Title:

IB Candidate Number:

Word count: [Max 3000]!

RQ:
"To what extent **IV** affect **DV** at **CVs?**"
"How does **IV** affect **DV** at **CVs**?"

Background information
- Environmental Issue:
- Explain the cause and effect of the environmental issue using scientific knowledge
- Solution(s) to the environmental issue
- Tension as the result of the solutions. This must be explained (discussing the perspectives) using cultural, economic, societal, environmental and political point of views
- How do the environmental issue and/or strategy link to your RQ?

Variables
- Independent variable:
  - Outline how this was done or measured
  - State the values / groups / IV intervals → this must. Be justified
    - P/S: the range should make sense in real-life settings
- Dependent variable:
  - Outline what observations were recorded
  - Explain how to process the data to link to your RQ
- Controlled variables
  - Outline how these were done → Types, amount, range etc
- Uncontrolled variables
  - Explain how some uncontrolled factors may affect your data accuracy & precision

Methodology
- Step by step how the investigation was done. Screenshots, photos etc will help
- Method should be repeatable and allow you to collect data that answer the RQ

Safety, ethical and environmental considerations
- What are the safety aspects?
- Is there any chemical or materials used that may harm the environment?

Results (qualitative and quantitative)

- Describe qualitative observation (colour, apparence, etc) in a short paragraph [if application]
- Show raw data table
- Show calculations
- Show processed data table
- Show graph(s) to represent your data
- Show the error bars, uncertainties etc.
- If statistical, show correlation such as ANOVA

Analysis

- Describe patterns observed in the graph. [This must reference the data. For instance: "Based on figure 1…."]
  - How the overall data changes.
  - What are the highlights.
- Interpret the pattern → Explain the pattern using ESS and science/societal theories
- Explain the patterns using statistical tools [if applicable]
- If applicable (good to have), discuss:
  - Impact and/or propagation of uncertainties
  - Measure of bias, reliability and validity
- Outline any outlier or anomaly. Explain the anomaly

Conclusion

- Answer your research question using your data.
- Summarise the analysis and provide some evidence and scientific explanations
- Your conclusion should now assume that you simulation or lab procedure has the same impacts in real environmental settings.
- If you included a hypothesis, you must reference your hypothesis as well

Evaluation

P/S: you don't have to identify all weaknesses or limitations but you need to evaluate the significant ones. Every methodological weakness leads to low quality of data (this does not include your lack of skills). Limitation means your procedure may not be able to address the environmental issues fully but somewhat trying to.

- Identify the limitations or weaknesses in your methodology. How this has affected your data? Did this cause any anomaly? Was this weak methodology inevitable or gives some advantage?
- Provide solutions to the identified weaknesses. Outline the benefit and limitations of the solutions
- Are there any unanswered questions or issues in the investigation based on your conclusion? The unresolved questions can also be about how your conclusion may be impacted and extensions for future investigations

Bibliography

- You may use any format of referencing although one specific should be used consistently throughout the report

Appendix

- If applicable, insert any supporting documents here such as images, survey raw extracted data etc.