



**Mathematics Standard**  
**Stage 6**

**Draft Syllabus**

**Consultation Report**  
**February 2017**

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# 1 Background information

The NSW Education Standards Authority (NESA) replaced the Board of Studies, Teaching and Educational Standards NSW (BOSTES) on 1 January 2017.

The preparation of the Mathematics Standard Stage 6 Draft Syllabus took into account the broad directions for the learning area, which were developed following public consultation and endorsed by the NESA in December 2014. In 2015 NESA conducted consultation on the draft writing briefs. The draft writing briefs were endorsed by the Board in 2016.

NESA conducted consultation on the draft syllabus in Term 3, 2016.

The consultation program from 20 July 2016 to 31 August 2016 included:

- a meeting of the Years 11–12 Mathematics Board Curriculum Committee on 17 August 2016
- face-to-face consultation meetings
- targeted consultation meetings for:
  - Aboriginal education
  - Special education
  - Industry.
- student voice meetings
- an online survey on the NESA website
- written submissions.

Professional associations and schooling sectors conducted a range of activities during the consultation period to inform feedback to NESA.

Feedback from consultation was analysed and informed revisions to the draft syllabus. The final syllabus is available in an online interactive format on the NESA website.

## 2 Executive summary

The *Mathematics Standard Stage 6 Draft Syllabus Consultation Report* provides a description of the consultation process and a summary and analysis of feedback received. It details data and findings gathered from a meeting of the Years 11–12 Mathematics Board Curriculum Committee, 7 metropolitan and regional face-to-face consultation meetings, 7 targeted consultation meetings, 4 student voice meetings, 246 responses to an online survey and 53 written submissions.

A number of respondents stated that the Mathematics Standard course contains more content than could be completed in the indicative hours. Respondents indicated that this would limit the amount of time for applications and modelling. The inclusion of the new topic of Networks generated a diversity of views. A lack of familiarity with this topic and requests for professional development were raised by respondents.

The majority of respondents supported the change of nomenclature from Mathematics General to Mathematics Standard. Many respondents stated that the Year 11 Mathematics Standard course would not meet the needs of all Stage 5 students wishing to study a Stage 6 mathematics course, with numerous requests for a separate Year 11 Mathematics Standard 1 course. In addition, some respondents stated that the numeracy requirements for students yet to achieve the Australian Core Skills Framework (ACSF), numeracy level 3 were not addressed by the Mathematics Standard course.

The majority of respondents agreed that the aim provided an appropriate statement of the overall purpose, affirmed the proposed objectives and endorsed the outcomes as describing what students are expected to achieve in this course. The majority of respondents supported the Focus Studies being integrated within the strands.

A large number of respondents noted that the wording of the assessment guidance regarding formal written examination-style tasks was ambiguous and needed clarifying to ensure it was not misinterpreted. Many respondents suggested a higher weighting be given to the formal written examination-style task. The majority of respondents supported a reduction in the number of objective response questions in the HSC examination. There was considerable support for the optional examination for Year 12 Mathematics Standard 1.

Respondents acknowledged the need for a common component of questions in adjacent mathematics examinations but questioned whether there was sufficient common content between the Mathematics Standard 2 course and the Mathematics Advanced course to make this viable. Respondents also requested further clarity regarding whether Year 11 material can be assessed in the HSC examinations.

A number of respondents raised plagiarism and the integrity of student work in the use of an assignment or investigation-style assessment task. Some respondents suggested a lower assessment weighting for this style of task.

### 3 Key matters

Key matters	Actions
The course contains too much content for the indicative hours.	Content has been reviewed and an overall reduction has been made.
Support with any new content, particularly networks, will be required.	Greater detail and resources will be provided in a range of support materials.
The common Year 11 course would be too difficult for students who have just completed the 5.1 outcomes. Numeracy requirements are not addressed in this course for students who are yet to achieve the ACSF numeracy level 3.	Content which enables students to achieve the ACSF numeracy level 3, and which are needed to progress to the Year 12 Mathematics Standard 1 course have been identified and coded throughout the Year 11 Mathematics Standard course.
The weightings and guidance about school-based assessments need reviewing.	The <i>Assessment and Reporting in Mathematics</i> document will be published in 2017. This will provide advice and clarify assessment requirements.
Clarity is needed regarding the description of a formal examination-style task in the context of mathematics assessment.	
Clarity is needed regarding whether Year 11 material will be assessed in the HSC examination.	
Common content must be of sufficient quantity to allow for scaling between the Mathematics Standard 2 and the Mathematics Advanced course.	Content has been reviewed to ensure that there is sufficient common content for the appropriate assessment.

## 4 Analysis

### 4.1 Rationale

#### Summary

The majority of respondents strongly agreed or agreed that the proposed rationale describes the nature of the course in broad terms and explains its purpose in the curriculum.

#### Feedback affirming the rationale

Feedback	Sources
The rationale is well written and describes the purpose of the Mathematics Standard Course in the curriculum.	DoE Survey (x179)

#### Key matters and actions

Key matters	Sources	Actions
The rationale should be amended to describe the continuum of learning for students entering this course from Stage 5.1.	MANSW Survey (x15)	A section that clarifies how the Mathematics Standard course builds on mathematics learning in Stage 5 has been included in the syllabus.

## 4.2 Aim

### Summary

The majority of respondents strongly agreed or agreed that the proposed aim provides a succinct statement of the overall purpose of the course. Some respondents noted that the aim does not explicitly address the development of numeracy skills.

### Feedback affirming the aim

Feedback	Sources
The aim is well written and is succinct and clear.	DoE Survey (x173)
The aim explicitly addresses the inclusion of Working Mathematically as a strand.	MANSW Survey (x9)

### Key matters and actions

Key matters	Sources	Actions
The aim does not explicitly address the development of numeracy skills.	MANSW Survey (x9)	The aim provides a succinct statement of purpose. The development of numeracy skills is referenced in the rationale and numeracy opportunities are provided throughout the syllabus.



## 4.3 Objectives

### Summary

The majority of respondents strongly agreed or agreed that the objectives define the intended learning and the knowledge, understanding, skills, values and attitudes to be developed through study of the course.

### Feedback affirming the objectives

Feedback	Sources
The objectives define in broad terms the intended learning and knowledge, skills, understanding, values and attitudes to be developed through the study of Mathematics Standard.	Survey (x171)

### Key matters and actions

Key matters	Sources	Actions
The objectives do not address the development of numeracy and literacy skills.	CEParra MANSW Survey (x3)	A description of numeracy in relation to the syllabus has been included in the Rationale. Literacy opportunities are embedded in content and identified by Learning across the curriculum icons.  The syllabus includes opportunities for students to develop numeracy skills through specific numeracy content.

## 4.4 Outcomes

### Summary

The majority of respondents strongly agreed or agreed that the outcomes describe what students are expected to achieve in relation to what they know, understand and can do from studying the course. Some respondents noted that the outcomes do not clearly link to all course content.

The majority of respondents agreed that the outcomes provide an appropriate continuum of learning from Stage 5 to Stage 6 for students who have achieved Stage 5.2 outcomes.

### Feedback affirming the outcomes

Feedback	Sources
The outcomes are well written, and appropriately describe what students are expected to know, do, understand and achieve.	Survey (x146)

### Key matters and actions

Key matters	Sources	Actions
The outcomes do not provide a learning continuum for students who only achieved Stage 5.1 outcomes.	Bankstown (CM) CCSOBB DoE Katoomba (CM) Nowra (CM) Parramatta (CM)	A description of the appropriate learning continuum from Stage 5 to Stage 6 is provided in the syllabus.  Content has been identified and coded throughout the Year 11 Mathematics Standard course to indicate content that enables students to develop their numeracy skills, and content needed to progress to the Year 12 Mathematics Standard 1 course.
Some outcomes do not clearly link with course content.	CCSOBB CEParra MANSW SCS	Outcomes have been reviewed and amendments made to ensure they align with course content.

## 4.5 Course structure and requirements

### Summary

There was a range of feedback regarding the course structure and requirements. Feedback gathered through the survey responses indicated that the amount of content, including common content, the continuum of learning from the Stage 5.1 course, numeracy opportunities and the separation of topics requires review. However, feedback gathered through face-to-face consultation meetings and written submissions indicated that the course structure and requirements are clear, manageable and appropriate for students and will promote study of the course most appropriate for students' abilities and aspirations.

### Feedback affirming the course structure and requirements

Feedback	Sources
The course structure and requirements are clear, manageable and appropriate for students who have demonstrated all of Stage 5.1 and 5.2 outcomes.	CCSOBB Survey (x2)
The optional HSC examination and Board Developed Course status for Standard 1 promotes the study of the course and are appropriate for students' abilities and aspirations. This may also encourage more students to continue with mathematics in Stage 6.	Bankstown (CM) Cammeray (CM) CSOArm Dubbo (CM) NSWTF Survey (x1)
Focus Studies integrated in the strands enables more modelling opportunities	Bankstown (CM) BCC Cammeray (CM) CSOArm Katoomba (CM) Nowra (CM) Submission 3 Survey (x120)
The Stage 6 syllabuses have been well organised and presented as four distinct syllabus documents.	CCSOBB Cammeray (CM)

## Key matters and actions

Key matters	Sources	Actions
The course contains too much content for the indicative hours, potentially limiting the scope for modelling applications.	AIS CCSOBB DoE MANSW NSWPC	Content has been reviewed and an overall reduction has been made.
The common Year 11 course would be too difficult for students who have just completed the 5.1 outcomes. Numeracy requirements are not addressed in this course for students who are yet to achieve the ACSF numeracy level 3.	BCC Cammeray (CM) CCSOBB CSOArm DoE MANSW Survey (x30)	Content which enables students to achieve the ACSF numeracy level 3, and which are needed to progress to the Year 12 Mathematics Standard 1 course have been identified and coded throughout the Year 11 Mathematics Standard course.
Focus Studies should be kept as separate topics.	Bankstown (CM) CEParra MANSW Submissions 1, 4, 7, 18, 28 Survey (x24)	Schools have the flexibility to construct their own program arrangement of the application and modelling content.
Common content must be of sufficient quantity to allow scaling between the Mathematics Standard 2 course and the Mathematics Advanced course.	AIS Survey (x4)	Content has been reviewed to ensure that there is sufficient common content for the appropriate assessment.

## 4.6 Assessment

### Summary

The majority of respondents agreed that the school-based assessment requirements provide opportunities for students to develop and demonstrate their learning. Many agreed that the inclusion of exploratory opportunities creates possibilities for types of school-based assessment that are helpful and appropriate. There were some queries about whether the requirement to undertake an assignment or investigation-style task was manageable for teachers, including whether it was valid for this style of task to be completed by students in an unsupervised environment where plagiarism may be an issue.

The majority of respondents noted that clarity is needed regarding the description of a formal examination-style task in the context of mathematics assessment. The majority of respondents also preferred a lower weighting for the assignment or investigation-style task and a higher weighting for the formal written examination-style task.

Most respondents acknowledged the need for a common component in the HSC examinations of adjacent courses but questioned whether there was sufficient common content to achieve this effectively. The majority of respondents preferred reducing the number of objective response questions in the HSC examination.

### Feedback affirming the information on assessment

Feedback	Sources
The school-based assessment requirements are manageable and provide opportunities for students to develop and demonstrate their learning.	CCSOBB Submission 28
The inclusion of exploratory opportunities broadens the possibilities for different types of school-based assessment.	Survey (x15)
The reduction in the number of assessment tasks will provide the opportunity to broaden the scope of tasks and support student wellbeing.	Cammeray (CM) Dubbo (CM) Katoomba (CM) MANSW Nowra (CM) Submission 36 Survey (x8)

Feedback	Sources
The assignment or investigation-style task will provide reliable assessment data and support student wellbeing. There will be the opportunity to explore new types of assessment tasks that will allow students to demonstrate their skills and understanding in other ways.	Bankstown (CM) Bomaderry (SV) CEParra Cherrybrook (SV) Hornsby (SV) Nowra (SV) Parramatta (CM) Port Macquarie (CM) Submission 27 Survey (x2)
The formula sheet should be maintained with appropriate additions and updates in line with the new syllabus.	AIS Bankstown (CM) Cammeray (CM) Nowra (SV) Parramatta (CM) Port Macquarie (CM) Submissions 4, 18, 26
The reasons for the inclusion of common content in the HSC examinations of adjacent courses are understood and accepted as appropriate.	MANSW Submission 36 Survey (x3)

### Key matters and actions

Key matters	Sources	Actions
Common content must be of sufficient quantity between the Mathematics Standard 2 course and the Mathematics Advanced course.	AIS Bankstown (CM) BCC Cammeray (CM) CEParra MANSW NSWPC Parramatta (CM) SCS Submissions 4, 6–7, 11, 21, 27–29, 32, 36 Survey (x13) TAFE NSW	Content has been reviewed to ensure that there is sufficient common content for the appropriate assessment.

