**Water Quality Stations:**  
As you go through each station, read the directions and answer all of the analysis questions. Some stations will require you to complete hands on activities. Part of your grade for that station is whether or not you cleaned up the area, fully, once you were finished.

**Station 1: Contaminates and Pollution**  
 **Phosphorous:**  
1. What are some sources of phosphorous?  
  
2. How does it enter streams and rivers?  
  
3. In Atlanta, how is the phosphorous entering West Point Lake?  
  
4. How do officials know this is causing a problem in the lake?  
  
5. What are the people of Atlanta doing to control the levels of phosphorous? Give two examples.  
  
**Station 2: Turbidity**  
  
1. Look at the five water samples. Draw them (in color) in order from least to most turbid.

2. What is turbidity? How does it affect water systems?

**Station 3: Salinity**  
Using the article found at this station, answer the following questions:  
  
1. How is salinity measured?  
  
2. For every \_\_\_\_\_ grams of seawater, \_\_\_\_\_ grams are salt.

3. Other than Sodium and Chlorine, what are the other major components of seawater?  
  
  
4. Why does salt water taste bitter?  
  
  
5. Why is the ocean salty?  
[Station 3: Salinity-Continued]  
6. How do we measure salinity? Explain.

7. Which of the options given in the article is the best choice for measuring salinity? Why?

8. Create a pie chart showing the difference salts found in seawater. Use color, and label your graph.

Key:

**Station 4: Temperature**  
Test the three beakers to find their temperature. Record your findings in the chart below:

|  |  |
| --- | --- |
| Sample Number | Temperature |
| 1 |  |
| 2 |  |
| 3 |  |

1. Which sample could host the most dissolved oxygen? How do you know?

2. If you were to pour sample \_\_\_\_\_ into sample \_\_\_\_\_ it would cause thermal pollution. Thermal pollution is defined as: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3. How is photosynthesis affected by the temperature of a water system?

**Station 5: pH**Test the three beakers to find their pH. Use the pH indicator strips, and the key found on the bottle to determine the pH. Record your findings in the chart below:

|  |  |
| --- | --- |
| Sample Number | pH |
| 1 |  |
| 2 |  |
| 3 |  |

1. Which sample contained the best pH for fish survival? Why?

2. Give examples of (at least two) human factors that affect pH. How does this occur?

[Station 5: pH- Continued]

3. Give examples of (at least two) natural factors that affect pH. How does this occur?

**Station 6: Dissolved Oxygen**  
  
1. View the video “How to Measure Dissolved Oxygen”. List the steps, in order, necessary used in the process.

2. How does dissolved oxygen affect a water system?  
  
  
  
3. How does dissolved oxygen affect the animals living in a water system?   
  
  
**Station 7: Pollution**Using the article found at this station, answer the following questions:  
  
1. How can sound waves be used to determine water pollution?

2. Why is algae development one of the first signs that there is pollution in a water system?

3. Describe the technique scientists are using to measure water pollution with algae.

**Station 8: Contaminates and Pollution**  
  
**Nitrogen:**  
1. How is nitrogen used in agriculture?

2. How does excess nitrogen get into streams and rivers?  
  
  
3. How does excess nitrogen harm bodies of water?  
  
  
4. How can excess nitrogen in drinking water harm humans?

5. Use the map. What is the nitrate ion concentration in NC? What does that mean?