Mathematics Extension 2 – scope and sequence

All outcomes referred to in this unit come from the [Mathematics Extension 2](https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/stage-6-learning-areas/stage-6-mathematics/mathematics-extension-2-2017) Syllabus

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| **Term 4** | **Weeks 1-2** | **Weeks 3-4** | **Weeks 5-6** | **Weeks 7-10** |
| **Unit** | MEX-N1.1  Arithmetic of complex numbers | MEX-N1.2  Geometric representation of a complex number | MEX-N1.3  Other representations of complex numbers | MEX-P1  The nature of proof |
| **Outcomes** | MEX12-1, MEX12-4, MEX12-7, MEX12-8 | MEX12-1, MEX12-4, MEX12-7, MEX12-8 | MEX12-1, MEX12-4, MEX12-7, MEX12-8 | MEX12-1, MEX12-2, MEX12-7, MEX12-8 |
| **Assessment** |  |  |  | Topic test |

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| **Term 1** | **Weeks 1-2** | **Weeks 3-4** | **Weeks 4-7** | **Weeks 8-10** |
| **Unit** | MEX-V1.1  Introduction to three-dimensional vectors | MEX-V1.2  Further operations with three-dimensional vectors | MEX-V1.3  Vectors and vector equations of lines | MEX-N2.1  Solving equations with complex numbers |
| **Outcomes** | MEX12-3, MEX12-7, MEX12-8 | MEX12-3, MEX12-7, MEX12-8 | MEX12-3, MEX12-7, MEX12-8 | MEX12-1, MEX12-4, MEX12-7, MEX12-8 |
| **Assessment** |  |  | Investigation style task:  Design an aerobatic display |  |

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| **Term 2** | **Weeks 1-3** | **Weeks 4-6** | **Weeks 7-8** | **Weeks 9-10** |
| Unit | MEX-N2.2  Geometrical implications of complex numbers | MEX-C1  Further integration | MEX-M1.1  Simple harmonic motion | MEX-M1.2  Modelling motion without resistance |
| Outcomes | MEX12-1, MEX12-4, MEX12-7, MEX12-8 | MEX12-1, MEX12-5, MEX12-7, MEX12-8 | MEX12-6, MEX12-7, MEX12-8 | MEX12-6, MEX12-7, MEX12-8 |
| Assessment |  |  |  | Topic test |

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| **Term 3** | **Weeks 1-2** | **Week 3** | **Weeks 4-5** | **Weeks 6-7** | **Weeks 8-9** | **Week 10** |
| Unit | MEX-M1.3 Resisted motion | MEX-M1.4 Projectiles and resisted motion | Trial examination period | MEX-M1.4 Projectiles and resisted motion | MEX-P2 Further proof by mathematical induction |  |
| Outcomes | MEX12-6, MEX12-7, MEX12-8 | MEX12-6, MEX12-7, MEX12-8 |  | MEX12-6, MEX12-7, MEX12-8 | MEX12-1, MEX12-2, MEX12-7, MEX12-8 |  |
| Assessment |  |  | Trial examination |  |  |  |

# **Note to staff**

* This sample scope and sequence is designed to be used with one of the combined scope and sequences on the [Mathematics Extension 1](https://education.nsw.gov.au/teaching-and-learning/curriculum/key-learning-areas/mathematics/stage-6/mathematics-extension-1) page of the department website.
* This sample scope and sequence is designed to incorporate the department sample assessment task, “Design an aerobatic display.” You can find this assessment task on the [Mathematics Extension 2](https://education.nsw.gov.au/teaching-and-learning/curriculum/key-learning-areas/mathematics/stage-6/mathematics-extension-2) page of the department website.
* The assessments included in this scope and sequence are suggestions only. You can find other sample assessment tasks on the NESA website for [Mathematics Extension 2 (NEW)](https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/stage-6-learning-areas/stage-6-mathematics/mathematics-extension-2-2017).
* The duration of each unit is approximate and will need to be adapted to suit the needs of the students within your school context. The lessons developed within each unit of work have been designed to explore a key concept or main idea. The length of each lesson and number of lessons assigned to each concept will vary between school contexts and should be adapted to suit your school scope and sequence and program.