Mathematics Continuum of Learning

# Stage 5 to Stage 6 Standard

**Unofficial**

Based on *Mathematics K-10 Syllabus, NESA, 2022 and Mathematics Standard Stage 6 Syllabus, NESA, 2017.*
This is not an authorised NESA document. It was developed for the purposes of planning.

| Stage 5 | | Standard | | |
|---|---|---|---|---|
| **Core** | **Path (Stn)** | **Year 11** | **Year 12 Standard 1** | **Year 12 Standard 2** |
| | | **Financial Mathematics** | | |
| ***Financial Mathematics***<br>MA5-FIN-C-01 solves financial problems involving simple interest, earning money and spending money<br>MA5-FIN-C-02 solves financial problems involving compound interest and depreciation | | ***Money Matters***<br>MS-F1 Money Matters | ***Financial Mathematics***<br>MS-F2 Investment<br>MS-F3 Depreciation and Loans | ***Financial Mathematics***<br>MS-F4 Investments and Loans<br>MS-F5 Annuities |
| | | **Algebra** | | |
| ***Algebraic Techniques***<br>MA5-ALG-C-01 simplifies algebraic fractions with numerical denominators and expands algebraic expressions<br>***Indices***<br>MA5-IND-C-01 simplifies algebraic expressions involving positive-integer and zero indices, and establishes the meaning of negative indices for numerical bases<br>***Equations***<br>MA5-EQU-C-01 solves linear equations of up to 3 steps, limited to one algebraic fraction | | ***Formulae and Equations***<br>MS-A1 Formulae and Equations | | |
| ***Linear relationships***<br>MA5-LIN-C-01 determines the midpoint, gradient and length of an interval, and graphs linear relationships, with and without digital tools<br>MA5-LIN-C-02 graphs and interprets linear relationships using the gradient/slope-intercept form | | ***Linear Relationships***<br>MS-A2 Linear Relationships | ***Types of Relationships***<br>MS-A3 Types of Relationships<br>A3.1 Simultaneous linear equations | ***Types of Relationships***<br>MS-A4 Types of Relationships<br>A4.1 Simultaneous linear equations |
| ***Non-Linear relationships***<br>MA5-NLI-C-01 identifies connections between algebraic and graphical representations of quadratic and exponential relationships in various contexts<br>MA5-NLI-C-02 identifies and compares features of parabolas and exponential curves in various contexts | | | ***Types of Relationships***<br>MS-A3 Types of Relationships<br>A3.2 Graphs of practical situations | ***Types of Relationships***<br>MS-A4 Types of Relationships<br>A4.2 Non-linear relationships |

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| | | **Measurement** | | |
| ***Numbers of any magnitude***<br>MA5-MAG-C-01 solves measurement problems by using scientific notation to represent numbers and rounding to a given number of significant figures | | ***Applications of Measurement***<br>MS-M1<br>M1.1: Practicalities of measurement | | |
| ***Area and Surface Area***<br>MA5-ARE-C-01 solves problems involving the surface area of right prisms and practical problems involving the area of composite shapes and solids | ***Area and Surface Area***<br>MA5-ARE-P-01 applies knowledge of the surface area of right pyramids and cones, spheres and composite solids to solve problems (Path: Stn, Adv) | ***Applications of Measurement***<br>MS-M1<br>M1.2 Perimeter, area and volume | | |
| ***Volume***<br>MA5-VOL-C-01 solves problems involving the volume of composite solids consisting of right prisms and cylinders | ***Volume***<br>MA5-VOL-P-01 applies knowledge of the volume of right pyramids, cones and spheres to solve problems involving related composite solids (Path: Stn, Adv) | | | |
| | | ***Applications of Measurement***<br>MS-M1<br>M1.3 Units of energy and mass | | |
| | | ***Working with Time***<br>MS-M2 Working with Time | | |
| ***Trigonometry***<br>MA5-TRG-C-01 applies trigonometric ratios to solve right-angled triangle problems<br>MA5-TRG-C-02 applies trigonometry to solve problems, including bearings and angles of elevation and depression | ***Trigonometry***<br>MA5-TRG-P-01 applies Pythagoras' theorem and trigonometry to solve 3-dimensional problems and applies the sine, cosine and area rules to solve 2-dimensional problems, including bearings (Path: Stn, Adv) | ***Applications of Measurement***<br>MS-M1<br>M1.2 Perimeter, area and volume (Pythagoras) | ***Right-angled Triangles***<br>MS-M3 Right-angled Triangles | ***Non-right-angled Trigonometry***<br>MS-M6 Non-right-angled Trigonometry |
| ***Properties of geometrical figures***<br>MA5-GEO-C-01 identifies and applies the properties of similar figures and scale drawings to solve problems | | | | |
| | ***Variation and rates of change***<br>MA5-RAT-P-01 identifies and solves problems involving direct and inverse variation and their graphical representations (Path: Stn, Adv) | | ***Rates***<br>MS-M4 Rates | ***Rates and Ratios***<br>MS-M7 Rates and Ratios |
| | | | ***Scale Drawings***<br>MS-M5 Scale Drawings | |

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| | | **Statistical Analysis** | | |
| ***Data analysis A*** | | ***Data Analysis*** | ***Further Statistical Analysis*** | ***The Normal Distribution*** |
| MA5-DAT-C-01 compares and analyses datasets using summary statistics and graphical representations | | MS-S1 Data Analysis | MS-S3 Further Statistical Analysis, S3.1: The statistical investigation process for a survey | MS-S5 The Normal Distribution |
| ***Data analysis B*** | ***Data analysis C*** | | ***Further Statistical Analysis*** | ***Bivariate Data Analysis*** |
| MA5-DAT-C-02 displays and interprets datasets involving bivariate data | MA5-DAT-P-01 plans, conducts and reviews a statistical inquiry into a question of interest (Path: Stn, Adv) | | MS-S3 Further Statistical Analysis, S3.2: Exploring and describing data arising from two quantitative variables | MS-S4 Bivariate Data Analysis |
| ***Probability*** | | ***Relative Frequency and Probability*** | | |
| MA5-PRO-C-01 solves problems involving probabilities in multistage chance experiments and simulations | | MS-S2 Relative Frequency and Probability | | |
| | | | **Networks** | |
| | ***Introduction to networks*** | | ***Networks and Paths*** | ***Network Concepts*** |
| | MA5-NET-P-01 solves problems involving the characteristics of graphs/networks, planar graphs and Eulerian trails and circuits (Path: Stn) | | MS-N1 Networks and Paths | MS-N2 Network Concepts |
| | | | | ***Network Concepts*** |
| | | | | MS-N3 Critical Path Analysis |