

Hissing Cockroach Scientific Report Grading Rubric

Directions: Develop a 3+ page report (size 12 font) on the Madagascar hissing cockroach. Pose two research hypotheses (one about food preference and one about behavior) that you can investigate using your cockroach specimen. Your report should contain 6 components: title, introduction, methods, results, discussion and conclusions, and references. Refer to the materials provided in the Cockroach Pet assignments folder for additional information. This report will be evaluated using the following rubric:

1. Title (2 pts):

Design a title that clearly describes the feeding preference and behavior of your inquiry (2 pts total)

- Title provides clear description of research inquiry (+2 pts)
- Title present, but does not describe what the research inquiries are about (+1 pt)
- Title absent (0 pts)

2. Introduction (10 pts):

The introduction section must contain a description of the assignment purpose/objectives, description of two hypotheses and biological background information about the Madagascar Hissing Cockroach. These introductory components will be evaluated in the following way:

Define the purpose or objectives of the assignment (2 pts)

- Purpose or objectives of assignment clearly described (+2 pts)
- Purpose or objectives of assignment lack sufficient detail (+1 pt)
- Purpose or objectives of assignment not described (0 pts)

Present biological background information on the hissing cockroach (6 pts)

- *Classification information:* Class, Order, Family and scientific name (+1 pt)
- *Biology:* description of habitat, metamorphosis, and food resources (+1 pt each, for 3 pts)
- *Ecological importance* of Hissing Cockroach (+2 pts)

Develop and present two testable hypotheses (1 food preference/1 behavior) (1 pts/hypothesis, 2 pts total)

- Testable hypotheses stated (+2 pts)
- Hypotheses stated as questions or not as testable hypotheses (+1 pts)
- No hypotheses stated (0 pts)

3. Methods (8 pts):

The methods section should show that your experimental approach was appropriate for answering your research questions, account for how you controlled conditions and should be written so that someone else can carry out the same experiment that you did.

Explain experimental design and replication (2 pts/hypothesis, 4 pts total)

- Experimental designs are well-constructed tests of the stated hypotheses and involve replication (+2 pts)
- Designs are adequate to test hypotheses, but do not control important conditions, leave some unanswered questions or are not replicated (+1 pts)
- Experimental designs are not relevant to the hypotheses and replication is not used (0 pts)

Provide detailed, step by step description of procedures used to test hypotheses (2 pts/hypothesis, 4 pts total)

- Procedures are clearly described and could be followed by another individual (+2 pts)
- Procedures are stated, but unclear and lack major components (+1 pt)
- Procedures not stated (0 pts)

4. Results (12 points):

The results section should present the data generated from your experiment.

- Present data for each hypothesis in a table or graph (2 pts/hypothesis, 4 pts total)
- Logically analyze and present trends in data (2 pts/hypothesis, 4 pts total)

- Describe additional observations of interest made (4 pts)

5. Conclusions and Discussion (12 points):

The conclusion section should provide a concise summary of findings followed by a discussion of the relevance and meaning of the results.

- Present conclusions hypotheses and provide detailed description of data (2 pts/hypothesis, 4 pts total)
- Discuss and compare your results with scientific literature on hissing cockroaches (2 pts/hypothesis, 4 pts total)
- Discuss variables that could have influenced results (2 pts/hypothesis, 4 pts total)

6. References (2 pts)

List references using APA style, or other stated reference style (2 pts)

- Multiple (5+) references of various types are utilized to answer the research question or topic, including reputable websites (.edu, .org, .gov), research papers (use Google Scholar), books, videos, or other documents References are listed in correct format (+2 pts)
- Several (<5) references of various types are utilized but are predominantly less trustworthy resources (outdated content, anonymous authors, .com and .net websites, etc.) (+1 pt)
- Contains no references (0 pt)

Additional Evaluation:

Grammar and spelling (4 pts)

- 1 pt – very frequent grammar and/or spelling errors
- 2 pt – more than two errors
- 3 pt – only one or two errors
- 4 pt – all grammar and spelling are correct

Total Points (out of 50) _____

Deductions _____

Final Grade _____