Key matters	Sources	Actions
Objective response questions should be retained and reduced in the Standard 1 and 2 HSC examinations.	Bankstown (CM) CEParra CSOArm DoE Dubbo (CM) Katoomba (CM) MANSW Nowra (CM) NSWPC NSWTF Parramatta (CM) Port Macquarie (CM) Submissions 1, 3–5, 27–28, 34 Survey (x33)	Assessment advice and HSC examination specifications will clarify the scope of Mathematics Standard 1 and Standard 2 HSC examinations and how Year 11 content will be examined.  Support materials relating to assessment will be released in Term 1 2017. Examination specifications will be released in Term 3 2017.
Clarity is needed regarding whether Year 11 material will be assessed in the HSC examination.	AIS Bankstown (CM) Cammeray (CM) CCSOBB CEParra Katoomba (CM) MANSW Submissions 1, 3, 5, 11, 18, 28, 33, 36 Survey (x25) TAFE NSW	Assessment advice, including sample assessment schedules and assessment activities, will be available in support materials.

Key matters	Sources	Actions
<p>The weightings and guidance about school-based assessments need reviewing.</p>	<p>AIS Bankstown (CM) BCC CCSOBB CSOArm DoE Katoomba (CM) MANSW NSWTF Nowra (CM) Parramatta (CM) Port Macquarie (CM) SCS Submissions 1, 3–5, 7, 18, 27, 28, 32, 34, 36 Survey (x60) TAFE NSW</p>	<p>The non-examination school-based tasks have been reviewed to ensure a consistent approach across courses. Further advice on school-based assessment activities, including sample assessment schedules and assessment activities will be published as part of the syllabus support materials in 2017.</p> <p>The <i>Assessment and Reporting in Mathematics</i> document will be published in 2017 and will include further information and clarification regarding weightings and assessment.</p>
<p>Clarity is required regarding the description of a formal examination-style task in the context of mathematics assessment.</p>	<p>AIS Bankstown (CM) BCC DoE Katoomba (CM) MANSW NSWTF Parramatta (CM) Survey (x35)</p>	<p>The non-examination school-based tasks have been reviewed to ensure a consistent approach across courses. Further advice on school-based assessment activities, including sample assessment schedules and assessment activities will be published as part of the syllabus support materials in 2017.</p> <p>The <i>Assessment and Reporting in Mathematics</i> document will be published in 2017 and will include further information and clarification regarding weightings and assessment.</p>
<p>More guidance is needed with regard to investigation-style tasks.</p>	<p>Bankstown (CM) BCC Cammeray (CM) CCSOBB CEParra Parramatta (CM) Port Macquarie (CM) Submissions 7, 28, 32, 33, 35, 36 Survey (x18)</p>	<p>Support materials, to be published in 2017, will contain additional advice.</p>



## 4.7 Content

### Summary

The majority of respondents strongly agreed or agreed that the content describes the scope and depth of learning.

Some respondents stated that the Year 11 Mathematics Standard course was not appropriate for Stage 5.1 students. A number of respondents noted that this syllabus was not appropriate for students who had not achieved ACSF level 3 numeracy at the end of Stage 5.

Industry stakeholders noted the importance of the study of Mathematics for all senior students. In particular, they noted the application of mathematics and numeracy skills to workplace and further education contexts.

A significant number of respondents agreed that the inclusion of Networks was appropriate. However, a lack of familiarity with this new content was expressed by some respondents, along with requests for support and resources to be provided.

The majority of survey respondents agreed that the integration of the Focus Studies into strands would allow for a greater number of modelling opportunities.

