6TH GRADE SCIENCE PROJECT INFORMATION PACKET

PHILLIPS PREPARATORY SCHOOL

6th Grade Science Project Information **Final Project Due:_____**

Please read this entire document. It is very important that you familiarize yourself with the requirements for the science project. You are required to complete each part of the project in a VERY detailed manner.

Parents and Students,

1. The science project will be completed in steps. Each step will be a minor grade in the quarter in which it is due. Please review the timeline. We will work from August until the end of November. The final project will be due in December. This final project is worth 300 points. It is a major grade and will be counted as 3-100 point test/major grades. The final projects will be graded from January - February and recorded as part of the 3rd Quarter average.

2. The majority of the work for the science fair project will be done in class to ensure students are completing each step properly. All work should for science project should be completed in PowerPoint. This enables students to work on project from any computer, retrieve work from any computer, read and apply teacher revisions and submit work. Any and all work related to the science project, handwritten and digital, must be kept by the student until April.

3. All work will be checked, graded, and revised by the teacher. All corrections should be made to EVERY part of the project before the final submission in December.

4. The experimentation/testing portion of the project will begin in October and should be completed by the beginning of November. **ALL EXPERIMENTATION/TESTING WILL BE COMPLETED AT HOME WITH ADULT SUPERVISION. Written procedures, step-by-step, photographs, and 5 minute video.**

5. Should your child need assistance **after school** with the testing portion of the project, please contact Mrs. Prewitt, 251-401-0926. Many times, parents are not able to help with the experimentation/testing for a variety of reasons. We are happy to assist with testing **after school.** Accurate testing and experimentation is crucial to the success of your student.

6. Projects done after school will be done by the student, in a controlled environment. Students are responsible for recording all aspects of the testing. We will assist them by providing materials, they are responsible for the testing, documenting steps, and recording data. Teachers will assist with taking pictures.

7. If at any time you need assistance, do not hesitate to contact Mrs. Prewitt or Mrs. Adams.
If we do not know there is a problem or concern, we cannot address it. Communication during this time is extremely important.

C. Prewitt
Text/Call: 251-401-0926- Texting is encouraged.
Email: cprewitt@mcpss.com

J. Adams
Call: 251-221-2286
Email: jadams2@mcpss.com

Parent Signature:_____

Parent Email: Please Print:

_____

Student Signature:_____

Student Name(Print Please)_____

SCIENTIFIC METHOD

1. **Choose a topic**. Be sure it interests you. Do not pick one because you think it will be easy. Talk it over with your parents and when you have decided, inform your teacher, and do not ask to change your topic later. Your teacher MUST approve your project.

2. State your **purpose**. What is it that you want to find out by doing this project? Who will benefit from the project?

3. Research your **problem**. Look at any books/websites that might help you, make observations by simply looking at things, talk to people, and find out as much as possible about your topic. Write down facts any ideas you have and where you got them.

Keep note of all information needed for citing your 5 (five) resources. A complete web address is REQUIRED. You will need to use MLA format when citing sources.

4. Form a **hypothesis.** What do you think is going to happen? Based on research from step #3, what do you believe the results of your experiments will be? After doing the experiments, it may turn out that your guess was wrong. It is okay if this happens. There is no right or wrong outcome or answer.

5. Plan your project. How will you **test your hypothesis**? What experiments will you do? How will you measure the results? Where will you keep your information? Be sure to keep notes and write down everything you do and what happens in your logbook.

6. Collect all your **materials**. Find a place to keep things where others will not bother them. Let other family members know what you are doing so they DO NOT throw your materials away by mistake.

7. **Conduct your experiments.** Remember, the more times you do an experiment the more reliable and accurate the results will be. The metric system must be used for all measurements.

8. **Record your data**. As you do your experiments, you will want to write down the measurement unit. Organize this information in an orderly manner. Write your measurements clearly. **METRICS ONLY.**

9. Write your **results paragraph.** It includes the average for your control group and variable group, as well as the largest and smallest measurement.

10. **Draw conclusions.** What did you learn from your experiments? Did your results support your hypothesis? You made a guess about what you thought would happen. You do not lose points if your hypothesis is not supported.

11. Prepare your **data table, bar graph and line graph**. Make them large enough to see, neat, and colorful.

12. Write your **abstract.**

13. Construct your **science fair board.** Get your cardboard display board from your teacher so you can show all your work and have your hands free to point to sections when you give your presentation.

SCIENCE PROJECT LOGBOOK

1. Your logbook is a 3-Prong folder with pockets.
2. All handwritten information related to your project will be kept in your 3-Prong folder.
3. It is VERY important that you keep all of your handwritten documents.
4. The logbook is used from August-April.

