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| **Hyrdrologic Cycle Reading** | **Acid Rain Reading/Lab** | **Water Project/Greenbelt Field Guide** | **Chemical/Biological (A Bug’s Life) Water Quality Testing** | **Groundwater/Aquifer Notes** | **Dilution Lab** | **Porosity & Permeability Lab** |
| Review each section in the reading. Create a foldable (see instructions) that illustrates 3 main points for each section | Review the acid rain reading by answering the questions under the acid rain section on the back of this sheet. | How are point source pollution and nonpoint source pollution different? What examples of each did you observe on the hike? | Review the chemical water quality reading and create a foldable that illustrates each of these tests: dissolved oxygen, temperature, turbidity, pH, nitrates, phosphates. | Draw a picture of a confined aquifer | What is the formula for concentration? | What is porosity? What are some examples of porous materials? How is porosity measured? |
| Illustrate how water evaporates, precipitates, runs-off, and is stored. | How much more acidic is a solution that has pH of 4 versus a solution that has a pH of 7? | What are some ways your family might be able to conserve water in the future? | How does temperature affect dissolved oxygen levels? What are the sources for most nitrates/phosphates? | Draw a picture of an unconfined aquifer | What is the formula for a solution? What is a solute? How is this different from a solvent? | What is permeability? What are some examples of permeable materials? How is permeability measured? |
|  | As the acidity of a water sample decreases, how does the pH value change? |  | In a biological water quality analysis, you collect samples of macroinvertebrates to determine water quality at a site. EXPLAIN which is more important, the number you can collect within a particular species or the number of different species that you can collect. | Draw a picture of an aquifer (confined or unconfined) and label the confining layer, aquitard, aquifer material, water table, recharge zone, unsaturated zone | Describe what is needed to make 20 grams of a solution with a 30% concentration (by weight) of salt in water. SHOW THE MATH.  Is dilution a solution to pollution? Why? | Describe how an artesian aquifer works. |

**DIRECTIONS:**

**1. On the back of this sheet, are guiding questions for you to answer to help in reviewing for the test. Each column represents an activity/major concept in the hydrology unit.**

**2. This will count as a completion grade and you should complete as many of the boxes as possible. You are responsible for completing at least 10 activities.**

**3. You will need to bring these materials to class with you so I can check that you completed them. You WILL NOT be turning these in as they are meant to be review materials for you!**

**4. Below are some of the questions/instructions for some of the activities located in some of the boxes on the back.**

**Hydrologic Cycle Foldable Instructions**

1. Fold a sheet of paper lengthwise in half.

2. Make 6 cuts to have 6 flaps (one for each section).

3. On each flap title each of the sections.

4. Inside the flap, write the 3 main points for each section.

**Acid Rain Reading Questions**

1. What is atmospheric deposition?

2. What are particulates?

3. How does acid rain occur?

4. What is the pH of pure water? What is the pH of rain, usually? What is the pH of acid rain?

5. Name the two oxides primarily responsible for the harmful effects of acid rain.

6. What is the difference between dry deposition and wet deposition?

7. Describe how emissions of the two oxides above can be reduced.

8. What is the EPA’s Acid Rain Program?

9. Why is dry deposition hard to measure? What variables are considered when measuring it?

10. Will it be easy to take measures to reduce acid rain? What would have to be done to make long lasting changes to reduce acid rain?

**Chemical Water Quality Tests Foldable**

1. Fold a sheet of paper lengthwise in half.

2. Make 6 cuts to have 6 flaps (one for each test).

3. On each flap title each of the tests.

4. Inside the flap, write how each of the tests affect water quality. For example, if dissolved oxygen levels are low, aquatic life is stressed. If nitrates are high, this will stimulate plant growth and death and lower dissolved oxygen. Use your reading/notes/discussions to write about patterns for each test.