BRP1 — BRP TASK 1

NATURAL SCIENCE LAB — C683
PRFA — BRP1

TASK OVERVIEW SUBMISSIONS EVALUATION REPORT

EVALUATION REPORT — ATTEMPT 1 — APPROVAL NEEDED

Overall Evaluator Comments

EVALUATOR COMMENTS

To support you in demonstrating proficiency, you'll be unable to resubmit your task until you've consulted with a Course Instructor. ---------- Your literature review provides an outstanding scientific foundation for your investigation of seed germination by summarizing relevant past research on germination from five sources. This summary, highlighting the importance of factors such as water, oxygen and light, smartly justifies your hypothesis that addresses these factors in seed germination. Please see the score report below for details about aspects requiring revisions.

Criteria For Submission. null

Competent The experiment is in the natural sciences—not computer sciences or the social sciences, and does not involve computer simulations or experiments on vertebrate animals.

There are no comments for this aspect.

A. References

Competent The summary includes at least 2 reference materials from different sources and logically addresses how the reference materials relate to basic scientific principles and provide a foundational background for the experiment.

There are no comments for this aspect.

B. Hypothesis

Approaching Competence A hypothesis(es) is provided, but the prediction described is not quantifiable, it does not involve the manipulation of an independent variable on a quantitative dependent variable, or the hypothesis(es) does not give a clear confirmation or refutation.

EVALUATOR COMMENTS: ATTEMPT 1

The hypothesis clearly predicts that seeds will germinate where oxygen is available, and that seeds will grow in the presence and absence of light. The predictions that seeds will germinate and/or grow appear to provide yes or no answers and do not appear to be quantifiable. As such, the hypothesis is insufficient because it does not describe a quantifiable prediction or involve the manipulation of an independent variable on a quantitative dependent variable. ---------- For instruction on developing and justifying a hypothesis, please visit the study plan for this course by clicking on the link located to the right of this rubric item's name. Navigate to “Module 3 – Testable Hypotheses” and view the video on page 8.

C. Justification of Hypothesis

Competent The justification logically connects the hypothesis to prior research and scientific principles. Reference to prior research and scientific principles is summarized in the candidate’s own words.

There are no comments for this aspect.

D. Independent Variable

Approaching Competence The description incorrectly identifies the independent variable(s). The description of independent variable(s) manipulation lacks the clarity needed by a reader to replicate the experiment, or the manipulation is unsuitable for the variable. If applicable, the description incorrectly includes how experimental conditions differ.

EVALUATOR COMMENTS: ATTEMPT 1

Access to oxygen and the presence of light are correctly identified as independent variables in this experiment that investigates the effects of oxygen, light and water on seed germination. The response incompletely identifies the independent variables in this experiment.

E. Dependent Variable

Approaching Competence The description incorrectly identifies the dependent variable(s). The description of how the dependent variable(s) will be quantified and recorded does not include units of measure or lacks the clarity needed by a reader to replicate the experiment. The quantification of the variable, the units of measure, or how the variable will be recorded is unsuitable for the variable.

EVALUATOR COMMENTS: ATTEMPT 1

The submission describes an experiment investigating how a lack of exposure to oxygen, light or water impacts seed germination. The dependent variable is insufficiently identified as the effect of water in seed germination. A description of the dependent variable that includes how the variable will be quantified and recorded, along with the units of measure, is needed. ---------- For instruction on manipulating an independent variable, quantifying a

dependent variable, and controlling confounding variables, please visit the study plan for this course by clicking on the link located to the right of this rubric item's name. Navigate to “Module 3 – Testable Hypotheses” and view the video entitled “Variables” on page 9.

F. Confounding Variables

Not Evident No confounding variables are described.

EVALUATOR COMMENTS: ATTEMPT 1

It is clearly noted that the experiment will be conducted using six transparent plastic tins, soil, and 12 maize seeds, and that all the tins will be placed in an area with temperatures ranging between 16 C- 27 C. An identification of at least one external, confounding variable, including a description of how it could impact the experimental manipulation and a justification for how the suggested method of controlling it would mitigate any confounding effects on the results, could not be located.

G. Materials

Approaching Competence The description of materials and measurement tools is incomplete or is not detailed enough for a reader to replicate the experiment.

