# Mathematics Stage 5: Sample scope and sequence (Core)

The Core–Paths structure is designed to encourage aspiration in students and provide the flexibility needed to enable teachers to create pathways for students working towards Stage 6. The structure is intended to extend students as far along the continuum of learning as possible and provide solid foundations for the highest levels of student achievement. The structure allows for a diverse range of endpoints up to the end of Stage 5.

This scope and sequence includes all Core content and is one example of a pathway towards Stage 6 Mathematics Standard.

Teachers are best placed to make programming decisions about pathways towards Stage 6 courses in the middle of students’ Stage 5 learning.

In Mathematics 7–10 there is one overarching **Working mathematically outcome.**

A student develops understanding and fluency in mathematics through: exploring and connecting mathematical concepts; choosing and applying mathematical techniques to solve problems; and communicating their thinking and reasoning coherently and clearly.

Stn (Standard), Adv (Advanced) and Ext (Extension) have been used to suggest Paths for related Stage 6 courses.

## Year 9 – Term 1

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| Weeks 1–7 | Weeks 8–10 |
| **Unit:** Earning and making money**Focus area(s):** Financial mathematics Aapplies algebraic and numerical techniques to solve financial problems involving simple interest, earning money and spending money | **Unit:** Numbers of any magnitude**Focus area(s):** Numbers of any magnitudesolves measurement problems by using standard form to represent numbers and rounding to a given number of significant figures |
| Outcomes: MA5-FIN-C-01Life Skills outcomes: MALS-FIN-01, MALS-FIN-02 | Outcomes: MA5-MAG-C-01Life Skills outcomes: Review and consolidate prior Life Skills outcomes |

## Year 9 – Term 2

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| Weeks 1–5 | Weeks 6–10 |
| **Unit:** Trigonometry**Focus area(s):** Trigonometry Aapplies trigonometric ratios to solve right-angled triangle problems | **Unit:** Algebraic techniques**Focus area(s):** Algebraic techniques Asimplifies algebraic fractions with numerical denominators and expands algebraic expressions |
| Outcomes: MA5-TRG-C-01Life Skills outcomes: Review and consolidate prior Life Skills outcomes | Outcomes: MA5-ALG-C-01Life Skills outcomes: MALS-PAT-01 |

## Year 9 – Term 3

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| Weeks 1–3 | Weeks 4–7 | Weeks 8–10 |
| **Unit**: Probability**Focus area(s):** Probability Asolves problems involving probabilities in multistage chance experiments | **Unit:** Area and surface area**Focus area(s):** Area and surface area A, and Area and surface area B (Stn, Adv)solves problems involving the surface area of right prisms and practical problems involving the area of composite shapes applies knowledge of the surface area of cylinders and composite solids to solve problems  | **Unit:** Volume**Focus area(s):** Volume Asolves problems involving the volume of composite solids consisting of right prisms and cylinders |
| Outcomes: MA5-PRO-C-01Life Skills outcomes: MALS-PRO-01 | Outcomes: MA5-ARE-C-01, MA5-ARE-P-01Life Skills outcomes: MALS-ARE-01 | Outcomes: MA5-VOL-C-01Life Skills outcomes: MALS-VOL-01 |

## Year 9 – Term 4

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| Weeks 1–4 | Weeks 5–10 |
| **Unit:** Indices**Focus area(s):** Indices Asimplifies algebraic expressions involving positive-integer and zero indices, and establishes the meaning of negative indices for numerical bases | **Unit:** Properties of geometrical figures**Focus area(s):** Properties of geometrical figures Aidentifies and applies the properties of similar figures and scale drawings to solve problems |
| Outcomes: MA5-IND-C-01Life Skills outcomes: Review and consolidate prior Life Skills outcomes | Outcomes: MA5-GEO-C-01Life Skills outcomes: MALS-GEO-01 |

## Year 10 – Term 1

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| Weeks 1–5 | Weeks 6–10 |
| **Unit:** Compound interest and depreciation**Focus area(s):** Financial mathematics Bsolves financial problems involving compound interest and depreciation | **Unit:** Equations**Focus area(s):** Equations Asolves linear equations of up to 3 steps, limited to one algebraic fraction |
| Outcomes: MA5-FIN-C-02Life Skills outcomes: MALS-FIN-01, MALS-FIN-02 | Outcomes: MA5-EQU-C-01Life Skills outcomes: MALS-ADS-01, MALS-MDI-01 |

## Year 10 – Term 2

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| Weeks 1–5 | Weeks 6–10 |
| **Unit:** Data analysis**Focus area(s):** Data analysis Acompares and analyses datasets using summary statistics and graphical representations | **Unit:** Linear relationships**Focus area(s):** Linear relationships Adetermines the midpoint, gradient and length of an interval, and graphs linear relationships with and without digital tools |
| Outcomes: MA5-DAT-C-01Life Skills outcomes: MALS-DAT-02 | Outcomes: MA5-LIN-C-01Life Skills outcomes: MALS-POS-01 |

## Year 10 –Term 3

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| Weeks 1–5 | Weeks 6–10 |
| **Unit:** Linear relationships **Focus area(s):** Linear relationships Bgraphs and interprets linear relationships using the gradient/slope-intercept form | **Unit:** Trigonometry**Focus area(s):** Trigonometry Bapplies trigonometry to solve problems, including bearings and angles of elevation and depression |
| Outcomes: MA5-LIN-C-02Life Skills outcomes: MALS-POS-01 | Outcomes: MA5-TRG-C-02Life Skills outcomes: Review and consolidate prior Life Skills outcomes |

## Year 10 – Term 4

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| Weeks 1–4 | Weeks 5–10 |
| **Unit:** Data analysis **Focus area(s):** Data analysis Bdisplays and interprets datasets involving 2-variable data | **Unit:** Non-linear relationships**Focus area(s):** Non-linear relationships A, and Non-linear relationships Bidentifies connections between algebraic and graphical representations of quadratic and exponential relationships in various contextsidentifies and compares features of parabolas and exponential curves in various contexts |
| Outcomes: MA5-DAT-C-02Life Skills outcomes: MALS-DAT-02 | Outcomes: MA5-NLI-C-01, MA5-NLI-C-02Life Skills outcomes: Review and consolidate prior Life Skills outcomes |