Name: _____ Date: _____ Period: _____

Freshwater Hydrosphere Study Guide

8.E.1.1 Explain the structure of the hydrosphere including:

- *Water distribution on Earth*
- *Local river basins and water availability*

8. E.1.2 Summarize evidence that Earth's oceans are a reservoir of nutrient, mineral, dissolved gases and life forms: estuaries, marine ecosystems, upwelling, behavior of gases in the marine environment and deep ocean technology and understanding gained.

8.E.1.3 Predict the safety and potability of water supplies in North Carolina based on physical and biological factors, including:

- *Temperature*
- *Dissolved oxygen*
- *pH*
- *Nitrates and Phosphates*
- *Turbidity*
- *Bio-indicators*

8.E.1.4 Conclude that the good health of humans requires:

- *Monitoring of the hydrosphere*
- *Water quality standards*
- *Methods of water treatment*
- *Maintaining safe water quality*
- *Stewardship*

Key Vocab:

Hydrosphere	River basin	Tributaries	Water Cycle	Permeable
Freshwater	Ground water	Saltwater	Impermeable	Reservoir
Atmosphere	Estuary	Conservation	Concentration	Desalination
Nitrates	Phosphates	Algae blooms	Contaminants	Bioindicators
Water quality	Stewardship	Dissolved oxygen	pH	Turbidity
Sedimentation	Organic materials	Brackish water	Eutrophication	Acid(ic)
Base(ic)	Remote Sensing			

Learning Checks:

- How do factors interact to determine the distribution of water in the hydrosphere?
- How does the water cycle affect water distribution on Earth?
- How do river basins affect water availability?
- How are physical and biological factors used to determine the quality of water?
- What can we do to protect our water supply?
- In what capacity does freshwater occur on Earth?
- Why is the ocean and fresh water considered to be one of Earth's valuable resources?
- What is the role of macroinvertebrates in determining water quality?

1. Define point and nonpoint sources of pollution. Provide an example for each.
2. Where is the majority of freshwater on Earth located?
3. Describe water's unique properties.
4. What properties of water influence why water molecules have surface tension?
5. Describe the relationship between dissolved oxygen and the temperature of water.
6. Would there be high or low amounts of dissolved oxygen in a cool environment in which aquatic animal populations are low, and plant growth is high?
7. List, in order, the steps of the drinking water treatment process.
8. Compare and contrast: Cohesion and adhesion.
9. Define eutrophication. Why does high nutrient levels decrease water quality for aquatic life?
10. What type of conditions indicate that a water system is healthy? (Think of water indicators)
11. What is an example of how living organisms can help clean polluted water?
12. Explain the two ways waste water is treated.

Matching with Word Bank

1. Property of water that causes water molecules to stick to each other.
2. Water falling from the sky as liquid / solid (rain, snow, sleet, hail, freezing rain)
3. The curved surface at the top of a column of liquid
4. The _____ Cycle: The continuous movement of water on, above, and below the surface of the earth.
5. Inland Lakes, Groundwater, and _____ are available freshwater sources?
6. Most of the freshwater is locked away in the _____?
7. Property that holds water to the surface of a penny
8. Water has a high specific _____
9. How much solute can dissolve in a substance before it becomes saturated.
10. Water weighs ____ gram per cubic centimeter
11. The substance that does the dissolving
12. Water vapor (gas) turns back to a liquid. (cloud formation)
13. Ice (solid water) floats in liquid water because it has a lower _____
14. Substance changes from a liquid state to gas state
15. Water in a pure state has a neutral pH of _____. As a result, pure water is neither acidic nor basic.
16. Most of earths water can found in the _____?
17. _____ Action. Name for when water moves up plants by adhesion.
18. Water is called the Universal _____ because of its ability to dissolve so many different substances
19. Water has unique _____ because of its lopsided + and – ends.
20. These molecules tend to have a positive charge and negative charge.

a. Adhesion
b. Capillary
c. Cohesion
d. Condensation
e. Density
f. Evaporation
g. Heat
h. Icecaps
i. Meniscus
j. Oceans
k. One
l. Polar
m. Precipitation
n. Properties
o. Rivers
p. Seven
q. Solubility
r. Solution
s. Solvent
t. Water

Ms. Smith's Freshwater Practice Questions

Name:
Due:

Please provide examples of ways that people use water in the boxes below.

