

Science 7
Page 39
Inquiry Investigation
A mealworm Ecosystem

Name:

Partner:

Date:

Read page 39 very carefully.

1.) Question: (problem): (pick one or teacher will assign one habitat condition to your lab team.) 1 mark

2.) Hypothesis: (what you think and why) 2 marks

3.) Procedure: Write your detailed, numbered procedure of what to do. Your instructions should be very clear and specific so someone else could read it and do your experiment exactly the same way. 4 marks (rubric)***include diagrams and models


4.) Materials (list all the resources you need to do the experiment)

5.) Observations: (record what you observe with sentences, charts, graphs, etc.)

6.) Analyse questions:


Analyze

1. What variable(s) did you manipulate in this investigation? What was the responding variable(s)? Which variable(s) did you control in this experiment?




2. Summarize your results in words or diagrams.

3. Compare your results with those of others in your classroom. Did everyone have the same results? If not, what could be causing the differences?



4. Based on your observations, which habitat conditions do mealworms prefer?

5. How could you improve your experiment?





**ASSESSMENT
RUBRIC 3****Experiment Rubric**

Goal • Assess your method for doing science experiments you design yourself.

What to Do

- Study each of the expectations listed in the first column, then decide which level matches your experiment design. Circle your level in ink for each expectation.
- On the back of this master, list ways to improve your design of science experiments.

Performance Indicators

- At Level 1, work needs to improve a lot.
- At Level 2, work meets minimum requirements.
- At Level 3, work is satisfactory.
- At Level 4, work shows high technical competence.

Performance Criteria	Level 1	Level 2	Level 3	Level 4
Initiating and Planning <ul style="list-style-type: none"> • makes clear statement of problem or phrases questions in testable form • states hypothesis & specifies prediction • lists questions for further study 	I need lots of help with stating the problem or the question. I need help with my hypotheses find predictions.	I state a problem or question and a hypothesis, but not clearly.	My problem statement or questions and my hypothesis are clearly stated.	My problem statement or questions and my hypothesis are very clear.
Performing and Recording <ul style="list-style-type: none"> • describes steps in clear order • identifies variables • keeps other factors constant • follows safety rules • suggests strategy for repeated trials • records in clear, accurate diagrams • summarizes observed data neatly 	I proceed without a clear idea of order or methods required, even with help from my teacher. I followed safety rules, with some reminders. I have trouble with diagrams and summarizing data, unless guided by my teacher.	I apply lessons on each step of procedures with a lot of help from my teacher or classmates. I follow safety rules, with few reminders. I use diagrams to support results; however, my written data summaries are not clear.	I apply most lessons on each step of procedures by myself or with a few reminders from the teacher. I usually follow safety rules. I record data in clear diagrams and summarize observed data. I list questions for further study.	I proceed systematically with little advice from my teacher or classmates. I always act safely and help others follow rules. I record data in writing and diagrams using correct form and a highly technical quality. I list questions for further study.

**ASSESSMENT
RUBRIC 3****Experiment Rubric** (continued)

Performance Criteria	Level 1	Level 2	Level 3	Level 4
Analyzing and Interpreting <ul style="list-style-type: none"> states major findings clearly offers support from reference materials uses and interprets appropriate graphs 	<p>I need help to identify major findings and supporting details. I am unable to interpret graphs.</p>	<p>I can state major findings, but need help to support conclusions. I need help in including, and interpreting graphs.</p>	<p>I state major findings and give support clearly. I state the problem and hypothesis very clearly. I incorporate graphs well.</p>	<p>I offer clear conclusions with detailed support from a variety of sources. My graphs are appropriate, and I can interpret them fully.</p>
Communication and Teamwork <ul style="list-style-type: none"> makes key points of interpretation gives references in proper form communicates results clearly uses multi-media aids to support results shows understanding of experiment 	<p>I need help to identify key points, and to use proper reference form. I have difficulty expressing my findings. I need help to find and correct errors. I rarely use multi-media aids. I have difficulty understanding experiments</p>	<p>I can develop key points but need help to express them. I need help with some references. I present results with some errors. I use some multi-media aids as support. I show that I understand the experiment.</p>	<p>I interpret data for clear key points. I present results in good form, with full references, few errors, and multi-media aids in support. I show that I understand experiment.</p>	<p>I offer strong key points to interpret data. I present results with high technical quality, full references, no errors, and multi-media aids. I show strong understanding of experiment.</p>