### Feedback affirming content

Feedback	Sources
The content is well written.	Survey (x15)
The removal of content no longer relevant provides an opportunity for the inclusion of more appropriate content.	Cammeray (CM) Parramatta (CM) Submission 3
The inclusion of Networks is appropriate for a practical topic. The content of this topic is well constructed and written, but will require the development of resources to support teachers.	BCC Cammeray (CM) DoE Dubbo (CM) Submissions 20, 36 Survey (x74) TAFE NSW
The inclusion of Working Mathematically and the associated skill set is appropriate in the Standard course.	CCSOBB CEParra MANSW Submission 18 Survey (x5)

<b>Feedback</b>	<b>Sources</b>
Focus Studies integrated in the strands enables more modelling opportunities.	Bankstown (CM) BCC CSOArm Nowra (CM) Submission 3 Survey (x120)

## Key matters and actions

Key matters	Sources	Actions
There is too much content in the course which may limit opportunities for investigation, exploration and modelling activities.	AIS Bankstown (CM) Cammeray (CM) CCSOBB CEParra DoE Dubbo (CM) MANSW Katoomba (CM) Nowra (CM) Parramatta (CM) SCS Submissions 1, 3, 4, 7, 28, 32, 36–37 Survey (x50)	Content has been reviewed and an overall reduction has been made.
The common Year 11 course would be too difficult for students who have just completed the 5.1 outcomes. Numeracy requirements are not addressed in this course for students who are yet to achieve the ACSF numeracy level 3.	Bankstown (CM) CEParra DoE NSWPC Port Macquarie (CM) SCS Submissions 4, 27, 32, 36 Survey (x68)	Content which enables students to achieve the ACSF numeracy level 3, and which are needed to progress to the Year 12 Mathematics Standard 1 course have been identified and coded throughout the Year 11 Mathematics Standard course.
The common content contained in adjacent courses that may be included in the HSC examinations needs to be identified.	Cammeray (CM) CCSOBB Parramatta (CM) Port Macquarie (CM) Submissions 3, 28, 36 Survey (x15)	Support materials published in 2017 will provide further details on common content.
Some components or phrases within the content are vague or unclear.	CCSOBB Submission 28 Survey (x10)	All content has been reviewed and clarified or amended where appropriate.
Focus Studies should be kept as separate topics.	Bankstown (CM) CEParra MANSW Submissions 1, 4, 7, 18, 28 Survey (x24)	Schools have the flexibility to construct their own program arrangement of the focus study and modelling items.

Key matters	Sources	Actions
Networks should be removed from this course.	Bankstown (CM) CCSOBB CEParra CSOArm MANSW SCS Submissions 3, 4, 7, 25, 28, 36, 37 Survey (x26)	The Networks content has been reviewed to ensure that it is appropriate for the Mathematics Standard course. More clarification on the content and its applications will be provided in the support materials, to be published in 2017.

## 4.8 Learning across the curriculum

### Summary

The majority of respondents acknowledged the challenge of including authentic and appropriate content for students to develop their understanding and appreciation of Aboriginal and Torres Strait Islander histories and cultures.

Aboriginal Education stakeholders were very supportive of the inclusion of authentic Aboriginal and Torres Strait Islander histories and cultures.

### Feedback affirming Learning across the curriculum

Feedback	Sources
The inclusion of content that develops an understanding and appreciation of Aboriginal and Torres Strait Islander histories and cultures is positive.	Aboriginal Ed Katoomba (CM) Survey (x6)
The challenge of incorporating authentic and appropriate content is acknowledged and understood.	Aboriginal Ed Katoomba (CM) Survey (x8)

### Key matters and actions

Key matters	Sources	Actions
The authenticity of content relating to the Learning across the curriculum content is not clear.	NSWPC Survey (x17)	Support materials and other resources, to be published in 2017, will provide further clarification.
More content, that develops an understanding and appreciation of Aboriginal and Torres Strait Islander histories and cultures, should be included.	AIS CEParra Katoomba (CM) Survey (x7)	Further consultation with specialists has taken place to ensure appropriate inclusion of authentic opportunities.

## 4.9 Diversity of learners, including Life Skills

### Summary

The majority of respondents strongly agreed or agreed that the alignment of the course structure and the Mathematics Life Skills course outcomes and content is appropriate. Respondents noted that the relationship between the course objectives and the Mathematics Life Skills course outcomes is appropriate and that the Mathematics Life Skills course outcomes and content provide scope for developing programs for students with special education needs. The majority of respondents agreed that the Mathematics Life Skills course outcomes provide the basis for assessment and reporting of student achievement.

