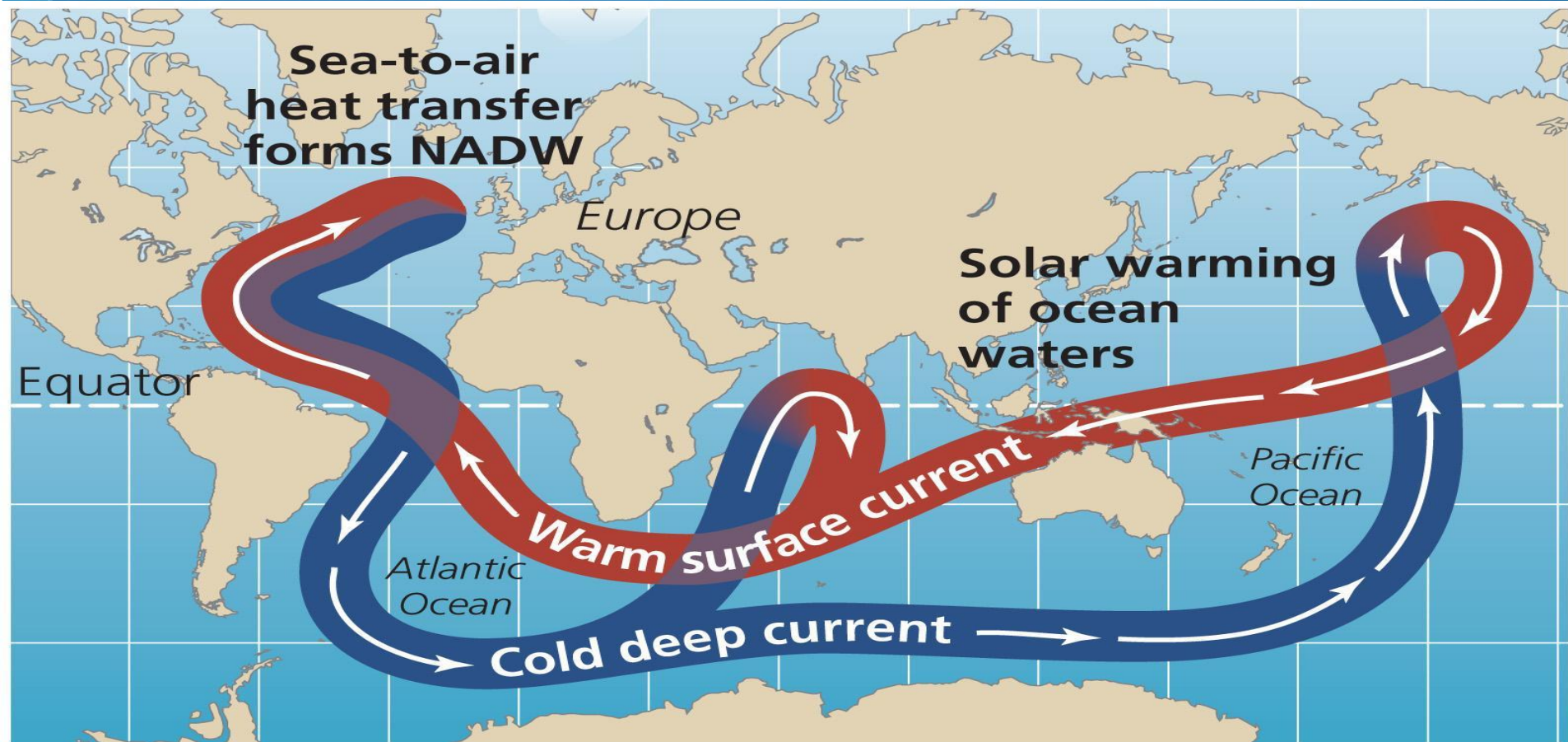


32 34 36 38

Generalized model of thermohaline circulation: "Global Conveyor Belt"