SCIENCE PROJECT DISPLAY BOARD

. All parts of the show board must be typed/computer generated. NO HANDWRITING ON THE BOARD.

1. All students are required to complete a project display board. The project display board is the final step in the science project process. The display board will be assembled at home the week before the project due date.
2. Project boards and will be on sale at PPS in October. They will be distributed before Thanksgiving break.
3. All items on the project display board MUST be typed.
FONT: Times New Roman
COLOR: Black ink only
FONT SIZE: AS LARGE AS POSSIBLE
4. You will TYPE and SAVE everything on your board.

METRIC SYSTEM

1. ALL MEASUREMENTS USED IN YOUR SCIENCE PROJECTS SHOULD BE STATED USING THE **METRIC SYSTEM**: Centimeters, Meters, Liters, Grams, Seconds, Celsius, Etc.

2. The metric system should be used in EVERY part of the project from beginning to end.

3. YOU **MAY NOT** USE FEET, INCHES, GALLONS, CUPS, OUNCES, POUNDS, ETC. Points will be deducted every time the metric system is not used.

Quantity	Unit of Measure	Symbol
Length/height/distance	Meter	m
Length/height/distance	Centimeter	cm
Time	Second	s
Weight	Gram	g
Weight	Milligram	mg
Temperature	Celsius	°C
Volume (liquids)	Liter	L
Volume (liquids)	Milliliter	mL

USING FEET, INCHES, GALLONS, CUPS, MINUTES, POUNDS, ETC. WILL RESULT IN A LOSS OF POINTS. DO NOT USE THESE AS THEY ARE NOT METRICS.

SCIENCE PROJECT POWERPOINT INSTRUCTIONS

SLIDE 1- NAME, PERIOD, TITLE OF PROJECT

SLIDE 2-A. PROBLEM- THIS IS A QUESTION.

Your idea should be written in the form of a question. You will answer this question through testing/experimentation.

- *Example:* ***Which potting soil will cause plants to grow taller, Miracle Gro or Sam's Choice?***

The PROBLEM includes both the control name, the variable name, and the unit of measure. The question should state exactly what you are measuring.

SLIDE 3- B. PURPOSE- MUST BE 2 SENTENCES-

- *Example:* ***The purpose of the project is to determine* which potting soil, Miracle Gro or Sam's Choice, will cause plants to grow taller. *The project will benefit* gardeners who want taller plants.**

SLIDE 4-C. HYPOTHESIS

A hypothesis is a clear statement of what you predict will happen and **why**. A prediction about what you think the outcome of your experiment and results will be, based on research.
A clear hypothesis is testable.

- *Example:* ***Based on research, the Miracle Gro potting soil will cause plants to grow taller than the Sam's Choice potting soil because Miracle-Gro provides more nutrients for strong root and stem growth.***

Everyone will test two (2) groups, a control group and a variable group. Each group will be tested 12 times each for a total of 24 measurements.
YOU MAY NOT USE THE WORDS I, ME, MY, MINE, WE, ETC. MUST BE WRITTEN IN 3rd PERSON.

SLIDE 5-D. BIBLIOGRAPHY

Students must use at least 5 sources when researching their hypothesis.
Students must list the full website, author, and date of publication. **MLA format is required.**

SLIDE 6-E. MATERIALS LIST

Materials will be in list form and must include material, brand, size, color, and amount. You should include ALL materials that you use from beginning to end.

F. PROCEDURES- MUST BE WRITTEN AT THE TIME OF EXPERIMENTATION.

SLIDE 7- CONTROL PROCEDURES- 15 STEPS
SLIDE 8- VARIABLE PROCEDURES- 15 STEPS
THE STEPS FOR YOUR PROCEDURES SHOULD BE WRITTEN AS YOU DO YOUR TESTING, NOT THE NIGHT BEFORE THEY ARE DUE.
IT IS IMPORTANT THAT YOU WRITE DOWN THE STEPS AT THE SAME TIME YOU ARE DOING THEM, NOT WEEKS LATER.

You will be testing 2 groups, control group and variable group. You will have 12 measurements for each group. Must have written evidence of testing each group 12 times. YOU SHOULD HAVE 15 STEPS FOR THE CONTROL GROUP AND 15 STEPS FOR THE VARIABLE GROUP.

- You are required to record your experimental procedures. You will write down every step of your experiment from beginning to end. This should be a **very detailed explanation** of how you conducted your experiment, weights, measurements, etc. We should be able to duplicate your experiment exactly by reading your write up, leaving anything out would make a huge difference.
- If you build something to be used in your project then you must include this in your procedures, step-by-step- what you built and how. A handwritten copy of your procedures will be turned in. **BE SPECIFIC!!**
- These step-by-step directions should be in a numbered format (1, 2, 3). Formal language should be used.
- **All measurements should be recorded using the metric system, centimeter, millimeter, meter, gram, liter, milliliter, Celsius, seconds etc. DO NOT USE feet, inches, yards, pounds, cups, Fahrenheit.**
- **Even the simplest project should have very detailed procedures. You may not use "REPEAT STEPS 6-13" to describe what you did in either of the groups. You must write out exactly what you did for each group. Writing "REPEAT STEPS 6-13 for the variable group" is not acceptable.**

- **FAILURE TO COMPLETE A DETAILED, NUMBERED PROCEDURE WILL RESULT IN A LOSS OF ½ OF THE PROCEDURE POINTS, 65 POINTS.**

- **WHEN IN DOUBT, ASK FOR HELP!!!!!!!! CONTACT YOUR TEACHER!!!!**

SLIDE 9-G. DATA TABLE AND DATA COLLECTION:
Collecting and recording data important. Your data will be collected as you do each test and recorded on the data table. You will be given a table to use with your particular project and all you have to do is fill in the measurements. Be sure to include the measurement you are using (cm, m, mL, seconds, etc.) You will use this data later to create tables and graphs online, so they should be neat and precise.

H. VIDEO- 1 MINUTE

Video must show you explaining the testing and experimentation process. If you are not speaking and explaining, you will receive a zero.

I. PHOTOGRAPHS

1. 30 photographs are required.

- **12 Photos**- Control Tests- 1 photo per test
- **12 Photos**- Variable Tests- 1 photo per test
- **24 photos** must be of your **face and body**. If you are doing a project that requires you to sit down, then waist up photos are acceptable.
- YOU ARE TO BE IN 24 PICTURES. YOUR ENTIRE FACE SHOULD BE VISIBLE. THE BACK, OR SIDE, OF YOUR HEAD IS NOT ACCEPTABLE AND YOU WILL NOT RECEIVE CREDIT FOR PHOTOS THAT DO NOT SHOW YOUR ENTIRE FACE.
- You should be performing an action required for the experiment.
- 24 pictures of you holding a parachute or holding a tennis ball is not action. The photographs should show **the test:** aspirin dissolving, a parachute falling, a tennis ball bounce.
- **6 Photos**- Photos can be of your materials or tests. YOU **MAY NOT** BE IN THESE 6 PICTURES. These photos will go on your board.
-

- In each photograph, you must have 2 index cards that state the group and test #, and what is being tested.
- EXAMPLE:

- Control Cards: C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12
- Variable Cards: V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12
- WE WILL MAKE THESE CARDS IN CLASS.

- You MUST have actual printed photographs, pictures on a cell phone, camera, or other device are unacceptable.
- Wal-Mart can process pictures in an hour. They are about 9 cents each. Upload to www.walmart.com and place your order online. Walgreens has the same service.
- Printer problems are NOT an excuse for Not having your pictures. Don't wait until the last minute!!
- Pictures can also be printed in the library or computer lab.

J. BAR GRAPH AND LINE GRAPH

Results/Graph: Your results should consist of **two graphs**, **one bar graph and one line graph**. The results of your experiment come from your log sheet and document the measurements you obtained from your experiment. These computer-generated graphs will go your show board. Your graphs should have a title at the top**. The graphs should be labeled on both the X and Y axis. Colors on both graphs should be the same.**

X-Axis- TRIALS (ALL PROJECTS)

Y- Axis- Specific Unit of Measure (EX: Time in Seconds, Height in Centimeters)

SLIDE 10- K. RESULTS PARAGRAPH: Your results will be written on a fill-in-the-blank handout provided by your teacher. We will go over the proper way to complete this form.

EXAMPLE: RESULTS- 4 sentences

The control group, seeds planted in Miracle-Gro potting soil, measured 15 cm. on average. The tallest plant being 20 cm and the shortest plant being 10 cm. The variable group, seeds planted in Sam's Choice potting soil, measured 12 cm. on average. The tallest plant being 17 cm. and the shortest plant being 7 cm.

SLIDE 11- L. CONCLUSION PARAGRAPH: The conclusion should be based on your results. It will also be a fill-in-the-blank handout. It should state whether or not the results support the hypothesis.

EXAMPLE: CONCLUSION- 2 sentences

The results did support the hypothesis. It was predicted that the seeds planted in Miracle-Gro potting soil would grow taller than seeds planted in Sam's Choice potting soil.