Feedback was received in relation to the role of the K–10 Curriculum Framework in the development of Stage 6 syllabuses, the inclusion of Australian Curriculum content within Mathematics Life Skills, reference to the course completion criteria and use of the terminology ‘special education’ in the syllabus. This feedback was not supported by the wide range of respondents.

Some respondents questioned whether the syllabus meets the needs of the full diversity of learners.

### Feedback about the diversity of learners, including Life Skills

Feedback	Sources
The content of the Year 12 Mathematics Standard 1 course aligns well with the Mathematics Life Skills course and will better support the integration of Mathematics Life Skills students into senior classes. This alignment could take place from Year 11.	AASE AIS CEDOW CEParra DoE MANSW NSWTF Special Ed Submission 9 Survey (x6)
The Mathematics Life Skills course structure, outcomes and content are appropriate as well as challenging. This helps bridge the gap between the Mathematics Life Skills course and the Mathematics Standard 1 course.	CSOArm DoE Special Ed Submissions 7, 9, 28 Survey (x6)
The strand and topic focus statements reference applicability of skills to real-life contexts and flexibility to choose outcomes and content.	DoE NSWTF
The table of related outcomes is a useful representation of the alignment between the Mathematics Life Skills course and the Mathematics Standard 1 course.	CEDOW Special Ed

## Key matters and actions

Key matters	Sources	Actions
The common Year 11 course would be too difficult for students who have just completed the 5.1 outcomes. Numeracy requirements are not addressed in this course for students who are yet to achieve the ACSF numeracy level 3.	BCC Cammeray (CM) Parramatta (CM) Port Macquarie (CM) Special Ed Survey (x20)	Content has been identified and coded throughout the Year 11 Mathematics Standard course to indicate content that enables students to develop their numeracy skills, and content needed to progress to the Year 12 Mathematics Standard 1 course.  Opportunities for students to develop numeracy skills have been embedded in both the Mathematics Standard 1 and Standard 2 courses.
<b>Diversity of learners</b> The statements should be clearer in relation to the options students have in accessing the curriculum and the possibility of students having more than one of the characteristics identified.	AIS DoE	The advice in relation to the Diversity of learners has been reviewed and amended to ensure clarity.
<b>Alignment</b> The progression from the Years 7–10 Mathematics Life Skills to the Mathematics Life Skills Stage 6 course needs to be strengthened.  Mathematics Life Skills content should be embedded in and displayed side by side with the relevant content from Standard.	AASE Parramatta (CM) Special Ed Submission 9 Survey (x1)	Mathematics Life Skills outcomes and content have been reviewed to ensure appropriate progression from Years 7–10 Mathematics Life Skills.  The syllabuses will be published as e-syllabuses allowing for easy navigation between courses.
The relationship between the regular courses and Mathematics Life Skills courses requires clarification.	AASE AIS DoE	The Mathematics Standard rationale and learning pathways diagram have been reviewed to ensure that they appropriately reflect the place of Mathematics Life Skills within the Stage 6 curriculum.

