**2019 PAS LOWER SCHOOL SCIENCE FAIR LOG ENTRY ASSIGNMENTS (4th Grade)**

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**LOG ENTRY #1 – Brainstorming (completed by October 1st)﻿﻿﻿﻿﻿﻿**

1. Create a personal brainstorming chart of topics you like and possible questions you might be interested in investigating.

2. If you already know your topic, write it down and explain why you are interested in investigating this question.

**\*\*\*If you need project ideas, go to https://www.sciencebuddies.org\*\*\***

**LOG ENTRY #2 –Question (completed by October 7th)﻿**

1. What question have you chosen to investigate for the Science Fair?

2. What do you already know about this topic? Give as much detail as possible!

3. Real-World Application: How will the knowledge you gain from your experiment be helpful in the real world? Who will benefit and how?

**RESEARCH: Between Entries 2 and 3, you are conducting your research.** As you conduct your research, take good notes in your lab notebook and record your sources.

**LOG ENTRY #3 – Hypothesis and Variables (completed by October 14th)**

1. My hypothesis: (Format as an “If, then” statement.)

2. I base my hypothesis on ... (cite prior knowledge and research gathered)

3. My Independent variable is:

4. My Dependent variable is:

5. My Controlled variables include: (List as many as you can.)

**LOG ENTRY #4 – Procedure (completed by October 21st)**

List the step-by-step procedure you will follow to conduct your experiment.

**LOG ENTRY #5 – Materials (completed by October 21st):**

List all materials required for your experiment. Be sure to include quantities.

**LOG ENTRY #6 – Risk Assessment (completed by October 21st)**

1. Identify and describe any risks involved in your experiment. List any hazardous activity, device, chemical, or microorganism and explain the risks involved.

2. Describe safety precautions and procedures that will be used to reduce potential risks.

\*If there are NO RISKS associated with any part of your experiment, write that down!

**LOG ENTRY #7 – Data Table (completed by October 21st)**

1. Design a data table that you can use to record specific observations while you conduct your experiment. This may take multiple attempts.

2. Explain how and when you will collect the data. Be specific.

\*If you need classroom space and/or time, be sure to arrange this with your teacher well in advance.

**LOG ENTRY #8 – Observations (completed by November 4th):**

You should be writing observations in your lab notebook regularly as you work on your experiment. Label each new observation with the date, and include details.

Write a one-paragraph summary of your observations.

Collect data in your data table.

**LOG ENTRY #9 – Graph (completed by November 12th)**

Click on the two links below to create a graph for your science fair board. On the chartgo site you can watch a video to instruct you on designing a graph.

www.chartgo.com/

nces.ed.gov/nceskids/createagraph/

Design an appropriate graph to visually summarize the data collected during your experiment. (This may take several attempts. Do NOT tear out pages in your lab notebook!)

1. My x-axis variable (and unit of measure) is:

2. My y-axis variable (and unit of measure) is:

3. The title of my graph is:

**LOG ENTRY #10 – Results (Data Analysis) (completed by November 12th)**

1. State the results of your experiment based on the data and observations you collected.

2. Calculate an average for each test group as well as the control group (if applicable).

3. Do you think your results are reliable? Why or why not?

**LOG ENTRY #11 – Conclusion (completed by November 18th)**

1. Summarize your science fair project results in a few sentences and use this summary to support your conclusion.

2. Include key facts from your background research to help explain your results as needed.

3. State whether your results support or contradict your hypothesis.

4. Summarize and evaluate your experimental procedure, making comments about its success and effectiveness.

5. Suggest changes in the experimental procedure (or design) and/or possibilities for further study.

**LOG ENTRY #12 – Reflection (completed by November 25th)**

Write a paragraph reflecting on your experience in this year’s science fair project. As you reflect, consider these questions:

How do you feel about your project overall?

What went well? What didn’t go well?

What could have been done to improve your experience?

What are some things you will do differently next year?

ABSTRACT: An abstract must be submitted with every project board.

**Science Fair Board and completed journal DUE DECEMBER 2nd**

Classroom Oral Presentations week of December 2nd-December 6th

**Lower School Science Fair December 11th**

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