SLIDE 12- M. ABSTRACT: ONE PARAGRAPH*:* The abstract is a summary of your project that MUST be displayed on your show board. It should be no more than one page in length. The abstract does not need to include specific details about your project, (numbers, weights, measurements).
It **MUST** include:

1. Purpose: restate exactly- 2 sentences
2. Hypothesis: restate exactly- 1 sentence
3. Procedure: summarize- 2 sentences
4. Results: restate exactly- 4 sentences
5. Conclusion: restate exactly- 2 sentences

Slide 13- N. ACKNOWLEDGEMENT- Do not use actual names. Instead use: parent, sister, sibling, friend, etc.

All photos taken by _____

Video recorded by: _____

IT IS EXTREMELY IMPORTANT THAT YOU STAY UP-TO-DATE WITH YOUR CHILD'S PROGRESS REGARDING THEIR SCIENCE PROJECT. IF YOU HAVE ANY QUESTIONS, PLEASE DO NOT HESITATE TO CONTACT ME.

I UNDERSTAND THAT THIS MAY BE YOUR CHILD'S FIRST SCIENCE PROJECT AND YOURS AS WELL. MAKE SURE THAT YOU AND YOUR CHILD ARE AWARE OF THE DUE DATES FOR EACH PART OF THE PROJECT. EACH PART WILL BE EXPLAINED AND EACH PART WILL BE GRADED THROUGHOUT FIRST AND SECOND QUARTER.

THE COMPLETED SHOWBOARD WILL BE TURNED IN AT THE END OF SECOND QUARTER IN DECEMBER. THE PROJECT WILL BE THREE (3) 100 POINT TEST GARDES. SHOWBOARDS AND LABELS WILL BE SOLD AT SCHOOL.

PLEASE DO NOT HESITATE TO CALL, TEXT OR EMAIL IF YOU HAVE ANY QUESTIONS AT ALL.

WE ARE ALWAYS AVAILABLE TO HELP YOU AND YOUR CHILD.

Please sign below to acknowledge that you have read and understand the instructions and what is expected.

EMAIL:
PREWITT: cprewitt@mcpss.com
ADAMS: jadams2@mcpss.com

PREWITT PHONE/TEXT: 401-0926- 7 days a week until 8PM
Texting is encouraged and preferred.

Parent Signature: _____

Parent Email: Please Print:

_____

Student Signature: _____

Student Name(Print Please) _____

SCIENCE PROJECT CONTRACT
THIS HANDOUT WILL REMAIN IN YOUR LOGBOOK/ PROJECT FOLDER.

DUE_____

- **THIS PROJECT IS A 300 POINT TEST GRADE**. It will be a 3rd Quarter grade.
- The various parts of the project will be graded as they are collected throughout the semester.
- Please refer to the **TIMELINE** to make sure your student is meeting deadlines and completing what is due. The **TIMELIN**E also has the point value of each item. Late work will receive a zero.
- Please see project **RUBRIC** for the breakdown of the project and the points associated with each part.
- If your **PHOTOGRAPHS** do not prove that you did your project you will not receive full credit for procedures. You will lose 50 points. Photographic evidence is VERY IMPORTANT.
- Students lose the most points on the **PROCEDURE** portion by not explaining EVERY SINGLE THING THEY DID. This is very important. Failure to properly document your testing in writing will result in a loss of half of the Procedure points. Please see sample for the correct way to write your procedures.
- A sample of the correct way to complete the various parts of the project have been given to students. You will notice that the materials list is very specific. The **PROCEDURES** are very specific. Even the simplest of projects should have detailed procedures.
- Any project that is **NOT APPROVED** by your child's teacher will lose 75 points. Teachers will sign off on the projects to let you know they have permission and that their project is safe.
- **LATE Projects** will lose points. No projects will be accepted in the office after the tardy bell, NO EXCEPTIONS. Projects turned in on the day after the due date, your grade will begin at 210/300 (70%), second day after the due date-60%, third day after the due date-50%, etc.
- If you are absent on the due date, your project must be submitted electronically. If you know you are going to be absent, **your project must be turned in early.**
- If you are absent on the due date, YOU MUST have a letter from your DOCTOR explaining your absence. A generic excuse with a signature is unacceptable. Your doctor must document your illness. Only serious health matters and true emergencies will be accepted as valid reasons for being absent. A parent letter is not an acceptable excuse for an illness.
- Failure to follow the instructions on the **SCIENCE PROJECT INFORMATION SHEET** will result in a loss of points.
- Please sign below to acknowledge that you have read and understand the requirements for the science project.

- EMAIL: PREWITT: cprewitt@mcpss.com PHONE/TEXT: 401-0926
- EMAIL: ADAMS: jadams2@mcpss.com PHONE: 251-221-2286- Leave message.

