**Salmon in the Classroom Culmination Lab Answer Document**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour: \_\_\_\_\_\_\_\_\_\_

**Directions: Complete all data tables, graphs and discussion questions**. You must answer all questions in appropriate QIS form by clicking on the textbox and typing in your answer. For the data tables you must include the data that you collected along with appropriate units of measurement.

**Lab Station number 1**

**Salmon Release**

1. **What was the purpose** to adding water from the creek to the bucket of water that the fish were in?
2. **Why** is this important?
3. **What might happen** if we were not to follow these steps?

1. **Create a data table for the length** of each fish that we released (you will need to get the lengths from all other groups)

**Lab Station number 2**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Date: Release Day | | | | | |
| Ammonia Test |  | pH Test |  | Dissolved Oxygen Test |  |
| Nitrate Test |  | Nitrite Test |  | Temperature |  |

**Water Quality**

1. **Identify three different substances** that are present in the water where we are releasing our salmon.   With regard to each substance, **will the substance positively or negatively affect** the survival of our fish? **Explain**.
2. **Why is temperature important** to the survival of our fish?  **Describe why** they need colder temperatures (think about the relationship between temperature and amount of dissolved gasses- specifically oxygen).

**Lab Station number 3**

**Macro Invertebrate Study**

**Directions**: Assign a group member to report the type and number of invertebrates that your group found. This information will be posted in the class so that you can complete the following bar graph by inputting the entire 8th grades data.

**Lab Station number 4**

**Producers Identification**

1. **How many** molecules of Carbon dioxide are needed to create one molecule of glucose?

2. **How many** molecules of water are needed to create one molecule of glucose?

3. If a plant was to convert 42 molecules of CO2 and 42 molecules of H2O into glucose, **how many** molecules of glucose would be produced?

4. All producers go through this chemical reaction during the daylight hours.  **Why can’t** they go through photosynthesis during the night?

5. **How are** these producers **important** **to the salmon** that we are placing in the creek?

6**. How are** the **salmon important to the producers** around the creek?

**Lab Station number 5A**

**Predator/ Prey Identification**

**Directions**: Assign a group member to report the type and number of predator Species that your group caught. This information will be posted in the class so that you can complete the following bar graph by inputting the entire 8th grades data.

1. What type of interaction do these “fish” have with our salmon? Will they become predators, prey, or competitors?  Explain

**Lab Station number 5B**  
**Box and Whisker Plot Analysis**

Using the 5 number summary and the chart of the previous years’ data, **specifically** compare **at least 3** of the fish species from previous years. Please be sure to include the following information for full credit:

1. Input your data from the Salmon Release into the chart. The Box and Whisker plots from previous years have been created for you.
2. **In a paragraph**, beginning with a topic sentence, compare your fish data to previous years. Be sure to include specific descriptions. For example, the top 50% percent of our walleye were longer than 75% of the walleye caught in previous years. Be sure to do this for **EACH** of the 3 types. **In a final paragraph**, describe whether or not you believe your collected data to be a good representation of the actual length of this type of fish in the spillway or not.

**Additional Information found at:**

**http://pond.dnr.cornell.edu/nyfish/fish.html**

**http://www.glerl.noaa.gov/seagrant/GLWL/Fish/minnows/minnows.html**

**Lab Station number 6**

**Rock Grain Size**

**Scatter-Plot and Line of Best Fit**

**Input** the data that you collected into the graph by clicking on the Chart tab, and then the Edit button. **Create** a scatter plot of your data by inputting your data into the given Excel sheet. Place a **Line of Best Fit** on your scatter plot by picking the chart layout that will draw a line (Layout 3). **Create the equation** for the line by determining the **slope** and the **y-intercept** of your line.

**In a paragraph, including a topic sentence**, answer the following questions about your data.

1. Is the **association** between the average sediment size and the water speed positive, negative, or does there seem to be no relationship?
2. What does the slope of the line tell you **in terms of the situation** (be sure to talk about both variables)?
3. What does the y-intercept tell you **in terms of the situation**?
4. **Using your equation**, predict the average sediment size at 45 m. Predict the average sediment size at 1 meter per second and 0.5 meters per second.
5. **Using your equation**, predict the distance where you would find sediment with a grain size of 5 cm.

**Lab Station number 7**

**Habitat Assessment**

Salmon species \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name of this stream \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of this watershed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Discussion Question

1. Do you think the salmon will be able to survive in Fish Creek and return to spawn? **Why or why not**? **Explain in detail** using your **river habitat assessment** data and data from at least **two (2) other lab stations**. Answer in QIS form. This will be a portion of your argumentative report in Language Arts.

**Lab Station number 8**

**Fishing**

For each of the fish that were caught during our lab day create a box and whisker plot and add that data to your report for lab stations #5A and 5B.