

Biology Research Report Example Rubric

Learning outcome: Students will be able to apply and comprehend the scientific method.

Work product: Research Report

<i>Learning Outcome Component</i>	4	3	2	1
Application of scientific method to study design				
Selects and measures appropriate experimental factors	Selects experimental factors that are ideal to the research purpose and audience; measures adequate aspects of these selected factors	Selects experimental factors that are appropriate to the research purpose and audience; measures adequate aspects of these selected factors	Selects some experimental factors that are not appropriate to the research purpose and audience; measures adequate aspects of some of these selected factors	Selects experimental factors that are not appropriate to the research purpose; does not measure adequate aspects of these selected factors
Selects an appropriate sample size for the research purpose	Selects and explains appropriate sample size and equivalent groups	Selects appropriate sample size and equivalent groups, but provides no explanation	Research is weakened by inappropriate sample size	Does not consider sample size
Controls variables experimentally	Demonstrates, by written statement, the ability to control variables by randomization; makes reference to or implies factors to be disregarded by reference to pilot or experience	Demonstrates the ability to control important variables experimentally; methods section does not indicate knowledge of randomization or selectively disregards variables	Demonstrates the ability to control some but not all of the important variables experimentally	Demonstrates a lack of understanding about controlling variables
Comprehension of findings				
Communicates results clearly and thoroughly	Presents data to the reader in text as well as graphic forms; tables or graphs have self-contained headings; Data reported in graphs or tables are relevant and statistically appropriate	Presents data to the reader in text as well as graphic forms; tables or graphs do not have self-contained headings; Data reported in graphs or tables contain some materials that are irrelevant or not statistically appropriate	Presents data to the reader in text, but not graphically when appropriate	Does not communicate quantifiable results
Interprets data accurately	Summarizes the purpose and findings of the research; draws inferences that are consistent with the data and scientific reasoning; accepts or rejects hypothesis	Summarizes the purpose and findings of the research; draws inferences that are consistent with the data and scientific reasoning, but does not accept or reject the hypothesis; overgeneralizes to support conclusions	Summarizes the purpose and findings of the research; some inferences are not consistent with the data and scientific reasoning; does not accept or reject the hypothesis	Does not summarize or accurately interpret the results
Explains findings clearly	Explains expected results and offers explanations or suggestions for further research for unexpected results	Explains expected results and offers explanations for unexpected results; does not discuss suggestions for further research	Explains expected results but ignores unexpected results	Provides no explanation for expected or unexpected results

Rubric is a modification of one presented by: Walvoord, B. E. & Anderson, V. J. (1998). *Effective grading: A tool for learning and assessment*. San Francisco: Jossey-Bass Publishers.