Parent Signature:_____

Parent Phone_____

Student Signature: _____

Student Name (Print Please)_____

Student Email:_____

SCIENCE PROJECT TIMELINE

Dates subject to change. Advanced notice will be given.

Each of these items will be typed into a PowerPoint as they graded. A PowerPoint template will be posted for students to use. Once completed, the PPT can be printed and pages placed on the final board.

Grade counted in 1st Quarter:

Due Date	**Assignment**
Aug. _____	Project Idea/Problem Handout
Sept. ____	Project Topic/Purpose Handout
Sept. ____	Research Facts and Hypothesis/ Bibliography MLA Format
Oct. 1	Begin the testing/experimentation process at home.

Grades counted in 2nd Quarter

Due Date	**Assignment**
Nov. 1	Materials, Procedures, Data Table, 30 Photos, 1 min. video
Nov. ____	Results and Conclusion Handout
Nov. ____	Abstract due
Nov. ____	PowerPoint

Grade counted in 3rd Quarter

Due Date	**Assignment**
Dec. ____	Logbook and Board- 300 points

Please sign below to acknowledge that have read the timeline and grading procedures form.

Parent Signature_____Date_____

Student Signature_____Date_____

SCIENCE PROJECT IDEA SHEET: DUE_____

Name_____Period_____

Science Project Idea Sheet- Write down 3 ideas that you feel would make a good science project. Remember, a model of a volcano is not a science project. You must be able to measure and test something: height, weight, distance, time, length. **No firearms, explosives, mold, bacteria, vertebrates, or dangerous chemicals.**

EXAMPLES:

Which type of potting soil, Miracle-Grow or Peter's, will grow the tallest plants? (height, cm)

Which brand of paper towel, Bounty or Sparkle, will hold the most water without dripping? (amount of water, mL)

YOU MAY NOT USE THE ABOVE EXAMPLES!!

State your idea in the form of a QUESTION.

1)_____

_____

2)_____

_____

3)_____

_____

Circled Project Approved (Teacher Signature) _____

Parent Signature:_____Date_____

Parent Phone:_____

Student Signature:_____Date_____

Name_____Period____
A check mark next to a project means your project ideas do not meet PPS criteria. **You will do the project chosen below.**

_____A. **Which parachute, round or rectangular, will fall the quickest?** Drop each parachute 12 times and record the time it takes for each to fall. **You will only make 2 parachutes**, one of each shape. Must use same materials for both. Both parachutes will be dropped from the same height. Record the time in seconds for all 24 trials.

_____B. **Which color candle, white or red, will burn the longest?** 12 red candles and 12 white candles. **Birthday candles** work best. Record time it takes to burn completely, from a solid to a puddle of wax. **Burn one at a time**. DO NOT LIGHT THEM ALL AT ONCE!!!!!
You must have adult supervision and **parent signature here:_____**

_____C. **Does the temperature of a tennis ball, room temperature or frozen, affect the bounce of the tennis ball?** You will only need two tennis balls. Place ball in freezer for 10 minutes after each bounce to keep the temperature consistent. **You will not bounce it.** You will **drop** it from the same height each time.

_____D. **Does the temperature of a candle, frozen or room temperature, affect how long a candle will burn?** 12 candles in the freezer and 12 candles at room temperature. **Birthday candles** work best. Record time it takes to burn **completely**, from solid to a puddle of wax. **Burn one at a time**. DO NOT LIGHT THEM ALL AT THE SAME TIME!!! Time will be recorded in seconds.
You must have adult supervision and **parent signature here:_____**

_____**E. Will aspirin dissolve faster in water or Sprite?** 12 aspirin dissolved in water, 12 aspirin dissolved in Sprite. Use the same amount of liquid for each trial. DO ONE ASPRIRIN AT A TIME!!! Record the time in seconds. The aspirin will not disappear, it will simply break down and become a pile of white material.

Parent Signature:_____Date_____

Student Signature:_____Date_____

SCIENCE PROJECT TOPIC SHEET

Name_____Period_____

Problem: **ALWAYS A QUESTION**!!!!!!!!What do you want to find out through your experimentation? Be specific!! State BOTH the CONTROL and the VARIABLE in the QUESTION.

_____

_____

_____

Control
Group_____
_____

Variable
Group_____
_____

Number of Trials or Measurements for control and variable groups- 12 each
You must use the metric system: What will you measure? CHOOSE AND HIGHLIGHT ONLY ONE.

