

Independent Investigation Guidelines

Step 1: Create a Question

- ▶ What do you want to find out?
- ▶ Does your question relate to the topic?
- ▶ Can you develop an experiment to answer your question?
- ▶ Does your question make sense? Is it confusing?

Step 2: Hypothesis

- ▶ What do you think will happen?
- ▶ BE SPECIFIC!
- ▶ Use complete sentences.

Step 3: Procedure

- ▶ What steps will you follow to find an answer?
 - ✓ BE SPECIFIC! Label your steps using 1, 2, 3, etc.
 - ✓ Would someone else be able to follow your directions?
- ▶ How will you collect your data?
- ▶ How will you ensure reliable results?
- ▶ What safety issues need to be addressed?

Step 4: Experiment & Data

- ▶ Be sure to display your data in an organized manner. Use a table or chart to help you show your results. Don't forget to label!
- ▶ Include enough data to prove or disprove your hypothesis.

Step 5: Analysis/Conclusion

- ▶ What happened during your experiment?
- ▶ Did your results support your hypothesis?
- ▶ Write a summary of what you learned during your experiment and address your results.
- ▶ Explain any unexpected results.
- ▶ Are your results reliable?
- ▶ Did you use complete sentences?

Independent Investigation

Name _____

Question

What do you want to find out?

Hypothesis

What do you think will happen?

Procedure

Design your experiment! Write the steps for your experiment in the space below.

Safety Rules

What safety rules do you need to follow during your experiment?

Data

Create a table, chart, or graph to record your data.

Conclusion/Analysis

What did you find out? Did your results support your hypothesis? Are your results reliable?

Independent Investigation Rubric

Name _____

Category/Value	Excellent	Good	Fair	Needs Improvement
Question/ Purpose _____ x 1 = _____ pts	The purpose of the lab or the question to be answered during the lab is clearly identified and stated.	The purpose of the lab or the question to be answered during the lab is identified, but is stated in a somewhat unclear manner.	The purpose of the lab or the question to be answered during the lab is partially identified, and is stated in an unclear manner.	The purpose of the lab or the question to be answered during the lab is erroneous or irrelevant.
	4	3	2	1 0
Procedures _____ x 2 = _____ pts	Procedures are listed in a logical order. Each step is numbered and is a complete sentence.	Procedures are listed in a logical order, but steps are not numbered and/or are not in complete sentences.	Procedures are listed but are not in a logical order or are difficult to follow.	Procedures do not accurately list the steps of the experiment.
	4	3	2	1 0
Data _____ x 1 = _____ pts	Accurate representation of the data in tables and/or graphs. Charts, graphs and tables are labeled and titled.	Fair representation of the data in tables and/or graphs. Charts, graphs and tables lack labels and/or titles.	Provides representation of the data in written form, but no charts, graphs, or tables are presented.	Data are not shown OR are inaccurate.
	4	3	2	1 0
Conclusion/ Analysis _____ x 2 = _____ pts	Conclusion includes whether the findings supported the hypothesis, possible sources of error, and what was learned from the experiment.	Conclusion includes whether the findings supported the hypothesis and what was learned from the experiment.	Conclusion includes what was learned from the experiment.	No conclusion was included in the report OR shows little effort and reflection.
	4	3	2	1 0
Participation _____ x 1 = _____ pts	Used time well in lab and focused attention on the experiment.	Used time well and stayed focused on the experiment <u>most</u> of the time.	Did the lab but did not appear very interested. Focus was lost on several occasions.	Participation was minimal or none.
	4	3	2	1 0

Points Possible = 28 Points Earned = _____ Final Grade = _____ % A B C D F