MST AP Biology: Experimental Design Introduction

Speedy Sprouts

Experimental design and analysis are huge parts of AP Biology. To give you an introduction of this, you are going to design and perform your own experiment this summer and watch *speedy sprouts* grow. These plants are called "Wisconsin Fast Plants." They have been artificially selected by humans to use in plant research.

When you see Ms. Missig to pick up the AP Biology summer work, pick out 1 seed packet full of 2 seeds. These are the seeds you will plant and try to grow this summer! You will also be provided with compostable pots and potting soil. You will eventually share your results during the 1st week of school.

What do you need to do?

- Design your own experiment with the seeds. You need to make sure you have a control group and experimental group (research these if you forget what they mean).
- Record the materials you are using for this experiment (ex. type of dirt, type of water used, etc.).
- Plant each type of seed inside with a 24 hour light source. Record how often you plan to water the seeds and with how much water. You may want to do research on how much water these seeds need.
- Every day for a minimum of 2 weeks, record data on your seed growth. I suggest measuring the sprouts in centimeters. Be sure to also record the conditions inside your house. If you record data for 3 weeks or more, there will be a bonus! The more data, the better! Take a photo of your plants as least 1 time per week. You can use these pictures when you explain your results.
- At the end of your data collection, your plants should flower. At this time, you can harvest them or simply see how long you can keep them alive! If they are still alive in September, bring them into class!

{I realize that a lot of people travel over the summer. Do the best you can with planting these seeds during a chunk of time that you are home…or if you are up north for a month, maybe plant the seeds up there! If you leave for vacation, try to get someone to water your plants so your hard work doesn't go to waste. If you have any major concerns with this, please reach out to Ms. Missig on Remind.}

How will you present this all in class?

- In a Google Slides presentation, explain how you set up/performed your experiment. Information from all the bullet points from the previous page should be included in your presentation.
- Do some research on Wisconsin Fast Plants and explain what they are, how they were developed, what they are used for, etc. The more detail, the better! Be sure to cite your sources.
- Create a properly labeled and scaled graph to show the height of your plants over time. This graph can be hand drawn or computer generated.
- Include pictures of the growth of your plants over time.
- Include a final picture of your plants. Did they flower? If so, how long did they take?
- Discuss your results. Why do you think you saw the results that you did? Do some research to support what your findings were. Be sure to cite your sources.
- Answer these reflection questions: What did you learn from this project? What surprised you the most? What would you do differently if you had to do it again?

Since this is your first lab, it will count as a lab grade, which is the same as a quiz grade.