**SCIENCE FAIR WRITING REPORT**

**TITLE** A title is a general or descriptive heading. An example of a creative title is “Purple Petunias,” or “Bullet Trains are Levitating”

**Rubric** **Criterion**

Title is creative and clearly relates to the project 0 pt 1pt.Total:\_\_\_\_\_\_\_\_\_\_\_\_\_

**Purpose**

The process of understanding the Scientific Method begins with observing or wondering about something in the world. It involves wondering how, why, and/or when something occurs. Discovery of things that are “new” usually begins with observation using the five senses: Sight, Sound, Smell, Touch, and Taste. **Key Words** Who What When Where Why How Explain Describe Observation Questions What do I wonder about it? What do I want to find out? These are few questions that will guide students’ explanation of the purpose of doing the science project. The students need to express their purpose of choosing the inquiry as a specific justification of the reasons that motivate them to investigate.

**Rubric** **Criterion**

Purpose states clearly the purpose of experiment

Written using complete sentences

Written with correct spelling, punctuation, etc. 0 pts 1 pt 2 pts 3pt Total: \_\_\_\_\_\_\_\_\_\_

**Research Report based on BACKGROUND INFORMATION & BIBLIOGRAPHY**

After a topic has been chosen, the next step is research. Research is the process of collecting information from experience, knowledgeable sources, and experiments. *To get started, think about these questions:* What do I know about my topic? What additional information would help me? How can I use different sources of information to gather the information I need? You need to use several different sources when conducting research. Examples include: Books Magazines Professional Journals Newspapers Internet Interviews You need to use reliable resources. Not all web sites have accurate information. Make sure the information obtained can be verified in more than one source. You need to check the relevancy of the information, how qualified the author is, and whether or not the information could be biased. You need to use .gov .edu .org and other reliable sources; search engines such as Wikipedia are not acceptable. You need a minimum of 5 sources.

 **HYPOTHESIS** *A hypothesis is a prediction or simply an educated guess (a prediction) about the solution to a problem.* It is important to conduct research and consider prior knowledge before formulating a hypothesis. You will test your hypothesis by performing an experiment. To form a hypothesis, you should focus on the problem and make an “If then” statement about the problem. **A hypothesis is a single statement about how two factors (independent variable and dependent variable) are** **related to each other.** For example, “If the temperature in a room is changed, then mold will grow faster on white bread” OR “If the barometric pressure drops in a tropical depression, then a hurricane will form.” Once the hypothesis is written, you need to write several facts from your research that explains why you believe your hypothesis to be correct.

**Research Rubric** **Criterion**

Uses appropriate sources to research topic

Prepares an outline of information (who, what, when, where, how) for background information.

Is written using students own words

Is written using complete sentences

Is written with correct spelling, punctuation, etc.

Points 0pts 1pts 2pts 3pts 4pts 5pts Total points\_\_\_\_\_\_\_\_

**Hypothesis Rubric** **Criterion**

Hypothesis is written in If/Then form

Includes facts/information to support hypothesis

Points 0pts 1pt 2pts Total: \_\_\_\_\_\_\_\_\_\_

**PROCEDURES** *A procedure is a way of doing something or getting something done.* The procedures are written in complete sentences. They are listed and numbered. A procedure needs to be written clearly enough so that someone else can perform the same experiment and needs to be written in a passive voice (using past tens of the verb to be was, were). This is a step-by-step guide to doing the experiment. For example:

1. One graduated cylinder was filled with 75-ml of distilled water.

2 .02 grams of Copper was placed .in one plastic cup.

3.1 gram of Sulfide was place in the same plastic cup.

4. 75-ml of distilled water was added to the plastic cup.

**MATERIALS**

*Materials are the substance or substances from which something is or can be made.* *Materials are tools or apparatus needed to perform a certain task.* Materials that are used during an experiment need to be listed. The amounts of the materials need to also be listed. Below is an example of a materials list: 12 300-ml Plastic cups at room temperature 1 250-ml graduated cylinder 1 stopwatch 30 small paper plates 1 Triple Beam Balance .Follow guidelines on form and request appropriate documents from teacher or Science Fair Coordinator.

 **Rubric** **Criterion**

Procedure is clear and precise (e.g. steps are in order, easy to follow, etc.)

Procedure is written in complete sentences with proper spelling/grammar

All materials are clearly listed

Amounts or quantity used are included in list of materials 0pt, 1pt, 2pt, 3pt, 4pt Total: \_\_\_\_\_\_\_\_\_\_

**DATA**

*Data is what is observed. Data is listed in the form of a table.* The data is then used to make charts or graphs, so that you can clearly see the results from the data. The student needs to record their data collected through measurements or observations in a clearly labeled data table. The student will use the data table to construct the appropriate type of graph to provide a pictorial representation of what happened during the experiment. The student will write and explain the variables of the experiment. A variable is anything that affects your topic and can or cannot be changed in your experiment. There are three types of variables: dependent, independent, and control. A dependent variable is the change that happens in your experiment or what you are measuring. The independent variable is the one thing that that you can change in your experiment to figure out what impact it has on the topic you are studying. The control variable is the variable that is not changed; it shows what happens when the independent variable is not applied. An easy way to identify the variables in an experiment is to fill in the blanks of the following sentence, The \_\_\_\_ depends on \_\_\_\_\_\_\_\_\_. For example, in an experiment testing the effects of temperature on the growth of bread mold would be….. The growth of mold depends on the temperature of a room. The growth of mold is the dependent variable and the temperature is the independent variable. You will be changing the temperature of the room so the growth of the mold will be affected. A control would be a room that is always at the same constant set temperature with no changes.

**CONCLUSION** *The conclusion is the full explanation of what your project was and what it showed you.* A conclusion will answer your problem and your hypothesis, based on the data collected during your experiment. You will explain any problems and how you would correct them in the future. You will need to explain what you would do differently if you did the experiment again. If your results are different then you expected you need to discuss this. You also need to discuss any other questions you have now after doing the experiment. **APPLICATION** The *application* of a project is another way of saying *how might the result of this project* *be used.* This should be a short paragraph that explains how the data/information that was found in the experiment could be used.

**Rubric** **Criterion**

Data recorded using charts, graphs, tables, photos, etc.

Charts, graphs, tables, etc. are organized and easy to read

Identified dependent, independent, and control variables

Conclusion states if hypothesis was correct/incorrect with explanation

Conclusion includes analysis of data (what was found, why)

Conclusion includes limitations (problems) of experiment

Conclusion includes recommendations for future experiments

 Application states how information/data could be used

 Are written using complete sentences

 Are written with correct spelling, punctuation, etc. **0pts** **to 10pts** Total: \_\_\_\_\_\_\_\_\_\_\_

**SCIENCE FAIR BOARD**

Boards should be set-up or organized as shown below. Project Title Purpose Hypothesis Procedures and Materials Conclusion Data & Analysis Abstract. Nothing but paper should be on boards. Officials prefer pictures of objects/materials instead of attaching object/materials to the boards. Any photos must be credited (e.g. photo taken by……) and copyrighted pictures are not permitted without permission.