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.