Science Project

Science projects are due on November 26, 2018. Students will create a PowerPoint which they will present on either November 26 or 27. Presenters will be chosen at random so students must be ready to present at all times. The power point must have a minimum of 9 slides containing all of the information outlined in the rubric below.

1. IDENTIFY THE TESTABLE QUESTION OR PROBLEM

   Do not select projects that involve:
   1. Human participants
   2. Vertebrate animals
   3. Potentially Hazardous Biological Agents
   4. Hazardous Chemicals, Activities & Devices

2. IDENTIFY YOUR VARIABLES

3. STATE YOUR HYPOTHESIS:

   Your hypothesis statement will include three parts:
   1. What YOU will change (test) between the groups. **The Tested (Independent) Variable**
   2. What DATA you are measuring as a result. **The Outcome (Dependent) Variable**
   3. WHY these results are expected. **What have you observed that makes you think this?**

EXAMPLE:

Hypothesis: IF I change the TEMPERATURE (Ind. Var.) of rubber bands, THEN I predict that the bands that are heated to 90°F will have the greatest ELASTICITY (Dep. Var.) because most solids expand when heated and contract when cooled.

4. MATERIALS LIST

Quantity and Units	Description
• _____	_____
• _____	_____
• _____	_____

5. PROCEDURES

   Clear procedures are important.
   -They should be SPECIFIC and thorough enough so that anyone could replicate the experiment and get similar results; nothing should be confusing if anyone tried to replicate your experiment.
   -They are listed in a "step 1", "step 2" format.

Write the experimental procedure like a step-by-step recipe for your science experiment.

The PROCEDURE I followed to test my variable is:

Step 1:_____

Step 2:_____

Step 3:_____

Step 4:_____

And so on…

6.   DATA TABLES

Data tables should include:

-AT LEAST 10 trials, REMEMBER, the more trials- the more reliable your experiment will be.

-The units of what is measured (degrees Celsius, cm.)

-What was tested (Independent Variable).

-What was measured (Dependent Variable).

-An average of all trials.

Sample Data Chart

Elmer's White School Glue

sample	Flow Distance, cm				Average Distance, cm
	test 1	test 2	test 3	test 4	
#1					
#2					
#3					
#4					

7.   GRAPHS

Graphs should include:

- Title- IMPORTANT!
- Units on both the X and Y axis if needed.
- A legend off to the side that tells what each color represents. (if needed).
- **The independent variable on the x-axis** of your graph and the **dependent variable on the y-axis**.
- The **units of measurement** (volts, centimeters, grams, etc.).
- You should do a line or bar

Average Absorbency of Diapers
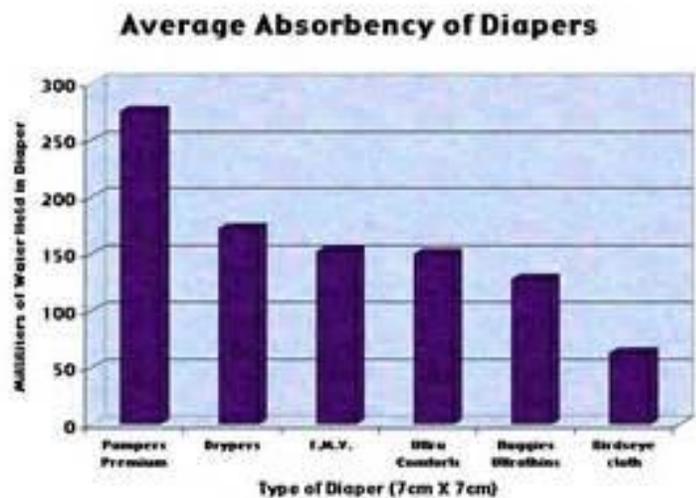
8. CONCLUSION

Your **conclusions** summarize how your results support or contradict your original hypothesis.

- Summarize your science fair project results in a few sentences and use this summary to support your conclusion.
- State whether your results support or fail to support your hypothesis.
- Summarize and evaluate your experimental procedure, making comments about its success and effectiveness.
- Suggest changes in the experimental procedure (or design) and/or possibilities for further study.

9. BIBLIOGRAPHY

List at least five (5) references (e.g. science journal articles, books, internet sites) from your research plan. Please use MLA or APA format. www.easybib.com is a great website to use to create the bibliography.

SCIENCE PROJECT GRADING RUBRIC

	Possible points	Points earned
Title Slide – to include title, your name and period	2	
TESTABLE QUESTION – please clearly state what you project is testing	3	
IDENTIFY YOUR VARIABLES – clearly identifies the testing or independent variable and the outcome or dependent variable	5	
STATE YOUR HYPOTHESIS – includes all three parts and follows the example	10	
MATERIALS LIST – list of materials used in experiment	10	
PROCEDURE – Specific, thorough, easily replicated. Listed in a "step 1", "step 2" format.	10	
DATA TABLES - 10 trials, units of what is measured in SI units, clearly labeled, an average of all trials.	15	
GRAPH - Title, units and titles for the X and Y axis, legend (if needed), variables on the corrects axis	15	
CONCLUSION - Summarizes the results, state if results support or fails to support hypothesis, summarizes and evaluate experimental procedure, includes improvements	10	
BIBLIOGRAPHY - Has five references, correct MLA/APA format.	10	
Project is grade level appropriate	10	
Total Points	100	