Assignment Summary

For this assignment, you will build your Lab Portfolio. You will compile your lab reports in a folder (electronic or physical). You will also reflect on the Big Ideas you covered and the Science Practices you applied while conducting your laboratory investigations. You will then complete Laboratory Investigation Reflection worksheets. The worksheets will be compiled with your Lab Reports.

Background Information

The laboratory investigations cover the 4 Big Ideas and the 6 Science Practices described in the College Board's AP Biology Course Framework. The description of the ideas and practices are provided below. Use this information to help you reflect on your laboratory investigations.

Big Ideas

Big Idea 1: Evolution

- The process of evolution drives the diversity and unity of life.

Big Idea 2: Energetics

- Biological systems use energy and molecular building blocks to grow, reproduce, and maintain dynamic homeostasis.

Big Idea 3: Information Storage and Transmission

- Living systems store, retrieve, transmit, and respond to information essential to life processes.

Big Idea 4: Systems Interactions

- Biological systems interact, and these systems and their interactions exhibit complex properties.

Science Practices

Science Practice 1: Concept Evaluation

- You are able to explain biological concepts, processes, and models presented in written format.

Science Practice 2: Visual Representations

- You are able to analyze visual representations of biological concepts and processes.

Science Practice 3: Questions and Methods

- You are able to determine scientific questions and methods.

Science Practice 4: Representing and Describing Data

- You are able to represent and describe data.

Science Practice 5: Statistical Tests and Data Analysis

- You are able to perform statistical tests and mathematical calculations to analyze and interpret data.

Science Practice 6: Argumentation

- You are able to develop and justify scientific arguments using evidence.

Materials

- Lab reports
- Folder (electronic or physical)

Assignment Instructions

For this project, you are expected to submit:

1. A folder (electronic or physical) that contains your Lab Portfolio

Step 1: Prepare for the project.

a) Read through the guide before you begin so you know the expectations for this project.
b) If there is anything that is not clear to you, be sure to ask your teacher.

Step 2: Organize your Lab Portfolio folder.

a) If you are building an electronic Lab Portfolio, follow the steps below to organize your Lab Portfolio.

i. Create a Lab Portfolio folder on your desktop by right-clicking in the space where you want to add the new folder. Select New and then select Folder. Name the folder in this manner: First Name_Last Name_Lab Portfolio.

ii. Click on your Lab Portfolio folder and add 10 new folders. Name the folders in this manner: Lab #_Title of the Laboratory Investigation. Use the information below to name your folders.

- Lab 1_Cell Size
- Lab 2_Tonicity and Osmoregulation
- Lab 3_Enzyme Activity
- Lab 4_Photosynthesis
- Lab 5_Mitosis and Meiosis
- Lab 6_Biotechnology
- Lab 7_Artificial Selection
- Lab 8_Hardy-Weinberg Equilibrium
- Lab 9_Response to the Environment
- Lab 10_Energy Flow through Ecosystems

iii. After completing a laboratory investigation, add your lab report and this document with an appropriately completed Laboratory Investigation Reflection worksheet to the appropriate lab folder.

b) If you are building a physical Lab Portfolio folder, follow the steps below to organize it.

i. Compile your lab reports in order.

iv. After completing a laboratory investigation, add your lab report and the appropriate and completed Laboratory Investigation Reflection worksheet.

Step 3: Reflect on the Big Idea covered in the laboratory investigations.

a) Write the name of the laboratory investigation in the appropriate space in the Laboratory Investigation Reflection section of this document.

b) Go over the concepts you applied and the results you obtained from your laboratory investigation.

c) Identify which Big Idea was covered in the laboratory investigation. List the Big Idea/s covered in the appropriate space in the Laboratory Investigation Reflection section of this document.

d) Use the biological concepts, data, and evidence from your laboratory investigation to write a paragraph explaining how your laboratory investigation is related to the Big Idea.

Step 4: Reflect on how you practiced science during the laboratory investigations.

a) Think about how you conducted the laboratory investigation.

e) List the science practices you applied in the appropriate space in the Laboratory Investigation Reflection section of this document.

b) Write a paragraph explaining how you applied the science practice/s in your list.

Step 5: Evaluate your project using this checklist.

If you can check each box below, you are ready to submit your project.

- ☐ Did you prepare and organize your Lab Portfolio folder as outlined in Step 2?
- ☐ After each laboratory investigation, did you complete a Laboratory Investigation Reflection worksheet?
    - Did you write the title of your laboratory investigation?
    - Did you go over the concepts you applied and the results you obtained from your laboratory investigation?
    - Did you identify and list the Big Ideas covered in the laboratory investigation?
    - Did you use biological concepts, data, and evidence from your laboratory investigation to write a paragraph explaining how your laboratory investigation is related to the Big Idea/s you listed?
    - Did you identify and list the Science Practice/s you applied during the laboratory investigation?
- ☐ Did you compile your Laboratory Investigation Reflection document with your Lab Report?

Step 6: Revise and submit your project.

a) If you were unable to check off all of the requirements on the checklist, go back and make sure that your project is complete. Save your project before submitting it.

b) Submit your Lab Portfolio through the virtual classroom or to your teacher after you conduct your final lab activity. Be sure that your name is on it.

Laboratory Investigation Reflection

Lab Title:

Big Idea/s Covered:

Big Idea/s Reflection Paragraph:

Science Practice/s Applied:

Science Practice/s Reflection Paragraph: