NAME (first and last): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ PERIOD: \_\_\_\_\_\_\_ DATE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Data Analysis Assessment: Steelhead Population Patterns**

**Standard** we are working on: I can *analyze and interpret data on adult steelhead return rates to describe changes in populations over time.*

*Essential Question: How have steelhead populations changed over time?*

Data can be found here: <https://www.cbr.washington.edu/dart>

Examine your graph to complete the table below:

| **Phenomenon:**  What is it that we are observing? | What phenomena are you looking at? | Where is the data collected? | What is the time range of this data? (list start and end year). |
| --- | --- | --- | --- |
|  |  |  |
| **Variables:**  What are we measuring? | What data are we graphing? List the x-axis variable with units | What data are we graphing? List the y-axis variable with units | What does the y-variable mean? |
|  |  |  |
| **Source:** | Where am I getting the data to explain the patterns of this phenomenon? List the website. | Mastery: How is the data collected? (how are scientists measuring this phenomenon?). | |
|  |  | |
| **Accuracy:** How can I be sure this data is accurate and credible? Check what applies to the data/source materials you are using: | * The data/source material comes from a scientific agency of the United States government. The website is **.gov** | * The data/source material comes from an educational resource. The website is **.edu** | * The data/source material comes from an organization with a scientific reputation with editors that fact check all publications. The website is **.org** |

**ANALYSIS:** Describe the pattern of change over time. Label your graph to describe and interpret the data:

| Step 1: Underline the x-axis and y-axis. Highlight the title.  Step 2: Use the checklist below to label parts of the graph to describe the patterns you see.  Step 3: Use tape to tape one edge of the graph below and fold so it fits. |
| --- |
| How much has the population changed? Calculate the change in population between a time period of your choice. Use a ruler and highlighter to show the amount of change over time. Calculate this difference. Complete the sentence below:  Between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the salmon population went from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  A change of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |
| How well does this data match my prediction of how salmon populations have changed in the Columbia River over time? Explain. |

Analysis Checklist:

* I have identified 2-3 time periods that show a significant change in the data. For example, think about where the data is increasing over time? And decreasing? Where is the data changing rapidly (steep slope) or gradually (gentle slope). Label these points on the graph.
* I have identified and labeled the maximum data point and explained what that data point tells us.
* I have used math to calculate the change in the y-axis variable between a time period of my choice and added this to my graph.
* I have compared the data to the prediction I made.

**Explanation:** 1. What ideas do you have to **explain** why we see the pattern of steelhead population change over time? 2. Why do you say this? 3. What data do you need to find to support your ideas?

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**Predict the future:** What would you predict the chinook salmon population to be in 5 years, 10 years, 50 years. You may use numbers. State if the trend is increasing, decreasing or fluctuating.

| **In 5 years:**  **In 10 years:**  **In 50 years:** |
| --- |

**What more question(s) do I have about this data or topic:**

|  |
| --- |

**Mastery: How are salmon and forests connected? What role do salmon play in the ecosystem and in our society? Name three.** Information on GC> Extension [Video](https://www.youtube.com/watch?v=rm25cRi8TL8&t=1s)

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**Data Analysis Assessment Checklist:**

| Standard we are working on: I can *analyze and interpret data on adult chinook salmon return rates to describe changes in salmon populations over time.* | | | | |
| --- | --- | --- | --- | --- |
| M  Mastery that exceeds grade level standards | P  Proficiency that meets grade level standards | N  Nearing proficiency toward grade level standards | Y  Not yet demonstrating proficiency | L  No Evidence |
| My analysis includes everything from Proficient, AND:   * I have included the ways the data was collected and added to how the data was collected in the table column for **source.** * I have explained how salmon and forests are connected and identified the role salmon plays in the ecosystem and in human society, naming three ideas. | My analysis is complete and correct, including:  *Table*   * Correctly identifies the **phenomenon**. * Correctly identifies the **variables.** * Correctly identifies the **source**. * Correctly assesses the credibility and **accuracy** of the data.   *Analysis*   * I have sketched the graph and labeled the x and y axis. * I have identified and labeled patterns in the data over time to describe patterns in the data. * I have identified other variables that would explain the patterns in the data. * I have made predictions of salmon populations. | My analysis is almost there, but lacks one or more of the requirements for proficiency. | I shared some of my science thinking in this analysis assessment. | I have not turned in and/or attempted the assessment. |