

A. The Title

Correctly states the independent variable and the dependent variable and is NOT worded as a QUESTION.

It is important to be as accurate as you can in the description of the variables.

Suggested format: The Effect of ___(Independent Variable)___ on ___(Dependent Variable)___

Who is responsible:

Done:

B. The Question

states the independent variable and the dependent variable, and is testable.

It is important to be as accurate as you can in the description of the variables.

Suggested format: How will ___(IV)___ affect ___(DV)___?

Who is responsible:

Done:

C. The Hypothesis

predicts the effect that changing the independent variable will have on the dependent variable, AND explains the reason for the prediction using scientific concepts ("because...")

Suggested format: If ___(describe a change in the IV)___ then ___(describe how you expect the DV to change)___ because ___(provide one or more science concepts that you have learned about that help explain the connection between the change in the IV and DV)___

Who is responsible:

Done:

D. Background Research (found throughout the project especially within the hypothesis and discussion/ conclusion sections)

Background research contains MANY relevant, well-chosen facts, definitions, concrete details, quotations, scientific concepts, or other information and examples that:

- provide information on the IV & DV; defining them and explaining the relationship between them AND
- support the 'because' portion of the hypothesis AND
- support the 'scientific reasoning' of the discussion/conclusion

Who is responsible:

Done:

E. Investigation Design (ID)

All 5 components of the investigation's design (or ID) are stated correctly and explicitly, AND only one independent variable (or IV) is allowed to change at a time, AND there are multiple trials

The 5 components are:

- 1) The Independent Variable
- 2) The Dependent Variable
- 3) The levels or range of the IV
- 4) The number of trials (or data points for secondary research)
- 5) The variables that are held constant

Who is responsible:

Done:

F. The Procedure

- is a step-by-step description of how the investigation was done AND
- uses precise language and scientific vocabulary to describe both the sequence of actions taken and materials used AND
- is sufficiently detailed to enable the reader to replicate the investigation AND
- is consistent with the Investigation Design Diagram (IDD) and is an appropriate test of the hypothesis.

Who is responsible:

Done:

G. Data/Results (Tables and Graphs, and Data Analysis)

Data table(s) and graph(s)

- are accurate and include correct labels (titles, correct units of measure) AND
- address the hypothesis AND
- have been chosen to clearly address the original question AND

Data analysis identifies and summarizes trends or patterns in the data.

Who is responsible:

Done:

H. a. Discussion/Conclusion: Scientific Explanation

A scientific explanation consisting of a statement that

- makes an overall claim addressing the original investigation question AND
- supports the claim with evidence and relevant, accurate data from the investigation AND
- contains relevant scientific concepts with reasoning AND
- uses words, phrases and clauses that clarify and connect the relationships between claim, evidence and reasoning AND
- demonstrates an understanding of the topic.

Who is responsible:

Done:

H. b. Discussion/Conclusion: Reflections

Conclusion contains thoughtful, relevant, and reasonable reflections including

- states whether the hypothesis was or was not supported AND
- a description of possible sources of error or inaccuracy AND
- suggested solutions to these sources of error or changes in the procedure that would improve the investigation AND
- "Next Steps" or additional questions that arise as a result of this investigation.

Who is responsible:

Done:

I. Literature Cited (applies throughout the project) (align citation format with school's expectations)

A sufficient number of credible sources

- are listed in the bibliography in an appropriate format that allows the reader to locate the resource AND
- are cited in the text of the hypothesis, background research, conclusion, and other sections as appropriate AND
- include books, articles, scholarly websites, or personal communication with knowledgeable experts/scientists.

Who is responsible:

Done: