

How to choose an experiment on which to write a formal write-up

A true science experiment is one that performs a test of how two variables might be related. Can you answer a question about one of the variables you are testing? It does not matter that your experiment has been done a thousand times before or that your teacher already knows the results. What matters is that you don't know the results and that you can independently find a verifiable answer. In real experiments, real hypotheses should be written before the actual experiment. Choose a true experiment and lab write-ups will not seem so useless.

Before doing your formal lab write up please look at the rubric below to see what you will be marked on. There are two rubrics. You may be marked with one or the other depending on the lab.

Lab Report Format

1. Your report was neat and legible.
2. The report was done with a word processing program, one inch margins and 12 point font.
3. Report used correct spelling, grammar and sentence structure.
4. Report followed proper sequenced format for a laboratory.
5. You selected a problem / procedure that was:
 - Lacking depth
 - Not up to your ability
 - Appropriate to your abilities
 - Challenging to your abilities
 - Very challenging to your abilities

WARNING: NOT ALL SCIENCE EXPERIMENTS ARE CREATED EQUAL

Formal Lab Report Rubric

Headings	Unacceptable	Incomplete	Acceptable	Good	Excellent	Total and Comments
Title / Introduction / Background	-Title is not present. -Has no introduction & or background.	-Title is not informative. -Has little or no introduction & or background.	-Has an acceptable title. -Has some introduction & or background.	-Title is informative. -Has sufficient introduction & or background.	-Title is very informative. -Has an extensive introduction & or background.	Title / Introduction / Background
Hypothesis	-No or unclear hypothesis	-Hypothesis is incomplete.	-Hypothesis is complete.	-Hypothesis identifies variable & control.	-Hypothesis identifies variable, control & makes a prediction.	Hypothesis:
Materials	-Material list very incomplete.	-Material list has some items.	-Material list is complete.	-Material list is complete and has amounts required.	-Material list is complete with amounts required. -Includes necessary equipment.	Materials
Protocol	-Little information or direction.	-Some information or directions. -Missing step format.	-Information or directions complete. -Has step format. -Controlled set-up.	-Information or directions very complete. -Contains diagrams. -Has step format. -Has data collection criteria. -Controlled set-up. -Valid test of variable.	-Information or directions are excellent. -Contains several diagrams. -Has step format. -Has data collection criteria. -Controlled set-up. -Valid test of variable. -Lab has replicates.	Protocol
Results	-Missing several of the following or incomplete. -Data in labeled chart or table, using correct units. -Data summarized.	-Missing more than one of the following or incomplete. -Data in labeled chart or table, using correct units. -Data summarized.	-Missing one of the following or incomplete. -Data in labeled chart or table, using correct units. -Data summarized.	-All of the following done well. -Data in labeled chart or table, using correct units. -Data summarized.	-All of the following excellent. -Data in labeled chart or table, using correct units. -Data summarized.	Results
Discussion	-Contains one out of the five items listed in the last column.	-Contains one out of the five items listed in the last column.	-Contains one out of the five items listed in the last column.	-Contains four out of the five items listed in the last column.	-Discuss the results completely. -Discuss the relationship(s) completely between results and the hypothesis. -Explain the findings.	Discussion:
Conclusion	-Contains one out of the five items listed in the last column.	-Contains one out of the five items listed in the last column.	-Contains one out of the five items listed in the last column.	-Contains four out of the five items listed in the last column.	-State the purpose of experiment. -State major findings. -Sources of error. -Experiment future expansion. -State conclusion	Conclusion:
Lab Report Format	-Contains few items listed below. -Problem selected was lacking depth.	-Contains several items listed below. -Problem selected was not up your abilities.	-Contains most items listed below. -Problem selected was appropriate.	-Contains most items listed below. -Problem selected was challenging.	-Contains all listed below. -Problem selected was very challenging.	Lab Report Format:

DATE:

NAME:

CLASS:

**ASSESSMENT
RUBRIC 5**

Conduct an Investigation Rubric

Performance Indicators

Level 1: Not yet within expectations

Level 3: Fully meets expectations

Level 2: Meets expectations (minimal level)

Level 4: Exceeds expectations

Performance Criteria	Level 1	Level 2	Level 3	Level 4
Investigation Design <ul style="list-style-type: none"> develops design to test a prediction clearly 	Student needs help to shape ideas.	Student can apply lessons, with help.	Student knows how to test a prediction.	Student shows ability in prediction testing.
Materials Needed <ul style="list-style-type: none"> selects materials for design 	Student needs frequent direction.	Student needs some prompts on materials.	Student can select needed materials.	Student readily selects needed materials.
Methods and Procedures <ul style="list-style-type: none"> identifies variables uses instruments 	Student needs much guidance and prompting on variables and measuring with instruments.	Student needs some guidance and prompting on variables and often has to re-measure.	Student makes relevant choices on variables and measures well with instruments.	Student makes effective choices for variables and uses instruments without help.
Safety <ul style="list-style-type: none"> recognizes and takes safety precautions 	Student needs prompting on safety rules.	Student knows safety rules, needs prompts.	Student recognizes and follows rules.	Student leads others to work safety.
Data Collection by Observation <ul style="list-style-type: none"> makes and records detailed observations is systematic 	Student can record detailed observations on tables and charts if provided.	Student can record detailed observations in self-designed tables and charts.	Student makes observations, records them in self-designed tables and charts.	Student can predict data trends through recorded observations.
Analysis of Data <ul style="list-style-type: none"> assesses problems by careful analysis of data collected 	Student shows little awareness of analytical methods.	Student interprets data but needs help relating to inquiry problem.	Student interprets data to assess inquiry problem.	Student relates interpreted data to inquiry problem.

Grammar and Spelling <ul style="list-style-type: none"> • finds and fixes errors for final write-up 	Student reports usually have some errors.	Student reports have few errors.	Student finds errors before final write-up.	Student rarely makes errors; helps others.
Report Presentation <ul style="list-style-type: none"> • hands in write-up that is neat, well organized, and complete 	Student report meets only one criterion.	Student report meets two criteria.	Student report is neat, complete, and well organized.	Student report shows formal structure and organization.