An Introduction to the New Mathematics Standard and Life Skills Syllabuses

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The new NSW Stage 6 Mathematics Standard and Life Skills Syllabuses were endorsed in 2016. 2017 is a planning year with implementation for Year 11 in 2018 and Year 12 in 2019. The new Mathematics Advanced, Extension 1 and Extension 2 syllabuses will be released following an additional period of consultation and the JPL will provide a guide in the Semester 2, 2017 edition.

Due to the online nature of the syllabus documents, teachers are encouraged to download and review each section, including the aim and rationale before moving to the course content.

New features of Stage 6 syllabuses include:

- Australian Curriculum content identified by codes;
- Learning Across the Curriculum content, including cross-curriculum priorities and general capabilities;
- publication in an interactive online format;
- an interactive glossary.

Initial information regarding assessment has been published by the NSW Education Standards Authority (NESA). The most significant change is the approach to the formal school-based assessment program for Year 11 and Year 12. Examination specifications are expected to be available in Term 3, 2017.

Mathematics Standard

The Year 11 courses

Organisational structure

Mathematics Standard replaces the previous General Mathematics syllabus. There is a new organisational structure as well as updates to content.

The course is organised into topics with the topics divided into subtopics. Students can complete common content in Year 11 and then move into either Year 12 Mathematics Standard 1 or Year 12 Mathematics Standard 2.

Alternatively, teachers have flexibility within the common Year 11 content to address material that is essential for Mathematics Standard 1 in Year 12. This content is clearly indicated with a diamond symbol ◊ throughout the Year 11 syllabus content.

The content

The Year 11 content is common and there are no longer focus studies. Some of the topics from the previous focus studies have been retained within the topics, such as *Plan for the Running and Maintenance of a Car* within the subtopic *Money Matters* and so existing resources may still be of use.

Modelling and applications are now an integral part of each strand and also merge strands together. The table below demonstrates the changes between the previous and new syllabus structures:

General Preliminary Course (current in 2017)	**New Standard Year 11 Course (to be implemented in 2018) Topics and Subtopics**
Financial Mathematics Data and Statistics Measurement Probability Algebra and Modelling (FS) Communication (FS) Driving	**Algebra** MS-A1 Formulae and Equations MS-A2 Linear Relationships **Measurement** MS-M1 Applications of Measurement MS-M2 Working with Time **Financial Mathematics** MS-F1 Money Matters **Statistical Analysis** MS-S1 Data Analysis MS-S2 Relative Frequency and Probability

School-based assessment requirements

Teachers should refer to the NESA Assessment and Reporting in Mathematics Standard Stage 6 document at: http://syllabus.bostes.nsw.edu.au/mathematics-standard-stage6/ . Teachers are encouraged to refer to the relevant NESA documents for updates. Some features for the new syllabuses include:

The Year 11 formal school-based assessment program is to reflect the following requirements:

- three assessment tasks
- the minimum weighting for an individual task is 20%
- the maximum weighting for an individual task is 40%
- one task **must** be an assignment or investigation-style with a weighting of 20–30%.

NESA has provided the following examples of some approaches to task types for the assignment or investigation-style task:

- an investigative project or assignment involving presentation of work in class
- an independently chosen project or investigation
- scaffolded learning tasks culminating in an open-ended or modelling style problem
- a guided investigation or research task involving collection of data and analysis.

The Year 12 courses

The Mathematics Standard courses are Board Developed Courses and so students can achieve an HSC if they complete the course.

The content

Mathematics Standard 1

The table below demonstrates the changes between the previous and new syllabus structures:

General HSC Course (Current until 2018)	**New Standard 1 Year 12 Course (to be implemented in 2019) Topics and Subtopics**
Financial Mathematics Data and Statistics Measurement Probability Algebra and Modelling (FS) Design (FS) Household Finance (FS) The Human Body (FS) Personal Resources Usage	**Algebra** MS-A3 Types of Relationships **Measurement** MS-M3 Right-angled Triangles MS-M4 Rates MS-M5 Scale Drawings **Financial Mathematics** MS-F2 Investment MS-F3 Depreciation and Loans **Statistical Analysis** MS-S3 Further Statistical Analysis **Networks** MS-N1 Networks and Paths

Mathematics Standard 2

The table below demonstrates the changes between the previous and new syllabus structures:

General HSC Course (Current until 2018)	New Standard 2 Year 12 Course (to be implemented in 2019)
Financial Mathematics Data and Statistics Measurement Probability Algebra and Modelling (FS) Health (FS) Resources	**Algebra** MS-A4 Types of Relationships **Measurement** MS-M6 Non-right-angled Trigonometry MS-M7 Rates and Ratios **Financial Mathematics** MS-F4 Investments and Loans MS-F5 Annuities **Statistical Analysis** MS-S4 Bivariate Data Analysis MS-S5 The Normal Distribution **Networks** MS-N2 Network Concepts MS-N3 Critical Path Analysis

School-based assessment requirements

Teachers should refer to the NESA *Assessment and Reporting in Mathematics Standard Stage 6* document for updates. Some features for the new syllabuses include:

The Year 12 formal school-based assessment program is to reflect the following requirements:

- a maximum of four assessment tasks
- the minimum weighting for an individual task is 10%
- the maximum weighting for an individual task is 40%
- one task may be a formal written examination with a maximum weighting of 30%
- one task **must** be an assignment or investigation-style with a weighting of 15–30%.

Life Skills

The Life Skills course has been re-written to align with the new topics in Standard Mathematics: *Measurement, Algebra, Financial Mathematics, Statistical Analysis, and Networks.*

Teachers may choose the most relevant aspects of the content to meet the particular needs of individual students and identify the most appropriate contexts for the student to engage with the outcomes, for example, school, community or workplace. Students will not be required to complete all of the content to demonstrate achievement of an outcome.

In implementing the new syllabuses for Stage 6 Mathematics, the importance of collaboration of teachers between schools and within faculties will be essential. Professional learning opportunities such as those conducted by the Centre for Professional Learning will also be useful in supporting these processes. For more information visit: http://cpl.asn.au/

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