

Suggested teaching order for

MAA SL

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Topics

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|-------------------------------------|------------|
| Topic 1: Number and Algebra | (1.1-1.7) |
| Topic 2: Functions | (2.1-2.10) |
| Topic 3: Geometry and Trigonometry | (3.1-3.7) |
| Topic 5: Statistics and Probability | (4.1-4.11) |
| Topic 5: Calculus | (5.1-5.11) |

(paragraphs are according to my lecture notes)

Plan

| Year 1 | Year 2 |
|---------------------|---------------------|
| 60% of the syllabus | 40% of the syllabus |

| YEAR 1 | |
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| Topic 1 | Number and Algebra |
| 1.1 | Numbers – rounding – scientific form |
| 1.2 | Methods of proof |
| 1.3 | Sequences in general - Series |
| 1.4 | Arithmetic sequences |
| 1.5 | Geometric sequences |
| 1.6 | Applications of G.S. – Percentage growth) |
| 1.7 | The Binomial Theorem – $(a+b)^n$ |

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| Topic 2 | Functions |
| 2.1 | Lines (or Linear functions) |
| 2.2 | Quadratics (or Quadratic functions) |
| 2.3 | Functions, domain, range, graph |
| 2.4 | Composition of functions: $f \circ g$ |
| 2.5 | The inverse function: f^{-1} |
| 2.6 | Transformations of functions |
| 2.7 | Asymptotes |
| 2.8 | Exponents – the exponential function a^x |
| 2.9 | Logarithms – the logarithmic function $\log_a x$ |
| 2.10 | Exponential Equations |

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| Topic 3 | Geometry and Trigonometry |
| 3.1 | 3D Geometry |
| 3.2 | Triangles – Sine and Cosine rules |
| 3.3 | Applications in 3D Geometry – Navigation |
| 3.4 | The trigonometric circle – Arcs and Sectors |
| 3.5 | $\sin\theta$, $\cos\theta$, $\tan\theta$ on the unit circle |
| 3.6 | Trigonometric identities and equations |
| 3.7 | Trigonometric functions |

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| Topic 5 | Calculus (part of differentiation) |
| 5.1 | The limit $\lim f(x)$ – The derivative $f'(x)$: A rough idea! |
| 5.2 | Derivatives of known functions – Rules |
| 5.3 | Tangent line – Normal line at some point x_0 |
| 5.4 | The chain rule |

| YEAR 2 | |
|----------------|---|
| Topic 5 | Calculus (part of differentiation - integration) |
| 5.5 | Monotony – max, min |
| 5.6 | Concavity – points of inflection |
| 5.7 | Optimisation |
| 5.8 | The indefinite integral |
| 5.9 | Integration by substitution |
| 5.10 | The definite integral - Areas between curves |
| 5.11 | Kinematics (displacement, velocity, acceleration) |

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| Topic 4 | Statistics and Probability |
| 4.1 | Basic concepts of Statistics |
| 4.2 | Measures of central tendency – Measures of spread |
| 4.3 | Frequency tables – Grouped Data |
| 4.4 | Regression |
| 4.5 | Elementary Set Theory |
| 4.6 | Probability |
| 4.7 | Conditional probability – Independent events |
| 4.8 | Tree diagrams |
| 4.9 | Distributions – Discrete random variables |
| 4.10 | Binomial distribution – $B(n,p)$ |
| 4.11 | Normal distribution – $N(\mu,\sigma)$ |

Alternative scenario
swap between

| YEAR 1 | YEAR 2 |
|---------------------------------|---------------------------------------|
| Topic 4 (Statistics) | Topic 5 (part of Calculus) |
| 4.1 | 5.1 |
| 4.2 | 5.2 |
| 4.3 | 5.3 |
| 4.4 | 5.4 |

Sequence for year 2: 5.1-5.7, then 4.5-4.11