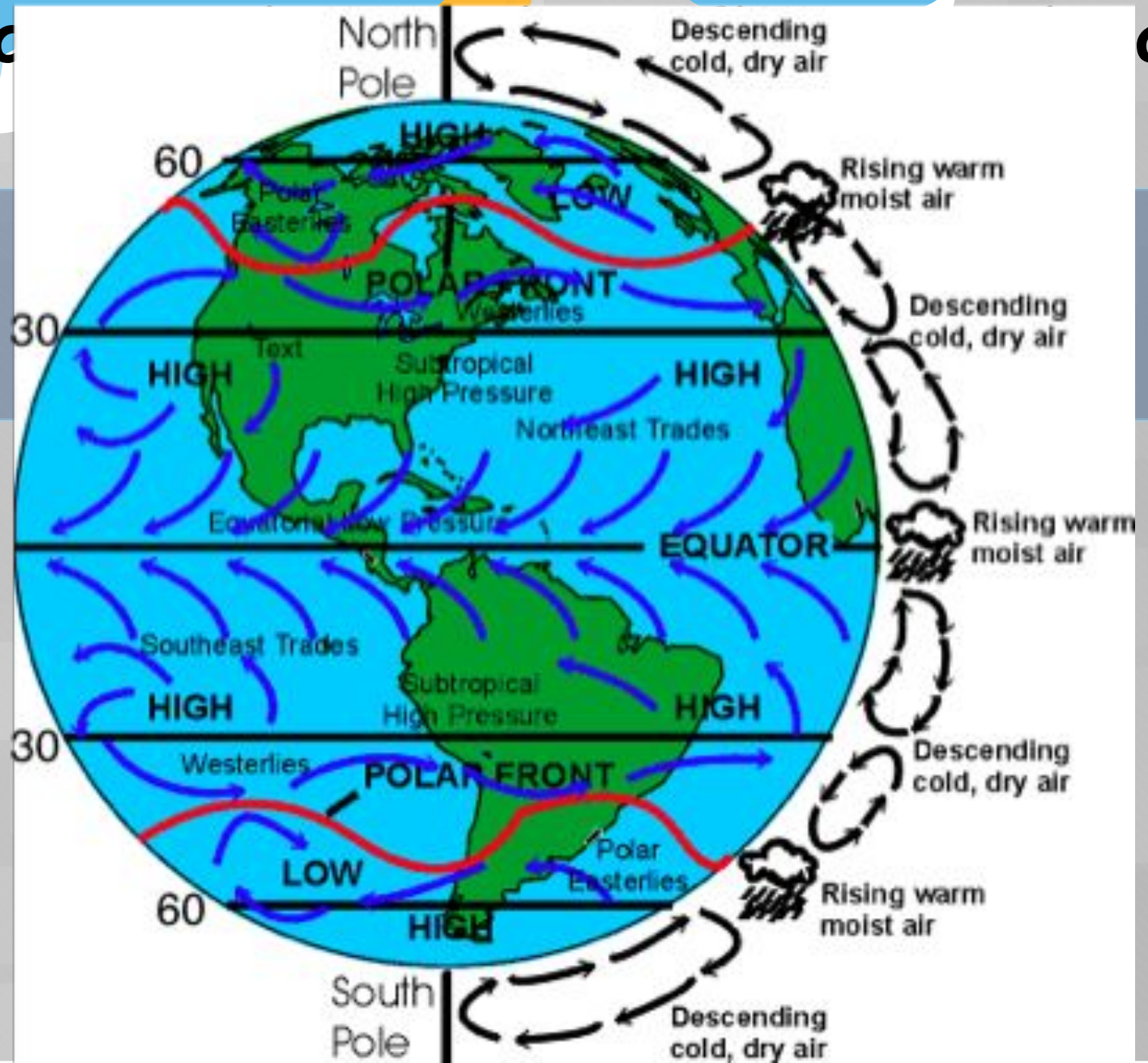


- If Greenland's ice melts, freshwater runoff would dilute surface waters, making them less dense, and stopping the movement - This has occurred in the past



Ocean circulation also influences climate

- Ocean circulation: ocean water exchanges heat in the water with the atmosphere
- Warm & Fresh water moves from East to West (Pacific to Atlantic (Europe))
- Denser, saltier, cool water that sinks in Atlantic and moves deep beneath the surface in the Pacific & Indian Oceans (Asia)



How well do you understand what we just covered?



