Science Lab Report Format with Explanations – 8th grade

Follow the format below for all of your lab reports in science. Words in italics are instructions to you. They do not need to be copied. The headings should be copied and underlined exactly as this format shows. Use this format as a reference for all inquiry labs in science.

Title: A concise, yet descriptive title

Title: ________________________________________________

How do I scientifically inquire?

INQUIRING AND DESIGNING (Criterion B)

This part of your process will include:
- Defining the Problem/Question (B.i)
- Hypothesis (B.ii)
- Variables (B.iii)
- Materials (B.iv)
- Procedure (B.iv)

The first part of any inquiry will be deciding on what question you will try to answer, and then how you will answer the question.

Defining the Problem or Question: What question(s) are you trying to answer? Write one to two sentences explaining why we are doing this lab—what we were trying to find out, what question we were trying to answer, or what problem we were trying to solve.

Question: ________________________________________________

_________________________________________________________________________________________  

Variables: Variables are the part of your experiment that you will change and measure. In a scientific inquiry you will change only one type of thing, and only measure one type of thing. The independent variable is the one you purposely change and the dependent variable is what changes and is measured.

Variables:

Independent – (x axis):

Dependent – (y axis):
Hypothesis: Write a possible solution for the problem, this is your prediction. This is written as a complete sentence. Make sure the statement is testable. A typical hypothesis is an “If . . . then” statement. The statement should reference the independent and dependent variables: such as “The plant group receiving fertilizer (independent variable) will produce more fruit (dependent variable) than the plants that did not receive fertilizer (independent variable).”

Hypothesis: If ____________________________________________ the ____________________
 THEN the __________________________________________ will __________________________
 Because __________________________________________________________________________

Materials: Make a list of all items used in the lab, including quantities (do not include safety materials).

Procedure: Write a numbered list which explains what you did in the lab. Your procedure should be written so that anyone else could repeat the experiment.

Procedure:

PROCESSING AND EVALUATING (Criterion C)

After you have properly planned your inquiry, you may conduct your investigation! You will collect your data, then process it to create graphs and tables. This will help you evaluate your hypothesis by finding patterns in the data.

This part of your process will include:
• Observations and Collecting Raw Data (C.i)
• Data Processing (C.i)
• Graphing (C.i)
• Patterns (C.ii)
• Conclusion - evaluating the Hypothesis (C.iii), evaluating the method (C.iv), and suggesting improvements (C.v)

Observations and Raw Data: This section contains a summary of your data in the form of graphs, tables, diagrams, calculations, etc. All of these should be labeled appropriately. This section can also include written observations.

Representing data. (Quantitative) – this could be any type of table or chart you choose that represents your data properly. Be sure to include a title, labeled boxes, and use proper units. The data table you make to is to organize and record measurements during your experiment.
Written observations. (Qualitative) – descriptions such as sights, sounds, smells, etc. you have observed during your experiment

Collecting Raw Data – Make a table to collect the information. Think about what you are collecting and how to organize the data BEFORE you make a table. Add a title and identify the data collected (units belong in title boxes of table).

Title:

<table>
<thead>
<tr>
<th>(X axis) Independent variable:</th>
<th>(Y axis) Dependent variable:</th>
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Data Processing: Write any formulas you use and an example calculation.

Graphs All graphs and charts should be labeled appropriately. Graphs can be any type that is appropriate (bar, line, circle). Think about what type of graph is the most appropriate for this lab. Refer to the “Graphing Rules” handout if needed. Be sure to include a title and label axes and data for the graph correctly.

Patterns: Explain what your data is describing using words like “increase” or “decrease”, and phrases such as “the data shows...” or “the dependent variable...”.
Conclusion - Writing it!

A conclusion paragraph contains a description of the purpose of the experiment, a discussion of your major findings, an explanation of your findings, and improvements to the experiment. Do not number the sentences, but include the answers to the below questions:

1. Restate the overall purpose of the experiment (include Independent Variable and Dependent Variable in this sentence.)

2. What were the major findings? (Summarize your data and graph results)

3. Was the hypothesis supported by the data? How do you know?

4. Don’t give the procedure again, but do point out possible sources of error that may have occurred in the collection of data and suggest improvements.

Conclusion:
Lab Report Rubric (MYP YR 3)

**Criterion B: Inquiring & Designing**

i. describe a problem or question to be tested by a scientific investigation
ii. outline a testable hypothesis and explain it using scientific reasoning
iii. describe how to manipulate the variables, and describe how data will be collected
iv. design scientific investigations

<table>
<thead>
<tr>
<th>Level</th>
<th>Descriptor – The student is able to:</th>
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| 1-2   | i. **state** a problem or question to be tested by a scientific investigation, with **limited success**  
      ii. **state** a testable hypothesis  
      iii. **state** the variables  
      IV. **design a method, with limited success** |
| 3-4   | i. **state** a problem or question to be tested by a scientific investigation  
      ii. **outline** a testable hypothesis using **scientific reasoning**  
      iii. **outline** how to manipulate the variables, and **state** how relevant data will be collected  
      IV. **design a safe method in which he or she selects materials and equipment** |
| 5-6   | i. **state** a problem or question to be tested by a scientific investigation  
      ii. **outline and explain** a testable hypothesis using **scientific reasoning**  
      iii. **outline** how to manipulate the variables, and **outline** how sufficient, relevant data will be collected  
      IV. **design a complete and safe method in which he or she selects appropriate materials and equipment** |
| 7-8   | i. **describe** a problem or question to be tested by a scientific investigation  
      ii. **outline and explain** a testable hypothesis using **correct scientific reasoning**  
      iii. **describe** how to manipulate the variables, and **describe** how sufficient, relevant data will be collected  
      IV. **design a logical, complete and safe method in which he or she selects appropriate materials and equipment** |

**Criterion C: Processing & Evaluating**

i. present collected and transformed data
ii. interpret data and describe results using scientific reasoning
iii. discuss the validity of a hypothesis based on the outcome of the scientific investigation
iv. discuss the validity of the method
v. describe improvements or extensions to the method

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<thead>
<tr>
<th>Level</th>
<th>Descriptor - The student is able to:</th>
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| 1-2   | i. **collect and present** data in numerical and/or visual forms  
      ii. **accurately interpret** data  
      iii. **state** the validity of a hypothesis with **limited reference** to a scientific investigation  
      IV. **state** the validity of the method with **limited reference** to a scientific investigation  
      V. **state limited improvements to the method** |
| 3-4   | i. **correctly collect and present** data in numerical and/or visual forms  
      ii. **accurately interpret** data and **describe** results  
      iii. **state** the validity of a hypothesis based on the outcome of a scientific investigation  
      IV. **state** the validity of the method based on the outcome of a scientific investigation  
      V. **state improvements to the method that would benefit the scientific investigation** |
| 5-6   | i. **correctly collect, organize and present** data in numerical and/or visual forms  
      ii. **accurately interpret** data and **describe** results using **scientific reasoning**  
      iii. **outline** the validity of a hypothesis based on the outcome of a scientific investigation  
      IV. **outline** the validity of the method based on the outcome of a scientific investigation  
      V. **outline improvements to the method that would benefit the scientific investigation** |
| 7-8   | i. **correctly collect, organize, transform and present** data in numerical and/or visual forms  
      ii. **accurately interpret** data and **describe** results using **correct scientific reasoning**  
      iii. **discuss** the validity of a hypothesis based on the outcome of a scientific investigation  
      IV. **discuss** the validity of the method based on the outcome of a scientific investigation  
      V. **describe** improvements to the method that would benefit the scientific investigation.