

ASSESSMENT CRITERIA

Skill 1. Describe and explain biological concepts, theories, structures, and processes.			
Not Yet	Almost There	Got It	Exemplary
Attempts to address the task by making some connection to biological concepts.	Addresses the task using descriptions that are mostly accurate but may include minor misconceptions or misuses of terminology. Demonstrates a partial understanding of the relevant concepts.	Directly addresses tasks using appropriate terminology and accurate descriptions although explanations could be refined to provide more clarity or detail. Demonstrates an understanding of the relevant concepts and scientific thinking .	Directly addresses tasks in a clear and concise manner, using appropriate terminology, specific descriptions , and accurate explanations . Demonstrates a thorough understanding of the relevant concepts and deep scientific thinking .

Skill 2. Develop and use biological models.			
Not Yet	Almost There	Got It	Exemplary
Attempts to describe a model but includes major misconceptions or misinterpretations of the model.	Partially describes the components of a model but may include minor misconceptions or misinterpretations of some components of the model.	Accurately describes the components of a model and explains their relationship within a model, making some connections to broader biological concepts but these connections might be implied rather than explicitly stated. Demonstrates an ability to refine and compare models , as well as to explain the general purpose of a particular model.	Thoroughly integrates models into explanations , accurately describing the components of a model, explaining their relationship within a model, and making clear connections to broader biological concepts. Demonstrates an ability to construct , refine, and compare models, as well as to explain the appropriate uses , its underlying assumptions , and the benefits and shortcomings of a particular model.

Skill 3. Design experiments and conduct research using appropriate laboratory techniques and equipment.			
Not Yet	Almost There	Got It	Exemplary
Attempts to collect evidence related to a research question.	Designs methods to collect evidence related to research questions, but designs may need further consideration of the type and amount of data, as well as confounding variables.	Designs experiments that use appropriate laboratory techniques to gather quantitative evidence that addresses research questions . Demonstrates an ability to pose testable questions and justify research decisions using appropriate terminology .	Uses a creative, precise, and thoughtful approach to design feasible experiments that use appropriate laboratory techniques to gather a sufficient body of quantitative evidence that directly addresses research questions . Demonstrates an ability to pose thoughtful and specific testable questions , as well as to justify research decisions using appropriate terminology and convincing reasoning .

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Skill 4. Graph and analyze data to determine meaningful patterns.			
Not Yet	Almost There	Got It	Exemplary
Attempts to construct graphs but scale, labels, and/or plotting may need significant improvement.	Constructs graphs , given data preorganized in a table, with mostly appropriate scales and labels but type of data display selected might not be appropriate to the purpose of the analysis or the type of data collected.	Organizes simple data sets to reveal relationships, selects the appropriate type of data display , and constructs graphs with appropriate scales and clear labels with units . Demonstrates an ability to estimate data points of interest, summarize patterns, and use calculations (including means and percentages) to simplify data sets .	Effectively organizes complex data sets to reveal relationships, selects and justifies the appropriate type of data display based on the purpose of the analysis and type of data collected , and constructs graphs with appropriate scales and clear labels with units. Demonstrates an ability to estimate data points of interest, summarize patterns, use calculations (including means and percentages) to simplify data sets, and apply mathematical terms and symbols to describe quantitative relationships .

Skill 5. Use evidence to support or refute biological claims.			
Not Yet	Almost There	Got It	Exemplary
Makes biological claims and attempts to defend them based on evidence.	Evaluates biological claims and explains how evidence supports or contradicts a claim by making data comparisons which may be overly general or invalid. Demonstrates an ability to make and defend claims and predictions by making general connections between evidence and a conclusion.	Evaluates biological claims and explains how evidence supports or contradicts a claim by describing an appropriate data comparison needed to reach a particular conclusion . Demonstrates an ability to make and defend claims and predictions by articulating the reasoning that links biological theory and evidence to a conclusion , as well as an ability to engage in respectful argument by responding to criticism .	Evaluates biological claims and explains how evidence supports or contradicts a claim by describing a specific and appropriate data comparison needed to reach a particular conclusion in a clear and concise manner . Demonstrates an ability to make and defend claims and predictions by articulating succinct and specific reasoning that links biological theory and reliable evidence to a conclusion, as well as an ability to engage in respectful argument by responding to criticism and rebutting counterarguments .