

Communication in Science Rubric

Criteria	4 points (Exceeds Expectations)	3 points (Meets Expectations)	2 points (Approaching Expectations)	1 point (Needs Improvement)
Reading Textbooks	Identifies key concepts, analyzes arguments, and explains their significance in broader context. Connects ideas from different sections. Extends understanding beyond the text through additional resources.	Identifies key concepts and arguments. Connects ideas within a section. Seeks additional resources when needed.	Identifies key concepts in the text. Struggles to connect ideas or analyze arguments deeply. Uses minimal additional resources.	Struggles to identify key concepts or follow arguments. Does not use additional resources effectively.
Writing Hypothesis	Formulates a clear, testable, and specific hypothesis based on observations and research questions. Considers alternative explanations.	Formulates a clear and testable hypothesis based on observations. May not consider alternative explanations fully.	Formulates a somewhat clear or testable hypothesis. May lack connection to observations or research questions.	Formulates an unclear or untestable hypothesis.
Producing Papers/Presentations	Creates a well-organized, visually appealing paper/presentation with clear arguments, strong use of evidence (including graphics), and correct citations in a standard format. Delivers presentation confidently and effectively, engaging the audience.	Creates a well-organized and clear paper/presentation with logical arguments, appropriate evidence, and citations in a generally consistent format. Delivers presentation adequately with some engagement of the audience.	Creates a paper/presentation with some organization and clarity, but may contain logical flaws, limited evidence, or inconsistent citations. Delivers presentation with limited engagement of the audience.	Paper/presentation lacks organization, clarity, or logic. Evidence is weak or missing. Citations are absent or incorrect. Delivers presentation poorly or lacks confidence.
Following Lab Procedure	Follows instructions meticulously, ensuring accuracy and safety. Identifies and mitigates potential errors.	Follows instructions carefully, maintaining safety. May require occasional clarification.	Follows instructions with some errors or inconsistencies. May overlook safety concerns.	Frequently deviates from instructions or lacks understanding of procedures. May not prioritize safety.
Writing Procedures	Clearly and concisely outlines the steps of a procedure, ensuring replicability for others. Includes necessary details and safety precautions.	Outlines the steps of a procedure, but may lack clarity or specific details. Includes most safety precautions.	Outlines the steps of a procedure with some inconsistencies or missing information. May lack some safety precautions.	Provides a vague or incomplete outline of the procedure. May omit essential details or safety precautions.
Writing Conclusions	Analyzes data, draws logical conclusions supported by evidence, and acknowledges limitations of the study. Connects findings to broader scientific concepts.	Analyzes data and draws conclusions supported by evidence. May not fully acknowledge limitations or connect findings to broader concepts.	Analyzes data but struggles to draw clear conclusions or support them with evidence. May not address limitations.	Fails to analyze data or draw conclusions.
Analyzing Claims	Critically evaluates claims based on evidence, identifies logical fallacies, and recognizes potential biases.	Evaluates claims, considering evidence and potential biases. May identify basic logical fallacies.	Attempts to evaluate claims but struggles with complex evidence or biases.	Does not critically evaluate claims or recognize potential biases or fallacies.
Word Problems	Effectively applies scientific principles and mathematical skills to solve complex word problems, clearly demonstrating the thought process and solution.	Applies scientific principles and mathematical skills to solve word problems, with some minor errors or unclear explanations.	Attempts to solve word problems but struggles with applying concepts or demonstrating the thought process.	Unable to solve word problems or demonstrate understanding of relevant concepts.
Writing Lab Full Reports	Creates a comprehensive lab report with all essential sections (introduction, methods, results, discussion, conclusion) and detailed explanations throughout. Includes proper citations and accurate data presentation.	Creates a complete lab report with most essential sections, but explanations may lack detail or clarity. Citations and data presentation may have minor inconsistencies.	Creates a lab report missing some essential sections or including incomplete or unclear information. Citations or data presentation may have significant errors.	Creates an incomplete or unorganized lab report with missing sections or inaccurate information.
Critiquing Peers/Peer Review	Provides constructive feedback on peers' work, identifying strengths and weaknesses with specific suggestions for improvement. Maintains a respectful and professional tone.	Provides some feedback on peers' work, but may lack detail or constructive suggestions.	Provides limited or unclear feedback on peers' work. May lack a focus on improvement or maintain a disrespectful tone.	Does not provide any feedback or offer unhelpful or disrespectful comments.
Supporting Claims using Evidence and Reasoning (CER)	Clearly states a scientific claim, supports it with relevant and reliable evidence, and uses logical reasoning to explain how the evidence supports the claim.	States a scientific claim, supports it with relevant evidence, and includes reasoning that generally connects the evidence to the claim.	States a claim and includes some evidence, but the evidence may be limited or the reasoning may not clearly connect the evidence to the claim.	Makes an unclear or unsupported claim, uses little or no relevant evidence, or does not provide reasoning that connects evidence to the claim.