Pear Deck



Students choose an option

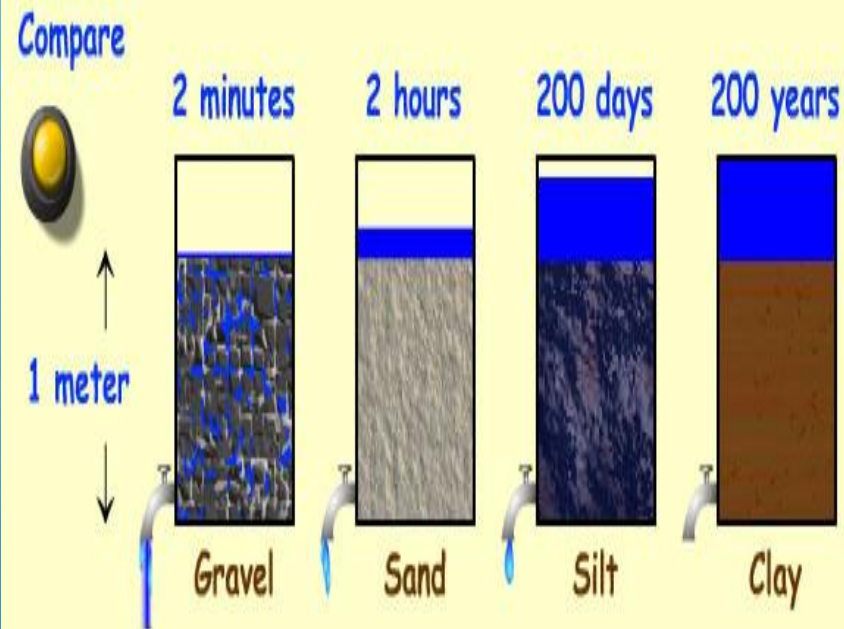
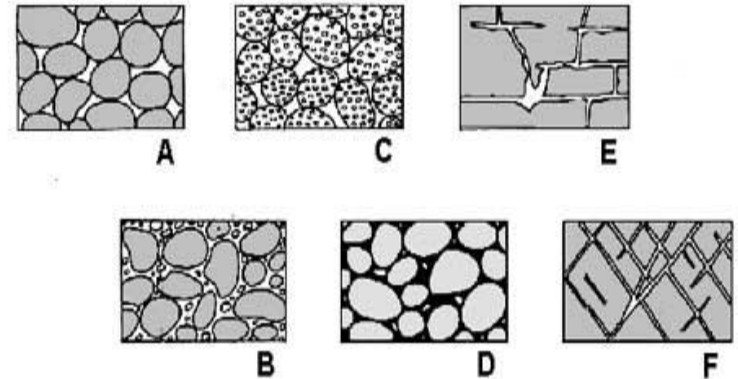
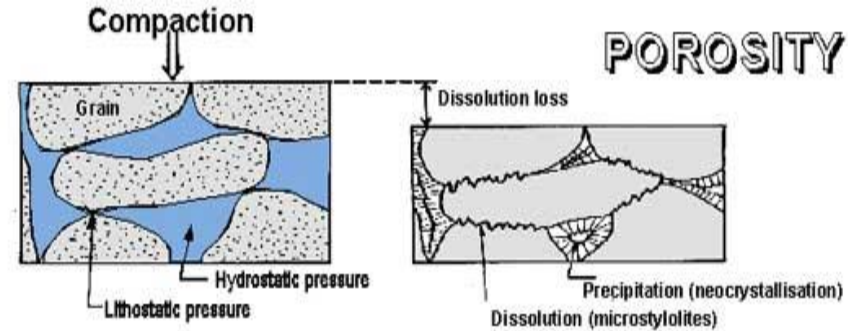
Pear Deck Interactive Slide
Do not remove this bar

The background features a large orange sun in the top-left corner, a blue sky with white clouds, and a blue gradient background with faint, stylized buildings. A dark blue, rounded rectangular banner is positioned diagonally across the lower half of the image.