Key matters	Sources	Actions
<p><b>Outcomes and content</b> There are fewer outcomes, which are very broad and may be difficult to measure while the amount of content in the Mathematics Life Skills course has increased and is challenging and complex.</p>	<p>AASE AIS BCC Cammeray (CM) CSSOP DoE NSWTF Nowra (CM) Parramatta (CM) Survey (x9)</p>	<p>The number of Mathematics Life Skills outcomes as well as the scope of outcomes and content have been reviewed to ensure that they cater for the range of students for whom Life Skills is appropriate. Outcomes and content remain optional, and teachers select the most appropriate outcomes and content for their students.</p>
<p>Mathematics Life Skills outcomes could be better aligned with the regular course.</p>	<p>AIS MANSW Special Ed Submission 9 Survey (x12)</p>	<p>The Mathematics Life Skills content has been reviewed for alignment, appropriateness and relevance.</p>
<p><b>Information and advice</b> Advice is needed in the regular syllabuses regarding eligibility, collaborative planning and accessing a combination of the Mathematics Life Skills course and the Mathematics Standard 1 course.</p>	<p>AIS CEDOW DoE NSWTF</p>	<p>Advice on the NESAs website regarding planning, programming and assessment will be reviewed.</p>
<p><b>Assessment and reporting</b> More information regarding the assessment and reporting of Mathematics Life Skills would be useful. Further advice is needed in relation to determining if a student has achieved an outcome. Reference should be made to the Disability Standards, collaborative planning and Disability Provisions.</p>	<p>AIS NSWTF Special Ed Submission 9 Survey (x3)</p>	<p>Assessment and reporting advice in relation to students with special education needs, including students undertaking Life Skills courses, is being reviewed.</p>
<p><b>Support materials</b> With teachers having the option to select Mathematics Life Skills outcomes and content, further advice and direction is needed to guide teachers in developing rigorous learning experiences. Sample units for integrated classes would be helpful.</p>	<p>AIS CEDOW DoE Special Ed Submission 9</p>	<p>Support materials and sample units of work will be developed to illustrate appropriate and meaningful teaching, learning and assessment opportunities for students.</p>



## 4.10 Other comments

### Summary

Many of the respondents used this section as an opportunity to ask questions unrelated to this consultation report.

### Feedback affirming the draft syllabus

Feedback	Sources
The name change from Mathematics General to Mathematics Standard was well received.	AIS Survey (x73)
The glossary is a welcome addition to the syllabus for both teachers and students.	AIS DoE Survey (x39)

### Key matters raised and actions

Key matters raised	Sources	Actions
Accessible professional development opportunities and support materials are needed.	AIS Bankstown (CM) Cammeray (CM) Katoomba (CM) Nowra (CM)	Support materials and other resources will be published in 2017.
The technology to be used in conjunction with the syllabus and in the HSC examination needs clarification.	MANSW	The technology available for use in syllabus delivery and in HSC examinations will be clarified in the support materials, to be published in 2017.

## 4.11 Student voice

Targeted consultation meetings with students were held to gather feedback about Mathematics Standard. These meetings focused on discussion of courses within the Mathematics learning area, including:

- topic choices
- content
- assessment
- future pathways.

### Summary

Student comments focused on assessment and content. The majority of feedback indicated a positive approach to the course in general but key matters arose related to the number of hours devoted to it.

### Feedback from student voice on Mathematics Standard

Feedback	Sources
The course contains a lot of content and as a result it is fast paced. Topics cannot always be studied in depth.	Bomaderry (SV) Hornsby (SV) Nowra (SV)
Financial Mathematics should be studied in more depth as it is relevant to real life.	Bomaderry (SV) Nowra (SV)
Examination-based assessments are very appropriate and suitable for mathematics.	Hornsby (SV)
Assignments should be used as assessments as they are fair and provide opportunities to demonstrate the achievement of outcomes without stress.	Bomaderry (SV) Nowra (SV)
The glossary and the formula sheet are good ideas and are very useful.	Hornsby (SV) Nowra (SV)
The incorporation and use of technology is considered valuable and enjoyable.	Bomaderry (SV) Nowra (SV)

## 5 Quantitative analysis of survey responses

Note: Due to rounding, some percentages may not total 100%.

Survey item	Number of responses	Strongly agree	Agree	Disagree	Strongly disagree
<b>Rationale</b>					
1. The rationale describes the nature and purpose of the course in the curriculum.	203	18%	70%	11%	1%
<b>Aim</b>					
2. The aim provides a succinct statement of the overall purpose of the course.	201	16%	70%	11%	2%
<b>Objectives</b>					
3. The objectives define the intended learning and the knowledge, understanding, skills, values and attitudes to be developed through study of the course.	194	15%	73%	11%	1%
<b>Outcomes</b>					
4. The outcomes and content describe what students are expected to achieve in relation to what they know, understand and can do from studying the course.	183	14%	66%	17%	3%
5. The outcomes provide an appropriate continuum of learning from Stage 5 to Stage 6.	190	11%	56%	23%	10%
<b>Course structure</b>					
6. The course structure and requirements are clear, manageable and appropriate.	185	6%	38%	39%	16%
7. The course structure will promote study of the course most appropriate for students' abilities and aspirations.	182	7%	34%	42%	18%

