

IB Mathematics Exploration

The IB mathematics exploration is a short research report on a mathematical topic of your choice. It is internally assessed (i.e. graded by the teacher) and counts for 20% of your final IB grade.

"The emphasis is on mathematical communication (including formulae, diagrams, graphs and so on), with accompanying commentary, good mathematical writing and thoughtful reflection."*

Timeline

1. Select a topic and submit a project proposal, due Friday November 7th
"the exploration title and a brief description of the task, outlining the purpose of the exploration together with the strategies and techniques that will be used and, if applicable, how data is to be collected or generated, and how stimulus material has been used to generate ideas."
2. Submit a first draft, due Monday December 1st
3. Submit final draft, Monday February 2nd

Scoring criteria (20 marks total)

Criterion A: Presentation (4 marks)

The "presentation" criterion assesses the organization and coherence of the exploration.

A **coherent** exploration is logically developed, easy to follow and meets its aim. This refers to the overall structure or framework, including introduction, body, conclusion and how well the different parts link to each other.

A **well-organized** exploration includes an introduction, describes the aim of the exploration and has a conclusion. Relevant graphs, tables and diagrams should accompany the work in the appropriate place and not be attached as appendices to the document. Appendices should be used to include information on large data sets, additional graphs, diagrams and tables.

A **concise** exploration does not show irrelevant or unnecessary repetitive calculations, graphs or descriptions.

Criterion B: Mathematical communication (4 marks)

The “mathematical communication” criterion assesses to what extent the student has:

- used appropriate mathematical language (**notation, symbols, terminology**). Calculator and computer notation is acceptable only if it is software generated. Otherwise it is expected that students use appropriate mathematical notation in their work

defined **key terms**- and variables, where required

- used **multiple forms of mathematical representation**, such as formulae, diagrams, tables, charts, graphs and models, where appropriate
- used a **deductive method** and set out proofs logically where appropriate

Criterion C: Personal engagement (3 marks)

The “personal engagement” criterion assesses the extent to which the student engages with the topic by exploring the mathematics and making it their own. It is not a measure of effort.

Criterion D: Reflection (3 marks)

The “reflection” criterion assesses how the student reviews, analyses and evaluates the exploration. Although reflection may be seen in the conclusion to the exploration, it may also be found throughout the exploration.

Criterion E: Use of mathematics (6 marks)

Relevant mathematics commensurate with the level of the course is used. The mathematics explored is correct. Thorough knowledge and understanding are demonstrated.

*much of this material is quoted from official IB Mathematics materials