Groundwater

Movement of water underground

- **Porosity:** percentage of pore spaces showing how much water is stored
- **Permeability:** ability of water that can pass through connected pore spaces





Movement of water through soil types

- **Clay:** smallest pore space - not permeable
- **Silt:** medium pore space and permeability
- **Sand:** largest pore space and very permeable
- **Loam:** Mixture of all three soil types

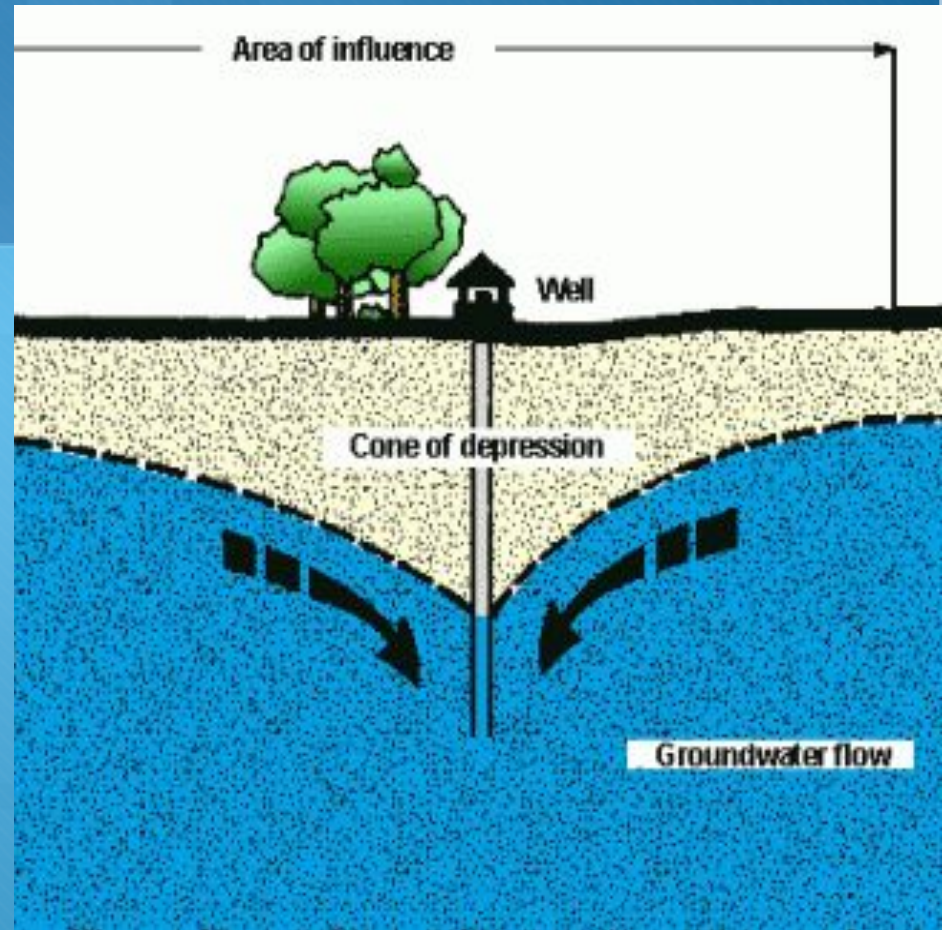


Groundwater

- **Zone of aeration:** area above the water table where water passes through
- **The water table:** the upper level of the Zone of Saturation
- **Zone of saturation:** area where the soil, sediments and rock are saturated with water.
- **Groundwater:** the water within the Zone of Saturation

