**Summary Description of Assessment #3**

Organizing and Making

Inferences/Predictions from Data

**Competencies:**

* Student can organize data by creating a table, chart, or other representation to facilitate interpretation.
* Student can make inferences and predictions and use the data to defend or refute conclusions.

**Focus:**

🞎 Declarative knowledge

🗹 Procedural knowledge

🞎 Problem solving

**Evidence of Competency:** Students are given a research question, along with data appropriate for evaluating this question and a description of how the data were obtained. Students are asked to organize the data in the form of a table, graph, or chart; use the data to evaluate the research question; and present their findings and the procedures they used. The research question and the data involve concepts and variables with which students are familiar, but that are distinct from ones for which they have previously organized data or made inferences/predictions.

**All assessments developed using this template should be fully consistent with its corresponding specification. The most up-to-date specification for this template can be found at http://www.cala.fsu.edu/ies/performance\_  
assessment\_specifications.**

**Performance Assessment #3**

Interpreting Research Data Related

to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Taskstudents are asked to perform:

Students interpret data to answer the following research question:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Appendix B presents the data in the form provided to students.

Students are asked to individually organize the data in the form of a table, graph, or chart; use the data to address the research question; and present their findings and the procedures they used.

Related prior knowledge or skillsstudents must have:

Student can recognize and comprehend a scientifically testable question.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Required materials and resources:

* Written instructions provided in Appendix A.
* See *Data Presented to Students* in Appendix B.

Instruction given student:

See *Written Instructions to Students* (Appendix A).

Guidelinesthat influence administering this performance assessment when used summatively:

* Students are to work alone to complete this task.
* Students’ questions related to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be answered as long as answers *do not* provide information about how data are to be organized.
* Students’ questions related to how the data are relevant to or can be used to answer the research question *cannot* be answered.

Scoring Planfor this performance assessment:

Regarding all scoring plans, partial credit is never awarded for any items within the scoring plan, even when multiple points are involved. Credit is to be awarded in full or not at all.

Grammar, spelling, or other factors not directly related to the competency being assessed are not reflected in the scoring plan. Using professional judgment, however, you are encouraged to provide students feedback on these additional factors that are not assigned points in this scoring plan.

**Data Representation Points**

|  |  |
| --- | --- |
| Data organized using a table, graph, or chart. | 1 |
| Data are grouped by [*levels of the independent variable*]. | 1 |
| All provided data are represented in the table, graph, or chart (either averaged or as individual data points). | 1 |

**Measurement Error Observations**

|  |  |
| --- | --- |
| Inconsistency of \_\_\_\_\_\_\_\_\_\_\_\_ measurements obtained at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is represented in table, graph, or chart. | 1 |
| Student’s narrative references above inconsistency of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ measurements. | 1 |
| Student notes inconsistency is small compared to the effect of \_\_\_\_\_\_\_\_\_\_\_\_\_\_. | 1 |

**Major Findings**

|  |  |
| --- | --- |
| Student observes that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | 1 |
| Student cites specific data to support this conclusion. | 1 |
| Student observes that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | 1 |
| Student cites specific data to support this conclusion. | 1 |

Appendix A

Written Instructions to Students

Interpreting Research Data Related

to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In this exercise, you will use data already collected by a researcher to help evaluate this **research question**:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?

**How the Data Were Collected:**

[*Insert description of how data were collected.*]

This research involves one dependent variable and one independent variable:

* Dependent variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Independent variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Organizing and Interpreting the Data:**

The data are provided on separate paper. Use these data to do the following:

* Organize the data by **creating a table, graph, or chart**.
* **Answer the research question**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?
* **Describe how the data support your conclusions**. Be specific.

Here are some things you should write about:

* Carefully describe any relationships you see as to the effect \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  \_\_\_\_\_\_\_\_\_\_\_.
* Why did the researcher repeat the experiment three times? What does this additional information tell us?
* Carefully refer to specific data that support your conclusions.

As you work, you may ask anything you like about the research question or the data. I will answer as best I can, although I cannot help you organize or interpret the data.

Appendix B

Data Presented to Students

[*Provide here the data that will be presented to students. The sample item included within the performance assessment specification provides one example of how this data can be presented. Do not be bound by the format illustrated in this sample item. However, because part of the competency being assessed requires students to organize the data, be sure that the data presented requires some restructuring in order to be easily interpretable*.]