

MY INVESTIGATION REPORT

CRITERION B – INQUIRYING AND DESIGNING

COVER PAGE: Title of lab, Date of submission, Name of Teacher, Your name, Number of pages

TITLE: Think of an appropriate title which relates to the investigation.

FOCUSED PROBLEM:

- What are you trying to find and how are you going to find it?
- This is the question that you are trying to answer by doing your experiment.

HYPOTHESIS:

- What do you think will happen in your experiment and why.
- What patterns will your results show?
- Explain why you think this will happen using what you already know about science and the work of scientists

VARIABLES:

- **Controlled Variable:** List all of the variables that you will keep the same throughout the entire experiment. (CONSTANT)
- **Independent Variable:** Name the variable that you will change in the experiments and how it will be measured. (MANIPULATED)
- **Dependent Variable:** Name the variable that will MEASURE and how it will be measured. (MEASURED)

MATERIALS

- List all of the specific apparatus and materials (include amounts) that you will use in this experiment.

METHOD:

- Describe clearly what you will do in the order in which you will do it.
- Explain how you will take steps to get the most accurate measurements and results that you can.
- Explain/(show in your data table) how you will collect sufficient and reliable data
- Write down your safety points
- How many times will you repeat your tests/ results?

DIAGRAM: A clearly labeled diagram showing all of the apparatus you will use “in action”.

Criterion B: Inquiring and Designing				
(0)	Beginning (1-2)	Developing (3-4)	Accomplished (5-6)	Exemplary (7-8)
I have not achieved a standard described by any of the descriptors to the right.	I am able to: state a problem or question to be tested by a scientific investigation outline a testable hypothesis outline the variables design a method, with limited success.	I am able to: outline a problem or question to be tested by a scientific investigation formulate a testable hypothesis using scientific reasoning outline how to manipulate the variables, and outline how relevant data will be collected design a safe method in which he or she selects materials and equipment.	I am able to: describe a problem or question to be tested by a scientific investigation formulate and explain a testable hypothesis using scientific reasoning describe how to manipulate the variables, and describe how sufficient, relevant data will be collected design a complete and safe method in which I select appropriate materials and equipment.	I am able to: explain a problem or question to be tested by a scientific investigation formulate and explain a testable hypothesis using correct scientific reasoning explain how to manipulate the variables, and explain how sufficient, relevant data will be collected design a logical, complete and safe method in which I select appropriate materials and equipment.

CRITERION C – PROCESSING AND EVALUATING

RESULTS / DATA COLLECTION

- Present all of your results clearly.
- Measured results should be in a table; include all headings and units
- Remember to include observations (**Qualitative**) as well as measurements (**Quantitative**)

INTERPRETING DATA

- Show your calculations and / or statistical analysis.
- Table the calculated values including *values* and *units*.
- A graph may be a good way to interpret your results.
- Label each graph or table appropriately (Title, values, Fig. 3; Fig A, etc.)

EVALUATION OF THE METHOD — be critical as there is always room for error and overall improvement

A. Validity of the hypothesis based on the outcome of the investigation:

- Includes a statement about the hypothesis being supported or not supported.

B. Validity of the method based on the outcome of the investigation:

- Did your equipment/instruments measure what it was supposed to?
- Did you have only one independent variable and one dependent variable?
- Did you have a control set up? And/or include a detailed list of the controlled variable?

C. Suggestions for improvement or extensions to the method:

- How could you have made your experiment method better?
- How could you have obtained more accurate results?
- What would you suggest for students doing this experiment next time; what more could you test?

CONCLUSION: Summarize what you found *and how you know it using your graph and table of results.*

- Is there a pattern in your results?
- Describe in words what is happening in your graph or table
- Comment on the reliability of the data. Did you get any results you did not expect? (poor results or ones that did not fit the pattern?)
- Explain what is happening in your data (make specific reference to appropriate graphs and tables)
- Is this what you predicted would happen?
- Explain your results using what you *already know* about Science.

Criterion C: Processing and Evaluating

(0)	Beginning (1-2)	Developing (3-4)	Accomplished (5-6)	Exemplary (7-8)
<i>I have not achieved a standard described by any of the descriptors to the right.</i>	<p><i>I am able to:</i> collect and present data in numerical and/or visual forms interpret data state the validity of a hypothesis based on the outcome of a scientific investigation state the validity of the method based on the outcome of a scientific investigation state improvements or extensions to the method.</p>	<p><i>I am able to:</i> correctly collect and present data in numerical and/or visual forms accurately interpret data and explain results outline the validity of a hypothesis based on the outcome of a scientific investigation outline the validity of the method based on the outcome of a scientific investigation outline improvements or extensions to the method that would benefit the scientific investigation.</p>	<p><i>I am able to:</i> correctly collect, organize and present data in numerical and/or visual forms accurately interpret data and explain results using scientific reasoning discuss the validity of a hypothesis based on the outcome of a scientific investigation discuss the validity of the method based on the outcome of a scientific investigation describe improvements or extensions to the method that would benefit the scientific investigation.</p>	<p><i>I am able to:</i> correctly collect, organize, transform and present data in numerical and/ or visual forms accurately interpret data and explain results using correct scientific reasoning evaluate the validity of a hypothesis based on the outcome of a scientific investigation evaluate the validity of the method based on the outcome of a scientific investigation explain improvements or extensions to the method that would benefit the scientific investigation.</p>