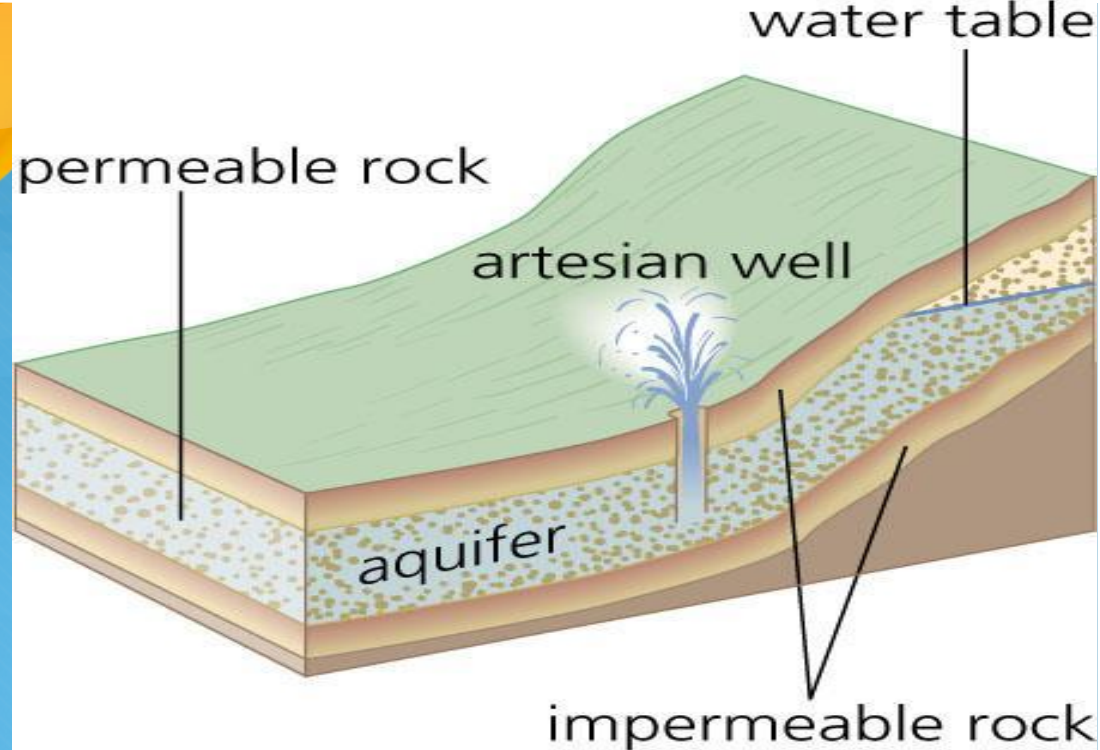
Ground Water

- **Aquifer:** underground layer of water-permeable rock (gravel, sand or silt) from which ground water can be extracted using a well.
- **A cone of depression** occurs in an aquifer when a lot of ground water is pumped from a well.



Wells:

- Pumping can cause the water table to be lower
- multiple wells in one area will deplete the supply of groundwater



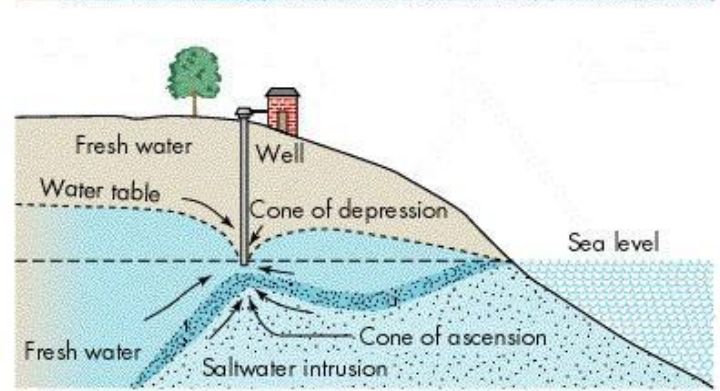
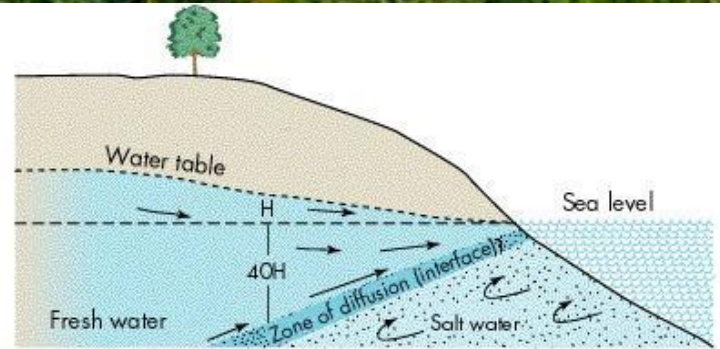
ARTESIAN WELL-TIRUTHURAI PUNDI, NAGAPATTINAM DISTRICT



Problems with Groundwater



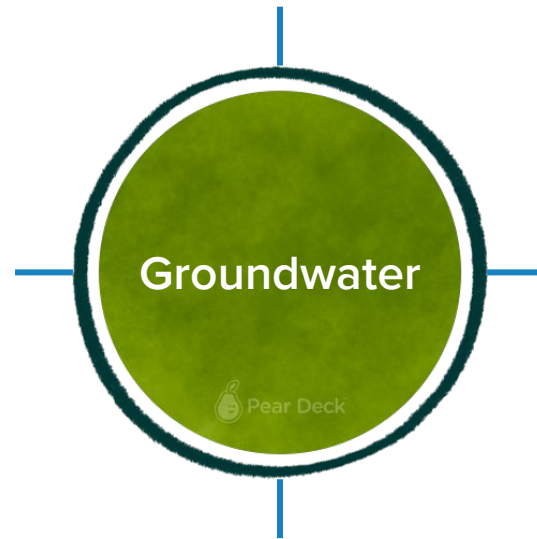
- Withdrawing water for agriculture uses
- Toxic metals leaching into wells contaminating the water (arsenic, cadmium, lead)
- Salt water intrusion where salt enters a well



<https://www.youtube.com/watch?v=PTdHyglCVaw>

https://www.youtube.com/watch?v=oNWAerr_xEE

Start a Mind Map by drawing or typing anywhere:



Students, draw anywhere on this slide!

The image features a vibrant blue background with a subtle pattern of overlapping squares. In the top-left corner, a large, bright yellow sun is partially visible. Below the sun, there are stylized white and light blue clouds. A prominent dark blue banner with rounded ends stretches across the middle of the frame. On this banner, the word "Flooding" is written in a clean, white, sans-serif font, slanted slightly upwards from left to right. To the left of the banner, there are several overlapping, rounded rectangular shapes in shades of blue and white, resembling a stack of papers or a folder.

Flooding

What is Flooding?