Length in centimeters or meters (cm or m)_____

Distance in centimeters or meters (cm or m)_____

Height in centimeters or meters (cm or m)_____

Time in seconds_____

Temperature in Celsius (C◦)_____

Weight in grams (gm)_____

Volume (or liquid amounts) or milliliters (L, mL)_____

Purpose: There should be a valid reason for performing this experiment. **Must be 2 sentences.**

The purpose of the project is to determine which_____,

_____or_____,will

_____the_____.

The project will benefit_____

_____.

SAMPLE: The purpose of the project is to determine which candle, red or white, will burn the longest. The project will benefit people who use candles in a power outage.

Materials: List should include materials you think you might need. This list will change when you do your actual project. Materials may be added and deleted .(5 pts)

EXAMPLES
1. 5Aluminum Cola cans
2. Scotch tape
3. 12 Styrofoam cups
4. Potting soil
5. Uncoated aspirin- 24

1._____

2._____

3._____

4._____

5._____

6._____

7._____

8._____

9._____

10._____

11._____

RESEARCH FACTS AND HYPOTHESIS- Copy and paste all 5 web addresses into your PowerPoint.

Name_____Period_____

WEBSITE Source 1:_____

DATE:_____AUTHOR:_____

Fact 1:_____

_____

_____

Fact 2:_____

_____

_____

Fact 3:_____

_____

_____

WEBSITE Source: 2_____

DATE:_____AUTHOR:_____

Fact 1:_____

_____

_____

Fact 2:_____

_____

_____

Fact 3:_____

_____

_____

WEBSITE Source 3:_____

DATE:_____AUTHOR:_____

Fact 1:_____

_____

_____

Fact 2:_____

_____

_____

Fact 3:_____

_____

_____

WEBSITE Source 4:_____

DATE:_____AUTHOR:_____

Fact 1:_____

_____

_____

Fact 2:_____

_____

_____

Fact 3:_____

_____

_____

WEBSITE Source 5:_____

DATE:_____AUTHOR:_____

Fact 1:_____

_____

_____

Fact 2:_____

_____

_____

Fact 3:_____

_____

_____

HYPOTHESIS:

Based on research,_____

_____

_____

_____

Name_____Period_____Due Date_____

PROCEDURES RUBRIC- Handwritten or Typed. If there is an X by an item, it needs to be corrected. *THIS FORM WILL BE PRINTED FOR STUDENTS.*

_____NO DATA SHOULD BE MENTIONED IN PROCEDURES. Data goes on data table.

_____2 separate sets of steps, Control and Variable

_____At least 15 steps for EACH GROUP. 15 Control, 15 Variable COMPLETE SENTENCES!!!

_____Steps not numbered

_____Needs punctuation

_____Needs capital letters

_____Needs more details/does not fully describe testing

___ ___Didn't state that each group was tested 12 times each

_____Did not describe construction of objects used in project

_____Metric system only- no inches, feet, pounds, cups

_____Did not use exact measurements in description

_____Procedures not organized/Procedures do not flow from one step to the next

_____Confusing- Control and variable group not clear, not clear what was tested or how it was tested.

_____ Less than 15 steps per group- 70%

_____Do not use the words I or me.

Remarks:_____
_____

_____

_____

Parent
Signature_____
_____

Student
Signature_____
_____

By signing this rubric, I am acknowledging that corrections need to be made and I will make necessary changes to ensure that the procedures are done accurately and in great detail. Corrected procedures should be placed on final board. Failure to make corrections will result in a loss of points on final project.

NAME_____PERIOD_____

MATERIALS

You will have a numbered list in your PowerPoint.

ITEM	BRAND	COLOR	SIZE	AMOUNT
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

DATA TABLE- RECORD YOUR DATA ON THIS FORM IN WRITING.

PROJECT TITLE:_____

NAME:_____

TRIALS	**Control** **_____** **Measurement (ex: height in cm)** **_____**	**Variable** **_____** **Measurement (ex: height in cm)** **_____**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

Name_____Period_____

Results: You must average all of the data in each group. You know how to average!! See sample on page 2 below. *THIS FORM WILL BE PRINTED FOR STUDENTS.*

The **control group**,_____(whatever it was)

measured_____ (cm, meters, liters, milliliters, seconds**) on average.**

The (longest, tallest, longest time, whatever you measured) being_____(cm, meters,

liters, milliliters, seconds) and the (shortest, smallest least amount of) being_____

(cm, meters, liters, milliliters, seconds).

The **variable group**, _____(whatever it was),

measured_____(cm, meters, liters, milliliters, seconds**) on average.**

The (longest, tallest, longest time, whatever you measured) being, _____ (cm, meters, liters,

milliliters, seconds) and the (shortest, smallest least amount of) being_____

(cm, meters, liters, milliliters, seconds).

