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EE/RPF

For use from May/November 2027

International Baccalaureate®
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Student personal code:

Extended essay - Reflection and progress form

Student: *This form is to be completed by you and your supervisor during the progress and completion of the extended essay. It records your progress through the extended essay process and includes your reflective statement addressing your extended essay experience. You must undertake three formal reflection sessions with your supervisor: The first formal reflection session should focus on your initial ideas and how you plan to undertake your research; the interim reflection session takes place once a significant amount of your research has been completed, and the final session will be in the form of a viva voce, once you have completed and handed in your extended essay. This document acts as a record in supporting the authenticity of your work. Following the viva voce, you write a* ***reflective statement*** *of no more than 500 words., which must be included on the RPF.*

The completion of this form is a mandatory requirement of the extended essay. It must be submitted together with the completed essay. The reflective statement will then be assessed under Criterion E. Students and supervisors should be aware that a mark of 0 will be awarded by the examiner for criterion E if the RPF is blank or the reflective statement is written in a language other than that of the accompanying essay.

Supervisor: *You must have three reflection sessions with each student, one early in the process, an interim meeting and then the final viva voce. Other check-in sessions are permitted but do not need to be recorded on this sheet. After each reflection session you must record the month that the reflection session took place, the student's year of DP study at that time and initial the form.*
By submitting this student work for assessment, you are taking responsibility for its authenticity. No piece of student work should be uploaded/submitted to the e-Coursework system if its authenticity is in doubt.

First reflection session

Month: DP year (1 or 2): Supervisor initials:

Interim reflection session

Month: DP year (1 or 2): Supervisor initials:

Final reflection session – Viva voce

Month: DP year (1 or 2): Supervisor initials:

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Reflective statement

(No more than 500 words, written in the same language as the accompanying extended essay)

My interest in the topic I chose, how changing the temperature and the time of the cold brewing process of green tea affects its water polyphenol concentration, came from the fact that I love milk tea.

I knew that hot water would release more tea polyphenols, but I wanted to know if there was any relationship between temperature, time and polyphenol concentration in green tea water. It was my supervisor who introduced me to the cold brewing technique, which I found interesting to study. I did some research about the different methods that could be used for this determination, and finally decided to use a potassium permanganate ($KMnO_4$) titration which would allow me to work with lower temperatures. Of course, equipment limitations in my school laboratory also cut off some other methods such as the spectrophotometric one.

My challenges were not limited to the determination of the polyphenolic content in tea water but started with the actual extraction process. I tried Soxhlet extraction, but it proved not to be efficient as the extraction did not filter completely, so in the end I went for a simple method that was using a Buchner funnel. Once the extraction issue was solved, that part of the experiment ran smoothly.

Titration, however, took a long time and I thus realized how important time management skills become when working in the laboratory.

Through this experience I gained a basic understanding of the cold brewing process and the importance of structures and properties of polyphenols in biochemistry. I also discovered the main random error of the $KMnO_4$ titration after hours of experimentation.

This taught me to evaluate comprehensively the method choice before and during a research process, something that is invaluable facing my future major in medicine.

Personally, I find that I not only acquired practical skills, but also learned how to overcome frustration that comes with challenges.