

IB DP IB Mathematics Analysis and approaches SL 2022  
(IB1)

## Summary

### SL Chapter 11 - Geometry and Trigonometry

Subject	Year	Start date	Duration
Mathematics: analysis and approaches	IB1	Week 4, November	1 week

Course Part

Description

In this unit you will explore the use of radians and the applications of right and non-right-angled triangles

## Inquiry & Purpose

### Inquiry / Higher Order Questions

Type

Inquiry Questions

Skills-based

How do we know when to use cosine rule, sine rule or area of triangle?

## Curriculum

### Aims

Communicate mathematics clearly, concisely and confidently in a variety of contexts

### Objectives

**Communication and interpretation: Transform common realistic contexts into mathematics; comment on the context; sketch or draw mathematical diagrams, graphs or constructions both on paper and using technology; record methods, solutions and conclusions using standardized notation; use appropriate notation and terminology.**

### Syllabus Content

#### Topic 3: Geometry and trigonometry

SL Content

SL 3.1

The distance between two points in three- dimensional space, and their midpoint.

Volume and surface area of three-dimensional solids including right-pyramid, right cone, sphere, hemisphere and combinations of these solids.

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The size of an angle between two intersecting lines or between a line and a plane.

SL 3.2

Use of sine, cosine and tangent ratios to find the sides and angles of right-angled triangles.

The sine rule:  $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

The cosine rule:  $\cos C = \frac{a^2 + b^2 - c^2}{2ab}$ ;  $f(x) = \frac{ax + b}{cx^2 + dx + e}$ , and  $f(x) = \frac{ax^2 + bx + c}{dx + e}$

Area of a triangle as  $\frac{1}{2}ab \sin C$ .

SL 3.3

Applications of right and non-right angled trigonometry, including Pythagoras's theorem.

Angles of elevation and depression.

Construction of labelled diagrams from written statements.

## ATL Skills

### Approaches to Learning



#### Thinking

- In this unit, we will

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

build on a specific prior task

include a reflection activity



## Developing IB Learners

### Learner Profile



Inquirers



Knowledgeable



Thinkers



Reflective