Conclusion: Did your results support your hypothesis? Explain why or why not!
(The results did or did not support the hypothesis because……) Two sentences total, see sample.

_____

_____

SAMPLE RESULTS

The **control group**, seeds planted in Miracle-Gro potting soil, measured 15 cm. **on average.** The tallest plant being 20 cm and the shortest plant being 10 cm. The **variable group**, seeds planted in Sam's Choice potting soil, measured 12 cm. **on average**. The tallest plant being 17 cm. and the shortest plant being 7 cm.

SAMPLE CONCLUSION- 2 sentences

The results did support the hypothesis. It was predicted that the seeds planted in Miracle-Gro potting soil would grow taller than seeds planted in Sam's Choice potting soil.

SAMPLE ABSTRACT
THIS FORM WILL BE PRINTED FOR STUDENTS.

The ABSTRACT should be ONE PARAGRAPH, NOT 5!!!

(PURPOSE) The purpose of this project is to determine which candle, red or white, will burn the longest. The project will benefit people who use candles in a power outage. (HYPOTHESIS) Based on research, the red candle will burn longer than the white candle. (PROCEDURE SUMMARY) Twelve red candles were burned and the time was recorded for each candle in seconds. Twelve white candles were burned and the time was recorded for each candle in seconds. (RESULTS PARAGRAPH) The control group, the red candles, burned 39,000 seconds on average. The longest burn time being 40,000 seconds and the shortest burn time being 38,000 seconds. The variable group, the white candles, measured 35,000 seconds on average. The longest burn time being 36,000 seconds and the shortest burn time being 34,000 seconds. (CONCLUSION PARAGRAPH) The results did support the hypothesis. The red candles burned longer than the white candles.

INCLUDED IN THE ABSTRACT:
1. Purpose- 2 sentences
2. Hypothesis- 1 sentence
3. Summary of Procedures- 2 sentences
4. Results Paragraph- 4 sentences
5. Conclusion Paragraph- 2 sentences

THE WORDS IN PARENTHESES ARE NOT TO BE INCLUDED IN THE FINAL ABSTRACT. THEY ARE THERE TO SHOW WHAT IS INCLUDED. DO NOT PUT THESE WORDS IN PARENTHESES ON YOUR ABSTRACT. YOU WILL LOSE POINTS!!!!!

ABSTRACT

The purpose of the project is to determine which candle, red or white, will burn the longest. The project will benefit people who use candles in a power outage. Based on research, the red candle will burn longer than the white candle. Twelve red candles were burned and the time was recorded for each candle in seconds. Twelve white candles were burned and the time was recorded for each candle in seconds. The control group, the red candles, burned 39,000 seconds on average. The longest burn time being 40,000 seconds and the shortest burn time being 38,000 seconds. The variable group, the white candles, measured 35,000 seconds on average. The longest burn time being 36,000 seconds and the shortest burn time being 34,000 seconds. The results did support the hypothesis. The red candles burned longer than the white candles.

ABSTRACT

Name_____Period_____

THIS IS AN EXAMPLE OF THE DETAIL THAT STUDENTS MUST RECORD THROUGHOUT THEIR SCIENCE PROJECTS.

PROBLEM

How music effects the growth of an organism (red worms)?

PURPOSE

The purpose of the project is to determine if music will affect the growth of an organism. The project will benefit farmers, fishermen or anyone that raises red worms for use in composts, as fishing bait, or for resale purposes.

HYPOTHESIS

Based on research, music will stunt the red worms' growth because constant exposure to music is very relaxing and it will cause the worms to become too relaxed and inactive.

MATERIALS

1. 24 - red worms, ordered online and shipped from Carolina Biological Supply
2. 24 - plastic Rubbermaid Take-Alongs Deep Squares containers, 1300 mL
3. 1 - Mobile Press Register newspaper shredded, 1 cm per container
4. 1 - Bag of Scott's Moisture Advantage Premium Potting Soil, 2 cm per container
5. 1-Deer Park plastic water container, 3L, for storing day old tap water
6. Tap water (day old), 5 mL per container, added every other day for period of three weeks
7. Martha White yellow corn meal, 1 mL per container, added every other day for period of three weeks
8. Pampered Chef teaspoon measurer for measuring 5 mL & 1 mL measurements
9. 1- Oven Basics glass measuring cup, 250 mL
10. 1- Flexi ruler, 30 cm
11. 1 - Black Sharpie
12. 24 - Post-It Notes, yellow & pink, 7 cm x 7 cm
13. 1 - Panasonic Lumix 16x optical zoom camera
14. 2 - sheets of copy paper, 21 cm x 27.5 cm
15. 1 - Folding table, 176 cm x 75 cm
16. 1 - Card table, 76 cm x 76 cm
17. Apple IPOD 4G

PROCEDURE

1. Place order for red worms online from Carolina Biological Supply. These can be shipped via UPS or FedEx for next day or 2nd day delivery. (Note: Worms cannot be exposed to extreme weather conditions, such as extreme cold or heat. You will need to be home when they are delivered!)
2. Fill plastic Deer Park water container with tap water ***1 day before starting experiment***.
3. Set up table for work area.
4. Gather all materials.

