📔 Summary

HL Algebra (Permutations and Combinations)

Subject	**Year**	**Start date**	**Duration**
Mathematics: analysis and approaches	IB1	Week 1, February	`1 week`

Course Part

Description
Algebra is an abstraction of numerical concepts and employs variables which allow us to solve mathematical problems.

🎴 Inquiry & Purpose

⑦ Inquiry / Higher Order Questions

Type	Inquiry Questions
Skills-based	How many different tickets are possible in a lottery? What does this tell us about the ethics of selling lottery tickets to those who do not understand the implications of these large numbers?
Skills-based	Finding approximations to square root 2

🔎 Curriculum

⊕ Aims

Develop logical and creative thinking, and patience and persistence in problem solving to instil confidence in using mathematics

◇ Objectives

Reasoning: Construct mathematical arguments through use of precise statements, logical deduction and inference and by the manipulation of mathematical expressions.

📓 Syllabus Content

Topic 1: Number and algebra

AHL Content

AHL 1.10

Counting principles, including permutations and combinations.

📑 ATL Skills

🗣 Approaches to Learning

⚙️ **Thinking**

- In this unit, we will

  ask students to formulate a reasoned argument to support their opinion or conclusion

  give students time to think through their answers before asking them for a response

  reward a new personal understanding, solution or approach to an issue

  ask open questions

  set students a task which required higher-order thinking skills (such as analysis or evaluation)

  build on a specific prior task

  help students to make their thinking more visible (for example, by using a strategy such as a thinking routine)

  require students to take an unfamiliar viewpoint into account when formulating arguments

  ask questions that required the use of knowledge from a different subject from the one you are teaching

  include a reflection activity

  make a link to TOK

👨‍🏫 Developing IB Learners

☆ Learner Profile

🔍 Inquirers

📚 Knowledgeable

💡 Thinkers