

7th Grade STEM Summer Science Project 2023
Summer Preparatory Life Science Project (6th grade into 7th grade year)

DUE the First week of school to your Science Teacher

STUDENT NAME: _____

Objective: To gain knowledge about the experimental design process.

- Design a life science experiment. Include a problem, hypothesis, independent variable, dependent variable, control, and experimental procedure
- Conduct the experiment and record data and observations. Include data, pictures, data analysis, conclusion and cite any sources
- Present your project in poster form and share with your science class. (See below rubric for sample poster presentation)
- Examples experiments
 - How plants growth in various amounts of sunlight
 - How exercise impacts breathing/respiration
 - How living things are impacted by pollution

Project Rubric Checklist:

- ___ 30 pts Creativity
 - ___ 15 pts Project demonstrates innovation and creativity throughout poster
 - ___ 15 pts Project demonstrates innovation and creativity throughout presentation

- ___ 30 pts Poster
 - ___ 10 pts Poster includes all parts of the experimental design process
 - ___ 10 pts Poster is laid out in the proper format (see below)
 - ___ 10 pts Poster includes pictures and color

- ___ 40 pts Information
 - ___ 10 pts Project is scientifically accurate
 - ___ 10 pts Project uses science vocabulary
 - ___ 10 pts Project cites sources accurately (MLA format)
 - ___ 10 pts Experimental Design Process is organized and well thought out

Total Points ___ / 100 pts total

Sample Poster SetUp:

Question/Problem	Title of Project	Data Analysis
Materials	Hypothesis	Conclusion
Procedures	Design Set-Up (variables, control)	Sources
Pictures	Data/Results	Pictures

Be creative and have fun with this assignment. As long as you can connect your activity to a life science concept you will have met the requirements for the project! If you have any questions during the summer you can email Mrs. Hughes khughes@kent.k12.md.us

***Support can be provided for these projects on Wednesday, July 12 and/or Monday, July 17 (2023) at KCMS from 9:30am- 1:00pm. Ms. Markosian will be at KCMS willing to help work on projects.

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Background Questions:

Part 1 - Background on How to Think Like a Scientist.

1. Complete the following observational sequence for one of the listed scenarios: What did you Notice? What do you Wonder? What can you Assume? What can you Test?

SCENARIO #1: A family started a garden in their backyard this summer. They decided to plant tomatoes, green peppers, cucumbers, squash, and zucchini as well as various marigolds around the vegetable plants. The garden bed was in full sunlight and was watered *almost* every morning and evening. The zucchini started producing vegetables first. Then the cucumbers began to grow as well. The squash plant died shortly after planting. The tomatoes produced fruit, but at the very end of the summer. Finally the green pepper plant grew, but never produced any vegetables.

SCENARIO #2: Timmy went for a run before he went to school. After his two mile jog he was sweating and out of breath. He then cooled down by walking another mile back to his house. By the time he got back to his house, his breathing was even, his heart was no longer thumping noticeably, and his sweat began to stop.

SCENARIO #3: Jada was worried about her pet parakeet, Crackers. A parakeet is a medium sized bird with a short powerful curved beak. Crackers was not eating the food that Jada was putting out for her. Jada decided to try some new food for Crackers. On the first day Jada gave Crackers bird seed, Crackers ate half a bowl. One the second day Jada gave Crackers berries and leaves, Crackers only ate a few berries. Finally on the third day Jada selected a choice of breadcrumbs and M&M's and Crackers only ate the breadcrumbs.

1. What do you Notice? (any observations, statements, not questions or assumptions)

2. What do you Wonder? (Now you ask questions about the scenario, things you want to know)

3. What do you Assume? (Educational guesses about the scenario, things not explicitly told to you.)

4. What can you Test? (This is where you will begin to design and conduct an experiment!)

5. Define the following terms: hypothesis, independent variable, dependent variable, control