CONTROL GROUP- NO MUSIC

5. Take 1 sheet of copy paper and using a Sharpie, title it "Control Group- No Music."
6. Take 12 yellow 7x7cm Post-it notes and label Post-it notes C1- C12, for the control group.
7. Shred old newspaper into thin strips and dampen with water.
8. Measure and add 1 cm of shredded newspaper to each of the 12 Rubbermaid containers labeled C1-C12.
9. Measure and add 2 cm of Scott's Premium Potting Soil to each of the 24 Rubbermaid containers labeled C1-C12.
10. Measure and add 5 mL of day-old tap water to each of the 24 Rubbermaid containers.
11. Place one worm in each of the plastic containers labeled C1-C12
12. Use the Flexi ruler to measure each of the 12 control worms, one at a time, in centimeters.
13. Record their individual measurements on the appropriately named yellow Post-It Notes.
14. Set up the smaller table in bedroom and move the 12 containers from the control group to a spare bedroom and leave alone, with no music.
15. Every other day, all 12 worms will need to be watered and fed. Do this by adding 5 mL of day-old tap water and 1 mL of Martha White yellow corn meal to each container.
16. At the end of the three-week testing period, measure each of the 12 worms from the control group again and record their ending measurements on the original 7x7cm yellow Post-It note that shows their beginning measurement.
17. Record the amount of growth for the control group on the data table

VARIABLE GROUP- MUSIC

18. Take 1 sheet of copy paper and using a Sharpie, title it "Variable Group- Music."
19. Take 12 pink 7x7cm Post-it notes and label Post-it notes V1- V12, for the variable group.
20. Shred old newspaper into thin strips and dampen with water.
21. Measure and add 1 cm of shredded newspaper to each of the 12 Rubbermaid containers labeled V1-V12.
22. Measure and add 2 cm of Scott's Premium Potting Soil to each of the 24 Rubbermaid containers labeled V1-V12.
23. Measure and add 5 mL of day-old tap water to each of the 24 Rubbermaid containers.
24. Place one worm in each of the plastic containers labeled V1-V12.
25. Use the Flexi ruler to measure each of the 12 control worms, one at a time, in centimeters.
26. Record their individual measurements on the appropriately named pink 7x7 Post-It Notes.

27. Set up table in laundry room with 12 containers.
28. Set up the IPOD on the charger, turn on and begin to play music from the selected play list. IPOD should play music nonstop.
29. Every other day, all 12 worms will need to be watered and fed. Do this by adding 5mL of day-old tap water and 1 mL of Martha White yellow corn meal to each container.
30. At the end of the three-week testing period, measure each of the 12 worms from the variable group again and record their ending measurements on the original 7x7cm pink Post-It note that shows their beginning measurement.
31. Record the amount of growth for the control group on your data table

RESULTS

The Control Group, red worms, grew on average 0.71 cm. The longest measured 7.0 cm and the shortest measured 5.0 cm. The Variable Group, red worms, grew 1.83 cm on average. The longest being 7.5 cm and the shortest being 5.0 cm.

CONCLUSION

The results did not support the hypothesis. Based on research, the variable group's growth would be stunted by the music, but instead it made them grow on average 1.1 cm longer than the control group.

ABSTRACT (This is copied exactly from above, with a 1 or 2 sentence summary of the procedure)

The purpose of the project is to determine if music will affect the growth of an organism. The project will benefit farmers, fishermen or anyone that raises red worms for use in composts, as fishing bait, or for resale purposes. Based on research, music will stunt the red worms' growth because constant exposure to music is very relaxing, and it will cause the worms to become too relaxed and inactive. 12 red worms were exposed to music and 12 red worms to silence to see if the music affected the growth of the worms. The Control Group, red worms, grew on average 0.71 cm. The longest measured 7.0 cm and the shortest measured 5.0 cm. The Variable Group, red worms, grew 1.83 cm on average. The longest one being 7.5 cm and the shortest being 5.0 cm. The results did not support the hypothesis. Based on research, the variable group's growth would be stunted by the music, but instead it made them grow on average 1.1 cm longer than the control group.

ACKNOWLEDGEMENT:

All photos taken by mother.
Video recorded by brother.