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

**Data Analysis Assessment: Part 1. Global Temperature Patterns**

**Standard** we are working on: I can *analyze and interpret data on global temperature change over time to describe patterns of temperature change on Earth’s surface.*

*Essential Question: What factors are causing changes to salmon populations over time?*

Data can be found here: <https://climate.nasa.gov/vital-signs/global-temperature/>

Examine the 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: Sketch and describe the pattern of change over time.** Complete the steps using the checklist below.

|  |
| --- |
| How much has the global temperature changed from the norm in a time period of your choice? Identify the dates you are interested in. Highlight the portion of the graph between those dates. Use the graph on the website to find the exact temperature measurements at each date. Calculate the difference in the temperature between these dates. Complete the sentence below:  Between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the difference in the global temperature went from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  A change of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |

Analysis Checklist:

* I have sketched the pattern of change and labeled the x and y axis.
* I have identified and labeled 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). Highlight and label these points on the graph.
* I have identified the general pattern over time and labeled this on my 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. Use the graph on the website to get an accurate read of the data: <https://climate.nasa.gov/vital-signs/global-temperature/>

**Mastery:** Show a model of how global temperature change patterns impact the water cycle. Remember the water cycle processes, including evaporation, condensation, precipitation, and melting describe phase changes of water molecules (H2O). Show how these processes are impacted with changes in global surface temperature? Draw a diagram model below to share your thinking.

|  |
| --- |

**Data Analysis Assessment Checklist:**

| Standard we are working on: I can *analyze and interpret data to describe patterns of change on Earth.* | | | | |
| --- | --- | --- | --- | --- |
| 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 researched the ways the data was collected and added to \*how the data was collected in the table for **source.** * I have modeled the impact of temperature change on the water cycle. | 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*   * Patterns in the data are shown and described as increasing, decreasing and/or fluctuating over time. * I have identified trends in the data over time. * I have included 2-3 data points that show change. * I have identified the max point and what it tells us. * I have calculated the change in temperature between two time periods of my choice. | 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. |