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FAD DAY Hydrosphere Study Guide

FAD DAY: Formative Assessment Day

Students will be required to verbally explain their mastery of the standards below. This will be done individually with their teacher to address any misconceptions before the test and share their mastery of the standards.

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
Freshwater	Ground water	Saltwater	Lithosphere
Atmosphere	Biosphere	Salinity	Hydrothermal vents
Estuary	Nitrates	Phosphates	Algae blooms
Contaminants	Water quality	Stewardship	Upwelling
Dissolved oxygen	pH	Sedimentation	Organic materials
Inorganic materials	Brackish water	Phytoplankton	Eutrophication
Acid(ic)	Base(ic)	Turbidity	Bioindicators

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?
- What are the oceans made of and how do we know?
- How do Earth's oceans affect other marine and land ecosystems?
- 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 considered to be one of Earth's valuable resources?
- What is the role of macroinvertebrates in determining water quality?

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Hydrosphere Test Review: Please complete each of the questions below because these will be graded. Thank you! ☺

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 is an aquifer?

5. What properties of water influence why water molecules have surface tension?

6. Describe how nutrients move in the ocean as a result of upwelling?

7. T/F Water temperature increases with depth in the ocean.
8. T/F Pressure increases as ocean depth increases.
9. T/F Bioluminescence is essential for organisms living in the intertidal zone of the ocean.

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10. Compare and contrast: Plankton, nekton, and benthos organisms.

11. Provide two examples of organisms that live in the intertidal zone.

12. Provide two examples of organisms that live in the neritic zone.

13. Provide two examples of organisms that live in the oceanic zone.

14. Describe the conditions in the intertidal zone.

15. Describe the conditions in the neritic zone.

16. Describe the conditions in the oceanic zone.

17. In which ocean zone would one find coral reefs: Intertidal, neritic, or oceanic?

18. Describe the relationship between dissolved oxygen and the temperature of water.

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19. 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?

20. List, in order, the steps of the drinking water treatment process.

21. Compare and contrast: Cohesion and adhesion.

22. In which ocean zone would one be most likely to find a higher population of photosynthetic organisms? Why?

23. Which ocean zone extends past the continental shelf?

24. Define eutrophication. Why does high nutrient levels decrease water quality for aquatic life?

25. What type of conditions indicate that a water system is healthy? (Think of water indicators)