What are three things you can do to conserve water?

Why is it bad to waste water?

_____

_____

_____

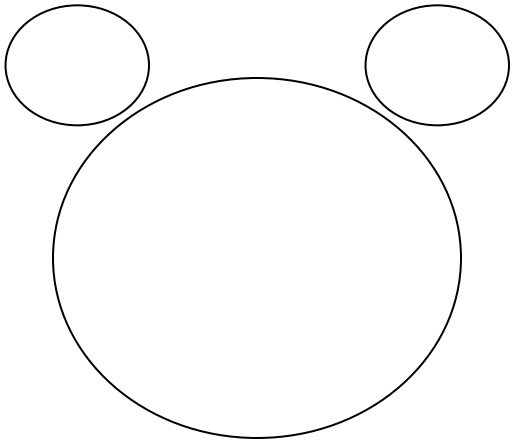
_____

_____

_____

Please draw a way that groundwater can become polluted.

Please draw and label the most accurate molecule of H_2O possible in the box on the right. Don't forget to label the charges (+ and -).



Do water and oil and mix? Explain using the picture.

_____

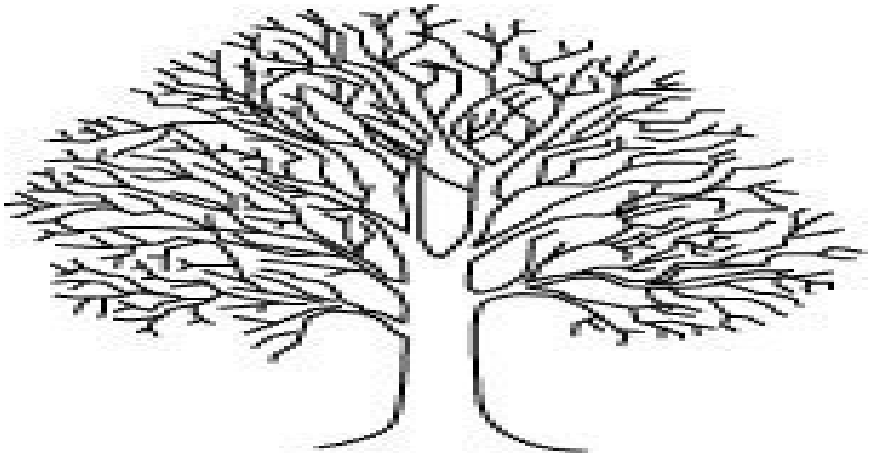
_____

_____

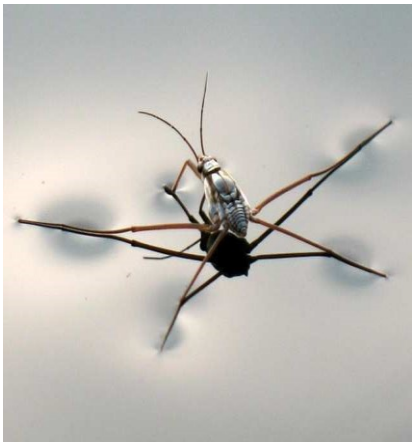
_____

Cohesion is when water molecules attach to themselves. Is this Cohesion on the right?

Please draw arrows in the direction that water in the soil will move.



What is happening in the picture below?



In the space below, please label the hydrologic (water) cycle. A strong answer will contain most of the word bank below.

•Condensation •Evaporation •Precipitation •Surface run-off

Do you know any acids and bases? Please list them in the boxes below

Acids:	Bases: