

AP Biology Summer Assignment

Sherman ISD 2021-2022

Welcome to AP Biology! This course is designed to be the equivalent of a two-semester introductory biology course usually taken in the first year of college. It will be a challenging yet rewarding experience. This summer assignment is designed to help you become familiar with major themes that persist throughout all AP Biology topics and material.

The 4 Big Ideas of AP Biology

Big Idea 1: The process of evolution drives the diversity and unity of life.

Big Idea 2: Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis.

Big Idea 3: Living systems store, retrieve, transmit and respond to information essential to life processes.

Big Idea 4: Biological systems interact, and these systems and their interactions possess complex properties.

On the pages that follow, you'll find detailed instructions of the two assignments that comprise your summer work for AP Biology. The first assignment is related to becoming acquainted the Science Practices that you'll be learning about this year in AP Biology. The second assignment deals with experimental design.

Both assignments will be due the first week of school!!

Contact info for Mrs. Green:

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Please do not hesitate to ask questions. I am here to help.

Assignment #1 – Video Notes – due 1st Week of AP Biology

Watch the videos listed below and take **hand-written** notes on each of them. The note should be your **original work**. EACH note sheet will be scored 0 to 5 based on completeness and thoroughness as shown in the rubric below. **Note pages will not** be accepted late nor will they be accepted typed.

#	Video Content	Links
1	The Natural of Science	https://youtu.be/77TFiYWPxoQ
2	The Scientific Method	https://youtu.be/SMGRe824kak
3	CER (Claim- Evidence-Reasoning)	https://youtu.be/5KKsLuRPsvU
4	AP Biology Science Practice 1 Model and Representations	https://youtu.be/v5Nemz_cVew
5	AP Biology Science Practice 2 Using Mathematics Appropriately	https://youtu.be/jgqYISKoXak
6	AP Biology Science Practice 3 Formulate Questions	https://youtu.be/2zB272Ak63A
7	AP Biology Science Practice 4 Data Collection Strategies	https://youtu.be/AzTXnne40wU
8	AP Biology Science Practice 5 Analyze Data and Evaluate Evidence	https://youtu.be/0JqukouOtZA
9	AP Biology Science Practice 6 Scientific Explanations and Theories	https://youtu.be/3gK1xWNM7kk
10	AP Biology Science Practice 7 Connecting Knowledge	https://youtu.be/7l4bcs49JP8

0 No Credit	2 Below expectations	3-4 Complete	5 Exceeds expectations
No notes OR copied from a peer.	Several criteria are missing from entry	All criteria are met, but there's room for improvement within criteria OR one criterion is missing from entry.	All criteria listed below are met or have been exceeded for each entry.

What does work that "exceeds expectations" have?

- Each video's notes are on a different page.
- The video's title is written as it appears in the video on the top line of the paper.
- The notes are legibly written.
- Highlighting or colors are used to emphasize key points, new vocabulary, and/or important concepts.
- Examples are documented in some way when given in the video.
- Pictures, charts, or graphs are used to display details provided in the video.
- A summary of the video content is provided at the end of the notes. Please emphasize the summary in some way (title it, star it, highlight it, etc.)

Notes are to be *original work* and are not to be copied from a peer – these serve as a log of what you have learned from the video. Copying them from a peer and not watching the video does you no good. You will receive zero credit if you are found submitting work that is too closely aligned with a classmate's work.

AP Biology Summer Assignment Part 2- due 1st week of AP Biology

Task: You will design an experiment to test one of these claims. You are assigned a claim based on the first initial of your FIRST NAME.

First Initial of your FIRST Name	Assigned Claim
A	An apple a day keeps the doctor away.
B-C	Eating chocolate causes zits.
D-E	Swimming immediately after eating will give you cramps.
F-G	Eating carrots will improve eyesight.
H-J	Going outside with wet hair will make you catch a cold
K-L	Shaving makes hair grow back faster.
M	Drinking coffee will stunt a child's growth.
N-O	Not eating when you have a fever will make you get better faster.
P-R	Break a mirror and you will have seven years of bad luck.
S	Blowing out all the candles on your birthday cake in one breath will cause you to get your birthday wish.
T-V	The full moon makes people restless.
W-Z	Reading in dim light damages a person's eyes.

Assignment Requirements:

Must be a Google or Word doc. Due the 1st week of school. Spelling counts!

