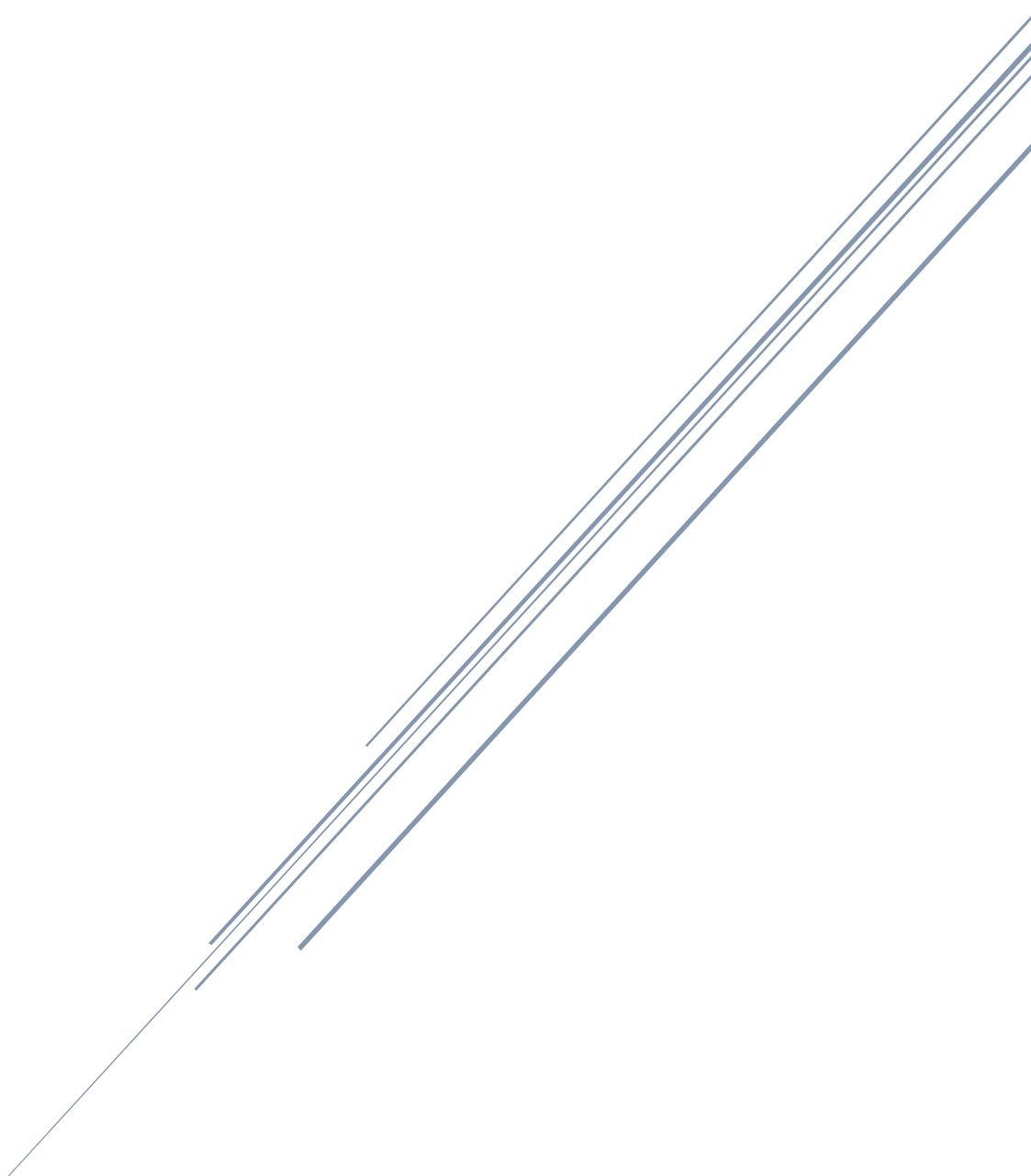


MATHEMATICS SYLLABUS

Year 11 Lev 3-3*



Learning Outcomes Framework
September 2026

Year 11 Lev 3-3*	Ref to SEC
Strand 1: Learning Area Outcome: I understand the structure of the number system and the relationship between numbers.	
Subject Focus: Number – The number system	