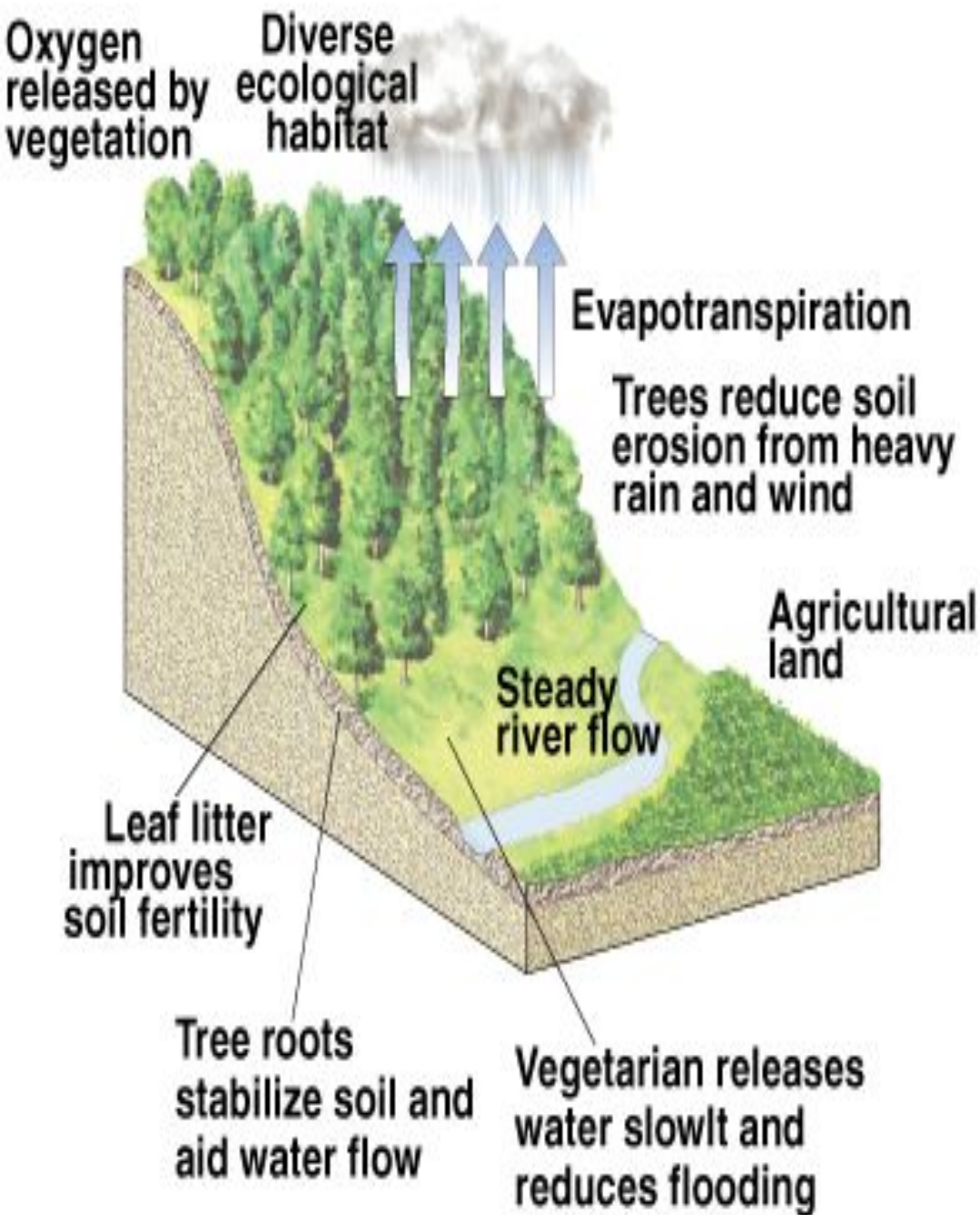
- Flooding is a natural event where land that is too dry suddenly becomes submerged in water.
- Can wipe out farms and trees
- Damage homes, cars, and furniture
- Displace families
- Flooding: Is it climate change?



Results of Floods

- **Floodplains** - areas where water floods the land
 - Provides a supplement of nutrient-rich silt to floodplain areas
 - Recharge groundwater
 - Kill and causes property damage





Forested Hillside

Human activities causing Flooding

- removing vegetation
- logging
- overgrazing
- forest fires
- mining
- destruction of wetlands
- building on floodplains
- urbanization

