

Chemistry IA Breakdown

Overview

The Internal Assessment (IA) for IB Chemistry SL takes the form of a lab report that you have designed and conducted yourself. We have worked on your lab report skills over the course of your entire junior year with this assessment in mind because it is the only assessment in IB Chemistry that **you have full control over**. In a normal year, the IA accounts for 20% of your overall score. This does not seem like much but it is 20% that you have chance to do at your own pace (relatively speaking), with all your notes and resources, and with the opportunity to get feedback from me. This past year, it was the only component actually assessed and was used in conjunction with predicted grades and historical data to assign grades.

Expectations on Scores

The IA is scored out of 24 points broken down into five categories: Personal Engagement (2), Exploration/Experimental Design (6), Analysis (6), Conclusion and Evaluation (6), and Communication (4). For more information about these categories, see the “Chemistry IA Rubric”. With that in mind, **it is my expectation that you will score a minimum of 11 out of 24 points which equates to an IB score of a 4.**

Grading

You will receive a variety of grades related to your IA, some in the Formative category, some in the Summative category, and one in the Final category.

Formative Assessments

There will be checkpoints for your research question approval, submission of a draft of the Exploration/Experimental Design, completion of your experiment, submission of a draft of your Analysis, submission of a draft of your Conclusion/Evaluation, and finally submission of a complete updated full draft. In addition, at each major draft checkpoint, you will receive a grade for setting up and attending a formal feedback meeting with me.

Summative Assessments

You will receive a summative grade for each of the checkpoints above minus the first based on the quality of the work. These grades break down as follows:

- A grade of an “A” means that the draft is high quality and includes each of the main components

- A grade of a “B” means that the draft is either missing one key component, has one major issue, OR has more than a handful of small issues to fix.
- A grade of a “C” means that the draft is missing one or two key components AND has a major issue or more than a handful of small issues.
- A grade of an “F” means that the draft is missing multiple key components or has multiple major issues. If graded now, you would receive a 1 or 2 out of 6 for this section.

Final

This year, your Final in the class will be based on the final draft of your IA converted to a 100 point scale, where a score of 11 out of 24 points (which is the lowest score that equates to a 4) set to be somewhere around a 72%.

Selection of Research Question/Topic

This year, to help facilitate the generation of unique IA ideas instead of repeating ones found on the internet when students simply google “Chemistry IA topics”, I am providing two “themes” around which you can build your IA. Outside of the benefit already mentioned, using this approach allows us to learn together about some areas of chemistry beyond the normal course of work. This year’s themes are shown below. You will need to find a starting research article to use as a foundation for your RQ and get it approved along with your RQ.

1. Quantum dots (QDs) – The term “quantum dots” refers to a type of nanoparticles that have optical and electronic properties that make them useful for a variety of applications such as the creation of LEDs or as a sensor/detector for a variety of chemicals. An IA topic under this theme could look at an existing synthesis method and modify something about it at five levels OR could look at an application of QDs in the field of analytical chemistry in their role as a detector. Some other keywords you might come across or use in your Googling that are related to QDs are “hydrothermal synthesis”, “one pot synthesis” and “green synthesis”.
2. Electrochemistry – This is a topic we will touch on briefly next year (Topic 9). However, the way we treat it doesn’t do it justice and fully demonstrate the power electrochemistry has in the analytical chemistry field. An IA topic under this theme would look at using one of the variety of techniques we can perform here at DCHS to quantify the amount of something in various substances. These techniques include:
 - a. Cyclic voltammetry
 - b. Linear sweep voltammetry
 - c. Sinusoidal voltammetry
 - d. Constant voltage voltammetry
 - e. Chronoamperometry
 - f. Multi-step voltammetry.

Timeline

Below is a list of tentative key dates associated with the Chemistry IA process. Note that these may change depending on how the year shapes up and at the needs of other subjects so as to not overburden you.

- June 11th – Approval of RQ and parent paper
- August 13th – Submission of a complete draft of the Exploration/Experimental Design Section. Note that you will not be allowed to begin your experiment until I am satisfied you know what you are doing in your methodology.
- November 19th – Completion of experiment and collection of data
- December 19th – Submission of draft of Analysis
- February 6th – Submission of draft of Conclusion and Evaluation
- March 27th – Submission of final draft