2Q STEM RESEARCH PROJECT

YOU ARE THE SCIENTIST!
YOU ARE THE ENGINEER!

This project is designed to encapsulate the knowledge and the ability to formulate a testable research question, design and execute an experiment with quantifiable results, scientifically compare the experimental results with a control method, and discuss their findings with the rest of the class via PowerPoint presentation. Although this project divulges each student's knowledge regarding science and engineering, it also teaches them other skills such as technological probe ware, imbedding homemade video into PowerPoint, mathematics, and time management. This research will count for over half of the total points for the 2nd Quarter, and therefore often dictates the pulse for the remainder of the quarter; if the student does excellent it is an easy A or B for the quarter…conversely, if the student does not put effort into the project, it can mean failing the quarter and possibly the semester (depending on their effort).

Please fill out the following information below. You may use your textbooks, notes, smart phones, computers, or Chrome Books from the library (I have checked them out) to assist you with ideas.

NAME: _____

SCIENCE DISCIPLINE: Integrated Science Biology Chemistry Physics
(Circle One) (physics or chemistry)

Describe the area of interest in which you would like to do your research:
_____
_____
_____

List the factors (independent or manipulated variable) you can control which could affect the outcome (dependent or responding variable) of your research:

Independent or Manipulated Variable

1. _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____

What noticeable and quantifiably measurable characteristics (dependent or responding variable) would possibly be affected by the dependent / responding variable?

Dependent or Responding Variable

1. _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____

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Using the independent and dependent variables from the front of this sheet, form some "Cause" and "Effect" relationships:

Cause 1. _____ Effect 1. _____

Cause 2. _____ Effect 2. _____

Cause 3. _____ Effect 3. _____

Using the "Causes" and "Effects" above, create possible science project titles / topics:

1. _____

2. _____

3. _____

Using the science project titles / topics you created above, create possible hypotheses in an "IF" "THEN" "BECAUSE" format using the independent / manipulated variable first, then the dependent / responding variable second, followed by why you think this would or would not be correct:

_____
_____
_____

_____
_____
_____

_____
_____
_____