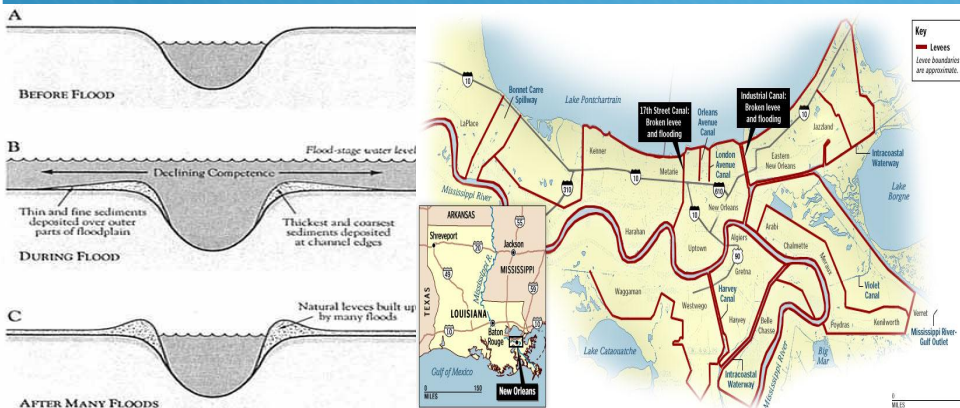
Ways to Prevent Floods

Artificial and Natural Levees

- A **levee** parallels a stream and helps to contain its waters, except during flood stage

Vegetation

- Planting trees, shrubs, and grass help protect the land from erosion.





Drought

A decorative header featuring a bright yellow sun with rays and several light blue, stylized clouds against a darker blue background.

What is a drought?

41% of people live in river basins that do not have enough fresh water!

- Dry climate
 - Drought
 - Too many people using and wasting water
 - Lack of money to drill deep wells and build storage
- [How to remedy California's drought - clip](#)



• Causes of droughts

- Dry climate
- Drought - a period in which precipitation is much lower and evaporation is much higher
- Desiccation - drying of soil because of such activities as deforestation and overgrazing
- Water stress - low per capita availability of water caused by overpopulation

A decorative header featuring a bright yellow sun with rays and several light blue, stylized clouds against a darker blue background.

How can I prevent a drought?

- **Water Conservation Practices:**
 - Turn the faucet off when brushing teeth
 - Use water saving devices in homes (toilets, water heaters, etc)
 - Water recycling: gray water (used water) is reused for other needs. (businesses, homes – toilets and gardens)
 - Build dams to conserve water for future needs

Draw lines to match the image to the answer:

Infiltration

water changes into vapor into the air

water moving through the ground

Evaporation

Precipitation

water released from plants

liquid or solid water from the clouds

Run-off

when flash rain storm hits the ground and is not absorbed.

Transpiration

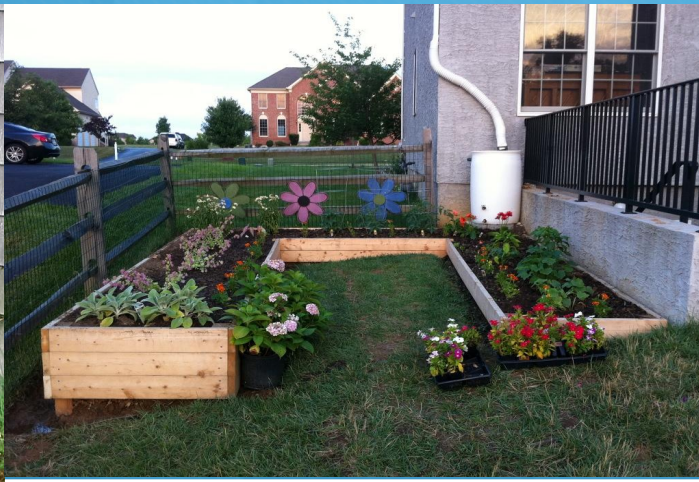


Students, draw anywhere on this slide!

Water Conservation Methods



- Use water saving toilets, showerheads, dish washers
- Purify and reuse water for houses and gardens
 - Rain Barrels



Water Conservation Methods

- Repair leaking faucets and underground pipes
- Landscape year with plants that use little water
- Use drip irrigation in your yard and crops



Summarize what
you've just learned:



Students, write your response!