- 1) State the Problem
- 2) State your Hypothesis **in If, then format...**
- 3) State the Independent Variable and the Dependent Variable
- 4) Detailed Step-by-step Procedure in a numbered list with complete sentences (not a paragraph)
- 5) Data table **(With no data – just headings of what data would go into it)** (NOT A GRAPH)
- 6) Diagram that details the difference between the control/ experimental groups (See diagram below for example) Be sure to label the control group and the experimental group.

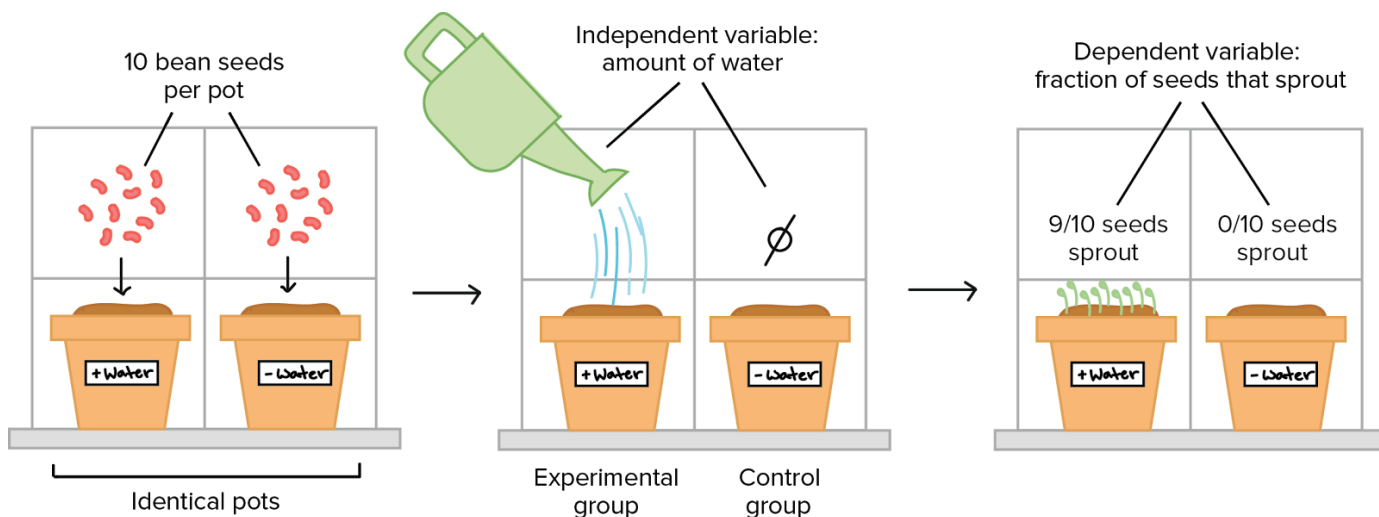
References

Video explaining Independent variable versus Dependent variable: <https://youtu.be/iaewZmc4TYQ>

Video explaining Experimental group versus Control group: <https://youtu.be/aLesk8fujH8>

Steps of the scientific method, hypotheses, and data tables: https://youtu.be/b_pMPtebR84

EX Diagram of control and experimental groups:



PreAP Biology Summer Work Part 2 Rubric

Problem/Question	6 Matches the assigned claim. Makes sense.			2 Made up own problem or question	0 Problem or question not stated
Hypothesis	11 Testable! Includes reference to both IV and DV. Specific prediction. In If, then format.	8 Specific prediction but doesn't include either the IV or DV. In If, then format.	5 Not in If, then format or no specific prediction given.	2 Not testable	0 No hypothesis
Independent and Dependent Variable	17 Correctly identifies both the Independent and Dependent Variables		8 Only correctly identifies one of the IV or DV		0 No IV and no DV identified
Procedure	26 Numbered list with complete sentences. Anyone can follow the directions. Materials listed specifically with amounts and brands (if applicable) Actually tests the hypothesis.	17 Numbered list with complete sentences. Directions are difficult to follow - missing steps or some steps unclear. Materials listed less specifically. Actually tests the hypothesis.	12 Not a list or not complete sentences. Directions cannot be followed. Materials might not be listed. Doesn't test the hypothesis.	2 Totally off topic	0 No procedure
Data Table	19 Headings match up with data collected in procedure. Makes sense with IV and DV	10 Lacking one of the necessary headings on the data table	5 Has headings but missing either the IV or the DV	2 Made graph instead	0 No data table
Diagram	13 Clear and has to do with procedure. Labeled.	6 Semi-difficult to understand or not completely labeled.		2 Cannot read it or doesn't make sense	0 No diagram
Overall:					
Spelling	(8 pts) -1 pt for each error (Up to -8)				