

Wilson Experimental Science Lab Scoring Rubric

Name _____ Lab Title: _____ Lab # _____ Minutes: _____ Points: /

Planning A		Aspects	
Levels	Defining the problem/research question	✓ Formulating a hypothesis/prediction	✓ Selecting Variables
Complete	A focused problem/research question is identified.	The hypothesis/prediction is directly related to the research question and is explained, quantitatively where appropriate.	The appropriate independent and controlled variable(s) are selected.
Partial	The problem/research question stated, but is unclear or incomplete.	The hypothesis/prediction is stated but not explained.	Some appropriate variables are selected.
Not At All	The problem/research question is not stated or the general aim provided by the teacher is repeated.	No hypothesis/prediction is stated.	No appropriate variables are selected.

_____ = Total Points for Planning A

Planning B		Aspects	
Levels	Designing a method with appropriate apparatus/materials	✓ Designing a realistic method for the control of variables	✓ Designing a method for the collection of sufficient relevant data
Complete	Appropriate apparatus/materials are selected.	The method allows for the control of the variables.	The method allows for the collection of sufficient relevant data.
Partial	Some appropriate apparatus/materials are selected.	The method makes some attempt to control the variables.	The method allows for the collection of insufficient relevant data.
Not At All	No apparatus/materials are selected.	The method does not allow for the control of the variables.	A method does not allow for the collection of any relevant data.

_____ = Total Points for Planning B

Data Collection		Aspects	
Levels	Collecting and recording raw data	✓ Organizing and presenting raw data	✓
Complete	Appropriate raw data (qualitative/quantitative) is recorded, including units and uncertainties where necessary.	Raw data is presented clearly, allowing for easy interpretation.	
Partial	Some appropriate raw data is recorded.	Raw data is presented but does not allow for easy interpretation.	
Not At All	No appropriate raw data is collected.	Raw data is presented incomprehensibly or is missing.	

_____ = Total Points for Data Collection

Data Proc. Present. & Conclusions		Aspects	
Levels	Processing raw data	✓ Presenting processed data	✓ Drawing Conclusions
Complete	The raw data is processed correctly. Any & all questions are answered properly.	Processed data are presented appropriately, helping interpretation, and where relevant, errors and uncertainties are taken into account. When appropriate, diagrams are accurate, complete and include labels.	A valid conclusion based on the correct interpretation of the results is given, with an explanation; where appropriate, results are compared with literature (accepted) values.
Partial	Some raw data is processed correctly. Most questions are answered properly.	Processed data are presented appropriately and when appropriate, diagrams are accurate, complete and include labels. but with some errors and omissions.	A conclusion that has some validity is stated.
Not At All	No processing of raw data is carried out or major errors are made in processing. Few or no question are answered properly.	Processed data are presented inappropriately or presented incomprehensibly.	A conclusion that misinterprets the results is drawn.

_____ = Total Points for Data Processing, Presentation and Conclusions

Evaluation		Aspects	
Levels	Evaluating procedures and results	✓ Improving the investigation	✓
Complete	Procedure(s) and results including limitations, weaknesses or errors are evaluated.	Realistic suggestions to improve the investigation following the identification of weakness(es) are stated.	
Partial	Procedure(s) and results are evaluated but some obvious limitations or errors are missed.	Suggestions to improve the investigation are simplistic.	
Not At All	The evaluation is superficial or irrelevant.	Suggestions to improve the investigation are unrealistic.	

_____ = Total Points for Evaluation

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Manipulative Skills		Aspects	
Levels	Carrying out techniques safely	✓	Following a variety of instructions
Complete	Is competent and methodical in the use of the technique(s) and equipment, pays attention to safety issues		Follows the instructions accurately, adapting to new circumstances (seeking assistance when required).
Partial	Requires assistance in the use of a routine technique. Works in a safe manner with occasional prompting.		Follows the instructions but requires assistance
Not At All	Does not carry out the technique(s) or misuses the equipment, showing no regard for safety.		Does not follow instructions or requires constant supervision.

_____ = Manipulative Skills Total Score

Personal Skills A		Aspects	
Levels	Working within a team (2 or more)	✓	Recognizing the contributions of others
Complete	Collaborates with others, recognizing their needs, in order to complete the task.		Expects, actively seeks and acknowledges the views of others.
Partial	Requires guidance to collaborate with others.		Acknowledges some views.
Not At All	Is unsuccessful when working with others.		Disregards views of others.

_____ = Personal Skills A Total Score

Personal Skills B		Aspects	
Levels	Approaching scientific investigations with self-motivation and perseverance	✓	Working in an ethical manner
Complete	Approaches the investigation with self-motivation and follows it through to completion.		Pays considerable attention to the authenticity of the data and information, and the approach to materials (living or non-living).
Partial	Approaches the investigation with self-motivation or follows it through to completion.		Pays some attention to the authenticity of the data and information, and the approach to materials (living or non-living).
Not At All	Lacks perseverance and motivation.		Pays little attention to the authenticity of the data and information, and the approach to materials (living or non-living).

_____ = Personal Skills B Total Score