

Know spelling

The names of the Earth's oceans are:

- Pacific Ocean
- Atlantic Ocean
- Indian Ocean
- Arctic Ocean

Southern Ocean \*\*\*Named in 2000. May not be noted in all text books  
 \*\*\* All of oceans are actually connected. They are just separated in names to make easier for people to identify and discuss their locations and features.

**Homework: Complete workbook page 152 and read pages 317**

12. Know the relative amounts of freshwater on Earth.  
 Greatest amount (polar ice caps and glaciers)  
 Most ice (solid water) found in Earth's polar ice cap regions  
 Least amounts Lakes and Rivers  
 \*\*\*Humans can only drink freshwater (no salt).

**CRCT REVIEW QUESTION-**

- Of the amounts of water available to humans to drink, why is 60% inaccessible?  
 A. Frozen  
 B. Polluted  
 C. Too salty  
 D. Aquifers

Answer: Because it is frozen. Just remember most freshwater on earth is frozen.

13. Most of Earth's freshwater is locked in thick sheets of ice (continental glaciers cover Antarctica in the south polar region and Greenland in the northern polar region). What are icebergs and how are they made? When a glacier advances to the ocean sheets break off and chunks fall into the ocean. These freshwater ice chunks are called icebergs. Freshwater is less dense than salt water. Icebergs float in the ocean due to freshwater having a smaller density than salt water. Most of the iceberg surface is actually underwater. (remember the Titanic)  
 Valley glaciers sometimes melt in the spring (or parts of it) and the water runs off the rivers.

**14. River systems: only a small amount of freshwater is found in rivers.**

Know the following terms in regard to river systems:  
 Tributaries- streams and smaller rivers that feed into larger river. Tributaries are owned by the force of gravity - toward the main rivers.

Watershed-(also known as drainage basin)- this is the area of land that supplies that goes into a river system.

Divide-a ridge that separates watersheds. The Rocky Mountains have the The continental divide on one side of the divide water flows into the Pacific Ocean, on the other water flows into the Atlantic Ocean.

Rivers carry any chemicals, salts, minerals, or sediment that is picked up on land by runoff water. runoff is the precipitation that flows over land and enters streams and rivers. These eventually get carried into big lakes or the ocean. Most rivers end at the Ocean.

\*\*\*The salts in the ocean are caused by minerals and salts that are picked up on land and deposited in the ocean through rivers. The salts do not evaporate out as much and so the ocean water is more salty. (more later next unit on Oceans). Note Any pollutants (harmful chemicals are also transported to the oceans)

**CRCT REVIEW QUESTION**

- The salts in the sea come from  
 A. weathering and erosion of rocks.  
 B. acid rain.  
 C. particles falling from space.  
 D. organisms that live in the sea.

weathering

Answer: A. weathering and erosion of rocks. Minerals are dissolved in water as it passes over the land, through the soil, and into the rivers. These minerals (remember Salts are minerals) are transported to the ocean.

**15. Ponds vs Lakes only a small amount of freshwater is found in ponds and lakes.**

Ponds are usually smaller and shallower than lakes. Sunlight usually reaches the bottom of ponds.	Lakes are usually larger and deeper than ponds. Sunlight usually does not reach the bottom of a lake.
Ponds usually form from rainwater or springs that fill up depressions or hollows (low lying areas).	Lakes form in many ways: volcanoes, glacier weathering, rift valleys, human interaction (dams).

Lakes and Ponds provide homes (habitats) for many plant and animal species.

A reservoir is a lake that stores water for human use. Our water that we drink comes from the Cornish Creek Reservoir, Big Haines Creek Reservoir and Lake Lanier.

**16. Wetlands: areas that are wet all or part of the year.**

- Form where groundwater seeps to the surface or water is trapped in low areas.
- Very important:
- homes for many animals and plants

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Note accidentally cut off  
Aqua: water

Powerpoint notes #1

E21

### Earth's Surface Waters Notes and Study Guide: Chapter 10

Essential questions to be answered in this unit:

How does the location of water on Earth's surface and conditions in the atmosphere through stages of the water cycle?

affected its path

Why does water continually move through the water cycle?

Does salt water and fresh water move through the same water cycle?

How does the amount of saltwater differ from the amount of freshwater on Earth?

Earth

Does salt water and fresh water move through the same water cycle?

Where does salt in the ocean come from?

Where is water found in the hydrosphere?

How can ground water be a source of energy?

Is water a nonrenewable or renewable resource?

How do humans affect (good/positively and bad/negatively) freshwater resources?

How can we conserve the natural resource water?

1. Hydro means water

The area of Earth that contains water is called the hydrosphere. This includes anywhere water is on, or below the Earth's surface and in the atmosphere.

hydrosphere

The study of water is hydrology

The study of the ocean is oceanography

2. Water molecules are made of two atoms of hydrogen and one atom of oxygen. We also can write it as H<sub>2</sub>O

hydrogen

3. Water is important for all life on earth. Every living thing requires water to survive

Water dissolves many substances and is known as the universal solvent.

4. Because of this ability to dissolve substances, water easily carries minerals, and chemicals. Some are pollutants and can cause harm to living things

5. Our planet is about 75 percent water. (Oceans cover 70% of our planet.)

6. Potable water = drinkable freshwater

• Freshwater has no salt dissolved in it.

Freshwater must be clean in order for people and animals to safely drink it. NO

Drugs

Pesticides (insecticides)

Heavy metals (lead, mercury, copper)

Gasoline, oil, chemicals

Fertilizers

Sewage (bacteria and viruses)

7. Water cycle = hydrologic cycle

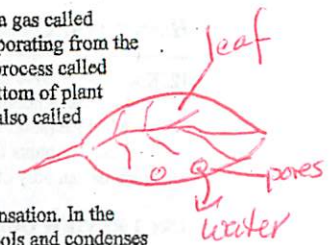
• Water moves continuously through the water cycle between the atmosphere surface and back again.

- Driven by the sun's energy
- The cycle has No true beginning or ending. It is a continuous process.
- The amount of water on Earth is finite or limited. Only a certain amount exists.

\*\*\*\*\*Know the Processes in the hydrologic or Water cycle= evaporation, condensation, precipitation.

#### 8. Evaporation:

In the process of evaporation, liquid water changes into a gas called water vapor. Water is constantly evaporating from the surface of lakes, ponds, rivers, oceans, soil, and plants. In plants in the process called transpiration occurs where water exits through holes in the bottom of plant leaves and evaporates into the atmosphere. Sometimes transpiration is also called evapotranspiration.



#### 9. Condensation:

When water vapor condenses back into liquid water this is called condensation. In the atmosphere, warm air carries water vapor to higher altitudes where it cools and condenses back into liquid. Clouds form when droplets of water clump around tiny dust particles in the air.

#### 10. Precipitation:

When liquid water particles in clouds grow larger, they get heavier. When the water droplets get big and heavy enough, they fall back to Earth as precipitation. Rain, sleet, snow, and hail are forms of precipitation. What happens next?

- Some precipitation evaporates immediately
- Runs off into rivers & lakes (runoff)
- Seeps into the ground
- Most falls into the ocean

The water cycle continues over and over. Water stays in different places in the hydrosphere and in different forms of the cycle at different times. For example: water may stay underground for thousands of years, then only stay in the ocean or river a few days before becoming water vapor in the atmosphere, etc.

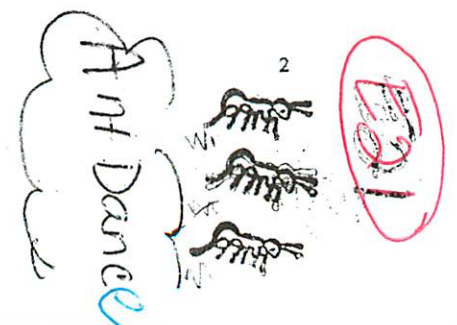
Homework: Study E20-E22

#### 11. Distribution of the Earth's Waters

The area on Earth with water is

Salt Water 97%	Fresh Water 3%
... Oceans and Salt Lakes	Ice 76% (Glaciers) (most freshwater on Earth)
	Shallow Groundwater 12%
	Deep Groundwater 11%
	Lakes and Rivers 0.34% (less than 1% of all freshwater)
	Water Vapor 0.037% (least freshwater on Earth)

97% + 3% = 100%



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