Name: _____

Class: _____

Due Date: _____

Internal Assessment HW #1

1. Watch and take notes on these videos:

How to score level 7 in Physics IA in 2 hours?
HKEXCEL Education Centre
https://www.youtube.com/watch?v=7_8uUIRPK_g

IB Physics: Internal Assessment
Chris Doner
https://www.youtube.com/watch?v=hYYgrEz0Jy4

How to score a 7 for IB Physics IA? ★ A Concise IB Tutorial ★
IB Made Easy
https://www.youtube.com/watch?v=Wp8_p6skLfw

How to Write a Paper in a Weekend (By Prof. Pete Carr).720p
Surviving and Thriving in Higher Education
https://www.youtube.com/watch?v=UY7sVKJPTMA

2. What do you want to investigate? Why is this of interest to you? Why do you want to do this?

3. How does it relate to what is taught in this class? Which chapter and/or section from the textbook is your IA from?

4. What is your research question?

5. Dependent variable

6. Independent variable

7. Control variables

8. List at least one source which will provide you information for your research project. List in MLA format. An MLA style guide can be found here: https://owl.english.purdue.edu/owl/resource/747/01/

9. List all the equipment/materials needed for your investigation:

10. What information are you going to collect? What will be on the horizontal and vertical axes of your table(s) in the raw data section? Draw and label a table:

11. What will you label as your horizontal and vertical axes of your tables and graphs in your processed data section? Draw and label some tables and graphs:

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Internal Assessment HW #2

- Step 1: Make sure Internal Assessment HW #1 is completed and approved by your teacher.
- Step 2: Look at other IA's which are available online.
- Step 3: Before you begin the experiment complete all the sections until the "results/raw data" section.
- Step 4: Conduct your lab and get some data!
- Step 5: After you complete your lab and get some data then continue with the "results/raw data" section and complete your IA.
- Step 6: Go over the mark scheme and make sure you are receiving full marks on all the sections.
- Step 7: Get your IA edited by your peers again and again. Look at other IA's which are available online.

Suggestions:

- Make sure your IA looks professional and neat!
- Read IA's of other students to get an idea of how your IA should look like and read like!
- Have more than one person read and critique your IA!
- Read the IA's of your friends and classmates and give them suggestions!
- Save and upload your IA in **pdf format** so all of the equations show up because sometimes equations do not show up correctly when another version of Microsoft Word or text document program opens your file.

↓↓↓↓Begin your IA on the next page ↓↓↓↓

Title of your Physics IA (Your Research Question)

Candidate Code: XXX###
Physics Internal Assessment

Introduction

Why are you choosing this topic as your IA? Have a catchy introduction paragraph here! Mention personal significance, interest, or curiosity.

Have physics background information here! If you have equations then define each variable. Cite all physics information, like equations and definitions, in the bibliography section!

Unless you come up with the equation yourself you must cite all equations! Define the meaning of each variable. If you do not cite the equations or the meaning of each variable then Turnitin will consider this as plagiarism!

Mention the figures, tables, and graphs in your IA in the text **before** you show them. For example "Figure 1 below show the materials used in the lab."

Write you lab/IA report as if the reader has no idea what you are writing about and everything is new to her/him. Be very detailed in the physics and all your steps!

Research Question

This section should have only one sentence: the research question.

Hypothesis

This section should be short. It can have only one sentence.
Example: I am predicting that as the temperature increases the resistance will increase to the power of 3.

Variables

Typically this section should have three paragraphs with one sentence for each paragraph:
The independent variable(s) in this investigation is/are the….
The dependent variable(s) in this investigation is/are the….
The controlled variable(s) in this investigation is/are the….

OR

Experiment 1: Constant X
The independent variable(s) in this investigation is/are the….
The dependent variable(s) in this investigation is/are the….
The controlled variable(s) in this investigation is/are the….
Experiment 2: Constant Y
The independent variable(s) in this investigation is/are the….
The dependent variable(s) in this investigation is/are the….
The controlled variable(s) in this investigation is/are the….
Experiment 3: Constant Z
The independent variable(s) in this investigation is/are the….
The dependent variable(s) in this investigation is/are the….
The controlled variable(s) in this investigation is/are the….

Materials

The following materials will be used to conduct this IA:

- XXXXXX (**mention the uncertainties of your measuring instruments)** (See Figure 2)
- XXXXXX (See Figure 3)
- XXXXXX (See Figure 4)
- XXXXXX

The materials used in this lab are shown in Figure # below.
You **MUST** have a figure or many figures in this section of all the materials used in the lab.

Procedure to Collecting Data

The following steps will be taken to conduct this IA:
1. bla
2. bla
3. bla

The setup of the experiment is shown in Figure # below.
Have a photo of yourself in the IA. For example have a photo of the lab setup with you in it pretending to conduct the lab. Or you can have a photo of yourself with the lab materials.
You **MUST** have a figure of the lab setup in this section.
The setup of this lab is shown in Figure # below.

Ethical and Safety Concerns

If there are no ethical or safety issues then type something like "There were no issues with regards to ethics or safety when conducting this IA" in this section.

Results/Raw Data

There should be at least one table in this section. Include units! Include the uncertainty! Mention the table and describe what information is in the table before you put the table in the IA.
Table # below shows the XXXXXX. Column # shows the XXXXXX. Column # shows the XXXX. Row # tells us the XXXXXX. Row # tells us the XXXXXX.

Height (m) (±0.01 m)	Time (s) (±0.5 s)				
	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5
1					
2					
3					
4					
5					

Table 1

Data Processing

This is where you calculate averages or take the information from your results (or raw data) section above and put them into equations.
There should be at least one table in this section. Include units! Include the uncertainty! Mention the table and describe what information is in the table before you put the table in the IA.
Have at least one graph in this section. Label the x and y axis of the graph. **Have a best fit line/curve! Microsoft Excel can do this!** Include units!!!!
Table # below shows the XXXXXX.
Graph # below shows the XXXXXX.

Conclusion

What can you conclude from the lab? What did you learn?
Use the terms **directly proportional and/or inversely proportional** in this section!
Use the terms **uncertainty** and **standard deviation**!
Example: In conclusion if the mass of the object increases then it takes a greater force to move the object. This means that the force of push is directly proportional to the mass of the object.
Example: In conclusion the acceleration due to gravity near the surface of the Earth is 8 m/s2.
Compare your numbers/results to the work of another paper. For example if you are determining the specific latent heat of fusion of chocolate then compare your results/numbers to those from another book or research paper or article.

Errors and Limitations of the Investigation

Mention the terms **random error** and **systematic error**!
Mention the terms **high/low accuracy** and **high/low precision**!
Example: I did not have accurate materials to measure the time because a stopwatch is not so accurate. This is a random error.
Example: The force of air friction was too large. This is a systematic error.

Suggested Methods for Improvement

Example: Use a light gate to measure the time.
Example: Conduct the lab in a closed room to decrease the amount of air friction.

Bibliography

- No Chinese! English only! Translate citations to English.
- Unless you come up with the equation yourself you must cite all equations! Cite the meaning of each variable. If you do not cite the equations or the meaning of each variable then TurnItIn will consider this as plagiarism!
- When you are citing a website do not just copy-paste the website. Go online and find out how to cite a website!!!!

Go here to learn how to cite sources:
https://owl.english.purdue.edu/owl/resource/747/01/

https://owl.purdue.edu/owl/research_and_citation/mla_style/mla_formatting_and_style_guide/mla_works_cited_electronic_sources.html