EVALUATOR COMMENTS: ATTEMPT 1

A list of materials used in the experiment includes six plastic tins, with only one tin having a lid, a box, soil and 12 maize seeds. The list of materials and measurement tools is incomplete since it does not appear to include a tool for measuring a quantitative dependent variable. ---------- For instruction on designing and describing the materials and experimental procedure, please visit the study plan for this course by clicking on the link located to the right of this rubric item's name. Navigate to “Module 4 – Experimental Procedures” and view the video on page 10. Additional things to consider can be found in the “Conducting Your Scientific Experiment” section on page 11.

H. Experimental Procedure

Approaching Competence The description of the experimental procedure is incomplete or is not detailed enough for a reader to replicate the experiment. The description does not clearly indicate the frequency of measurement or does not indicate the tools used at each step.

EVALUATOR COMMENTS: ATTEMPT 1

The submission aptly describes how the seeds were planted in six tins containing soil, with the tins separated into three groups which varied by exposure to either water, oxygen or light. It is also noted that the experiment was terminated after seven days. The description of the experimental procedure is incomplete, since the frequency of measurement is unclear, and a description of the measurement tools used at each step could not be located.

I. Description of Results

Approaching Competence The written summary of the results does not focus on observed quantitative measurements, or is illogical, or fails to highlight key findings and trends.

EVALUATOR COMMENTS: ATTEMPT 1

It is reasonably noted that after seven days, germination was noted in the seed in group A that had water, in the seed in group B that had been left open, and in both seeds in group B. The written results summary is insufficient, since it does not appear to focus on observed quantitative measurements. ---------- For instruction on describing and visually representing results, please visit the study plan for this course by clicking on the link located to the right of this rubric item's name. Navigate to “Module 5 – Data and Conclusion” and view the video entitled “Visual Representations” on page 12.

J. Visual Representation

Approaching Competence A data table, graph, or chart is provided for at least 1, but not each experimental manipulation. The method of data visualization does not effectively communicate the main findings of the experiment, it does not clearly represent the data, or it does not include each quantified variable. If the chosen data visualization is a table, either the values within the tables are not clearly labeled, or the data are misaligned or illegible. If the chosen visualization is a graph or chart, the axes or categories are not clearly labeled, or the data points are not precisely placed or are inaccurate, or the scale does not fit the range of the data.

EVALUATOR COMMENTS: ATTEMPT 1

A series of three data tables is provided indicating if the seeds in each group did or did not germinate. The data tables are insufficient because they do not appear to include any quantified variables from the experimental manipulations.

K. Hypothesis Discussion

Not Evident A discussion is not provided.

EVALUATOR COMMENTS: ATTEMPT 1

The conclusion provides a thoughtful discussion of the results that highlights the importance of water, oxygen and light to seed germination. A discussion that definitively states whether the hypothesis was confirmed, refuted or partially confirmed could not be located. ---------- For instruction on discussing whether the hypothesis was confirmed, refuted, or partially confirmed, please visit the study plan for this course by clicking on the link located to the right of this rubric item's name. Navigate to “Module 5 – Data and Conclusion” and view the video entitled “Conclusions” on page 13.

L. Uncontrolled Confounding Variables

Not Evident A description of uncontrolled confounding variables is not provided.

EVALUATOR COMMENTS: ATTEMPT 1

The conclusion smartly relates the observed results to past research on seed germination, including the importance of factors such as oxygen or air and temperature. A description of at least one uncontrolled confounding variable, including how this variable might have influenced the observed results, is not evident.

M. Relation of Results to Literature

Competent The discussion draws logical connections between the observed results and basic scientific principles and past research.

There are no comments for this aspect.

N. Sources

Competent The submission includes in-text citations for sources that are properly quoted, paraphrased, or summarized and a reference list that accurately identifies the author, date, title, and source location as available.

There are no comments for this aspect.

Professional Communication. null

Competent Content reflects attention to detail, is organized, and focuses on the main ideas as prescribed in the task or chosen by the candidate. Terminology is pertinent, is used correctly, and effectively conveys the intended meaning. Mechanics, usage, and grammar promote accurate interpretation and understanding.

There are no comments for this aspect.