

IB Biology 2 Summer Assignment

During the summer, I would like you to seriously think about the topic of your Internal Assessment project. Remember, the project should be related to a topic we discussed in class to some extent. If there is a particular device or instrument that you may need, please contact me and we will see if it is something we have or can easily acquire. It is your job to take into consideration material limitations and rules governed by the IB program. For your summer assignment, please come up with three IA ideas and fill out an 'IA Template' for each of them. This will help you to think of many of the things that you might need for a particular experiment. When you are done, put a star on the idea that you would like to do the most and think could reasonably be done. You will submit all 3 ideas to me in the Fall.

IA BIO Design Template

1. Name

Class

Date

Title of Experiment

2. **Aim** (a brief statement, 1-2 sentences, statement of the purpose of experiment, in own words):

3. **Safety Precautions** (Record any relevant safety information):

4. **Introduction**

A) Focused Research Question- BE DETAILED AND SPECIFIC!!

How does _____ affect _____ ?

(independent variable with units) (dependent variables with units and description of sample group)

OR

Is (are) _____ as effective as _____ ?

B) Background

What do I already know about the topic of the experiment (any prior knowledge and or reference to text or other resource material)?

C) Hypothesis

Make a prediction on what you expect the outcome of the experiment will be.

Explain why you expect this result?

5. Identifying Variables

A) Independent Variable (this is the variable you change or manipulate)

1. State your independent variable (must be quantitative).

2. What are the units of measure for your independent variable?

3. What are the settings/treatments you are using for this experiment should have at least 4 settings?

4. Why/How did you select these settings?

5. How will you obtain/measure this?

B) Dependent Variable (this is the resulting outcome of your settings or what you measure at the end of the experiment)

1. State your dependent variable(must be quantitative).

2. What are the units of measure for your dependent variable?

3. How will you obtain the measurements for this variable?

C) Fixed/controlled Variables- Identify a minimum of 4 (these are the factors that could impact your results if not kept the same throughout the experiment)

1. State your Fixed Variables with units

a. Variable 1

b. Variable 2

c. Variable 3

d. Variable 4

2. Explain why it is important to keep each of the identified fixed variable the same

a. Variable 1

b. Variable 2

c. Variable 3

d. Variable 4

3. How did you ensure that the variables were the same throughout the testing?

a. Variable 1

b. Variable 2

c. Variable 3

d. Variable 4

6. Procedure

A) List Necessary Equipment

B) Illustration of Experiment Layout (if necessary)

C) Step by Step Method Used (written in third person and could be repeated by another person)

D) Describe subject/sample group used, should be 3-5 samples per treatment/setting.

E) Additional Questions in regards to your procedure

1. Explain how your fixed variables were checked to ensure that each remained constant throughout the experiment.

2. How did you change the independent variable and ensured that it was kept constant on your predetermined setting?

3. How will your dependent variable be measured and recorded and what units will be used?

4. Are both your independent variable and dependent variable quantitative?

5. How many trials are you running? (minimum of five at each predetermined independent variable setting)

6. How was your sample group chosen?

7. What is your comparison group/controlled group?