Strand 2: Learning Area Outcome: I can calculate using mental methods, pencil and paper methods, and, assistive technology methods. I can check calculations by rounding numbers and making rough approximations. I can calculate to the most appropriate level of accuracy. I can also check the reasonableness of answers.		
Subject focus: Number – Numerical calculations		
74	I can use index notation and the rules for working with positive and negative fractional indices.	2.3bi
76	I can use assistive technology (e.g. tablets, computers and calculators) and other resources (e.g. Cuisenaire rods, Unifix cubes, base 10 blocks) appropriate to this level to calculate and to learn about numerical calculations.	2.3bq
77	I can work on tasks and activities including worded problems that are related to mathematical content in this strand at this level.	2.3bs
	Use appropriate mathematical processes to work on tasks and/or activities that are related to mathematical content at this level and which involve one or more modes of assessment such as solving, investigating, modelling, maths trails, and research projects.	2.3br

Strand 3: Learning Area Outcome: I can recognise and describe patterns and relationships in various mathematical ways and can use algebraic manipulations.		
Subject Focus: Algebra – Fundamentals of Algebra		
12	I can add and subtract algebraic fractions with linear and quadratic algebraic denominators.	3.3r/s
21	I can solve algebraically two simultaneous equations, one linear and one quadratic.	3.3ab
24	I can solve equations involving algebraic fractions with quadratic algebraic denominators	3.3af
26	I can solve simple equations using indices when x is a power. e.g. Solve for x : $2^x = 8$; $9^x = 3^{x+1}$	3.3ah
29	I can construct tables of values for cubic and reciprocal functions.	4.3e
30	I can plot the graph of a cubic function and a reciprocal function from a table of values.	4.3g
41	I can solve graphically two simultaneous equations: one linear and one cubic; or one linear and one reciprocal.	4.3t
47	 I can work through situations that use direct and inverse variation ($y \propto x^n$ for $n = \pm 1, \pm 2, \pm 3, \pm \frac{1}{2}, \pm \frac{1}{3}$.)	3.3ak

48	I can interpret rates of change in linear graphs. e.g. speed, distance and time.	4.3r
49	I can use the rules for multiplying and dividing fractional indices. (positive and negative) E.g. Simplify: $\sqrt{\frac{25p^2}{r^4}}$ Write $\frac{\sqrt{a} \times (a^2)^{-1}}{a^{-3}}$ as a power of a. $x^{-\frac{2}{3}} = \frac{1}{\sqrt[3]{x^2}}$	3.3t
52	I can use assistive technology (e.g. tablets, computers and calculators) and other resources (e.g. algebra blocks) appropriate to this level to learn about the fundamentals of algebra.	3.3am
53	I can work on tasks and activities including worded problems that are related to mathematical content in this strand at this level.	3.3ao
	I can use appropriate mathematical processes to work on tasks and/or activities that are related to mathematical content at this level and which involve one or more modes of assessment such as solving, investigating, modelling, maths trails, and research projects.	3.3an

Strand 4: Learning Area Outcome: I understand and can use forms of measurement and can make reasonable estimations. Subject Focus: Shape, Space & Measures – Measures		
10	I can use trigonometric ratios in 3D situations involving angles of elevation/depression and bearings. <i>(E.g. Find the angle between a line and a plane; Find the angle between two planes.)</i>	5.3x
11	I can use the sine and cosine rules to solve any triangle.	5.3y
21	I can convert larger to smaller standard units of area and volume, and vice versa.	5.3ah
28	I can derive the formula $A = \frac{1}{2}ab \sin C$ and use it to find the area of any triangle.	5.3ak/al
34	I can calculate the area of a segment of a circle.	5.3aw
35	I can calculate the area of compound shapes that use segments of circles.	5.3ax
37	I can find the surface area and volume of simple compound solid shapes involving cubes, cuboids, cylinders, and prisms.	5.3be 5.3be
40 40	I can use the relationship between length, area , and volume of similar shapes.	6.3ae 6.3af
41	I can give appropriate upper and lower bounds for measurement data given to a specified accuracy (e.g. measured lengths and measured masses).	5.3bg
42	I can obtain appropriate upper and lower bounds to solutions of simple calculations.	5.3bh
54	I can use assistive technology (e.g. tablets, computers, and calculators) and other resources (e.g. 2D and 3D plastic shapes, measuring instruments) appropriate to this level to learn about measures.	5.3bw
55	I can work on tasks and activities including worded problems that are related to mathematical content in this strand at this level.	5.3by

	I can use appropriate mathematical processes to work on tasks and/or activities that are related to mathematical content at this level and which involve one or more modes of assessment such as solving, investigating, modelling, maths trails, and research projects.	5.3bx
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Strand 5: Learning Outcome: I can recognise and describe the properties of shapes. I can use these properties to construct shapes using appropriate mathematical instruments and to prove geometric statements. Subject focus: Shape Space and Measures – Euclidean Geometry		
10	I can use Pythagoras' Theorem in 3D shapes.	5.3o
19	I can draw the plan, front elevation and side elevation of a cylinder, cone, triangular prism and square-based right-pyramid from a 2D drawing.	6.3bm/bn/bo 6.3bm/bn/bo
29	I can explain the concept of similarity. I can identify similar shapes.	6.3ab
30	 I can prove two triangles are similar using either one of the following properties: i) the angles of one are respectively equal to the angles of the other (AAA); ii) the ratio of the three sides of the first triangle is equal to the ratio of the corresponding sides of the other; iii) one angle of one triangle is equal to one angle of the other triangle and the sides about these equal angles are in the same ratio. I can use the fact that two triangles are similar in order to find the lengths of missing sides and angles.	6.3ad
31	I can describe what a locus of a point is.	7.3n
32	I can use ruler and compasses only to construct the locus of a point which is: i) At a fixed distance from a given point. ii) Equidistant from a straight line. iii) Equidistant from two given points. iv) Equidistant from two intersecting straight lines. I can solve problems using the above constructions involving intersecting loci and regions.	7.3o 7.3p 7.3q 7.3r 7.3s
34	I can use assistive technology (e.g. tablets and computers, including dynamic geometry software packages and LOGO) and other resources (e.g. 2D and 3D plastic shapes) appropriate to this level to learn about properties of shapes.	7.3u
35	I can work on tasks and activities including worded problems that are related to mathematical content in this strand at this level.	7.3w
	I can use appropriate mathematical processes to work on tasks and/or activities that are related to mathematical content at this level and which involve one or more modes of assessment such as solving, investigating, modelling, maths trails, and research projects.	7.3v

Strand 6: Learning Area Outcome: I can describe position and movement of shapes in a plane. Subject Focus: Shape, Space & Measures – Transformation Geometry		
9	I can identify planes of symmetry in simple 3D shapes.	8.3c

21	I can use assistive technology (e.g. tablets and computers) and other resources (e.g. 2D and 3D plastic shapes) appropriate to this level to learn about transformation geometry.	8.3w
22	I can work on tasks and activities including worded problems that are related to mathematical content in this strand at this level.	8.3y
	I can use appropriate mathematical processes to work on tasks and/or activities that are related to mathematical content at this level and which involve one or more modes of assessment such as solving, investigating, modelling, maths trails, and research projects.	8.3x

Strand 7: Learning Area Outcome: I can collect, analyse, interpret and communicate statistical information.

Subject Focus: Data Handling & Chance – Statistics

2	I can read and interpret a cumulative frequency table and a cumulative frequency graph. I can compare two cumulative frequency tables or cumulative frequency graphs.	9.3d 9.3e
3	I can construct a cumulative frequency table and use it to draw a cumulative frequency graph.	9.3h/i
11	I can interpret a histogram with unequal intervals.	9.3s
12	  I can construct a histogram with unequal class intervals.	9.3t
15	I can explain what the median, quartiles and the inter-quartile range of a set of data represent.	9.3ai
19	 I can use cumulative frequency graphs to estimate the median, the quartiles and the inter-quartile range.	9.3aj
20	  I can interpret box-and-whisker plots.	9.3ak
21	I can construct box-and-whisker plots.	9.3al
23	I can use assistive technology (e.g. tablets, computers and calculators) and other learning resources to learn about statistics.	9.3an
24	I can work on tasks and activities including worded problems that are related to mathematical content in this strand at this level.	9.3ap
	I can use appropriate mathematical processes to work on tasks and/or activities that are related to mathematical content at this level and which involve one or more modes of assessment such as solving, investigating, modelling, maths trails, and research projects.	9.3ao

Strand 8: Learning Area Outcome: I understand ideas of chance and uncertainty.

Subject Focus: Data Handling & Chance – Probability

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Assessment criteria in **bold** type refer to extension level 3*