Survey item	Number of responses	Strongly agree	Agree	Disagree	Strongly disagree
<b>School-based assessment</b>					
8. The school-based assessment requirements are manageable.	179	10%	47%	27%	17%
9. The school-based assessment requirements provide opportunities for students to develop and demonstrate their learning.	178	11%	56%	25%	7%
10. The recommended weighting of the non-examination school-based task is appropriate.	174	5%	42%	31%	22%
11. The inclusion of Exploratory opportunities (E) as possibilities for types of school-based assessment is appropriate.	169	9%	53%	23%	15%
<b>HSC assessment</b>					
12. Please comment on the HSC examination specifications.	127	8%	41%	38%	13%
<b>Content</b>					
13. The content describes the scope and depth of learning.	158	6%	65%	22%	6%
14. The overlap between Mathematics General 1 and Mathematics General 2 HSC courses is appropriate.	159	6%	67%	18%	9%
15. The overlap between the Mathematics General 2 and Mathematics courses is appropriate.	160	4%	46%	36%	15%
16. Opportunities for a greater depth of study have been achieved through the reduction of content.	163	9%	23%	41%	27%

Survey item	Number of responses	Strongly agree	Agree	Disagree	Strongly disagree
<b>Learning across the curriculum</b> 17. The Learning across the curriculum, including opportunities for students to develop their understanding and appreciation of Aboriginal and Torres Strait Islander histories and cultures, is authentic and appropriate.	151	6%	48%	35%	11%
<b>Strands</b> 18. The integration of the Focus Studies (F) into strands will allow for a greater number of modelling opportunities.	164	16%	47%	26%	11%
19. The inclusion of additional Modelling opportunities (M) in addition to the Focus Studies (F) is appropriate.	159	9%	64%	18%	9%
20. The inclusion of Networks into the Mathematics General courses provides an additional real world relevant application of mathematics, and is appropriate.	156	4%	43%	29%	24%
21. The inclusion of Working Mathematically and the associated skill set is appropriate in the Mathematics General course.	163	14%	71%	12%	3%
<b>Diversity of learners</b> 22. The syllabus meets the needs of the diversity of learners.	159	2%	43%	31%	23%
<b>Life Skills</b> 23. The alignment of the course structure and the Life Skills outcomes and content is appropriate	140	4%	74%	17%	5%

<b>Survey item</b>	<b>Number of responses</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
24. The relationship between the course objectives and the Life Skills outcomes is appropriate.	135	4%	79%	14%	3%
25. The Life Skills outcomes and content provide scope for developing programs for students with special education needs.	133	5%	80%	11%	3%
26. The Life Skills outcomes provide the basis for assessment and reporting student achievement.	133	5%	80%	13%	3%

## 6 Respondents

### 6.1 Consultation meetings

#### Board Curriculum Committee consultation meeting at NESAs on 17 August 2016 (code: BCC)

11 members

Name	Organisation
Mr John Mack	Chair
Mr Peter Brown	NSW/Territories Committee of Chairs of Academic Boards/Senates
Mr John Cairns	Australian Association of Special Education NSW Chapter
Ms Ruth Glasgow	NSW Department of Education
Mr Terrence Moriarty	NSW Teachers Federation
Ms Lynne Openshaw	Professional Teachers' Council NSW
Mr John Raftery	Independent Education Union NSW/ACT
Ms Cathie Renfrew	Council of Catholic School Parents NSW
Ms Praneetha Singh	Association of Independent Schools of NSW
Ms Yve Weinmann	Federation of Parents and Citizens Associations of NSW
Ms Amanda Wilson	Catholic Education Commission NSW

#### Face-to-face consultation meetings (code: CM)

368 attendees

Location	Date (2016)	Number of attendees
Dubbo	28 July	14
Katoomba	3 August	11
Port Macquarie	9 August	24
Bankstown	10 August	93
Parramatta	11 August	112
Cammeray	18 August	83
Nowra	23 August	31

## Targeted consultation meetings

### **Aboriginal Education** (code: *Aboriginal Ed*)

11 attendees

Location	Date (2016)	Number of attendees
Sydney	26 July	4
Sydney	28 July	7

### **Special Education** (code: *Special Ed*)

61 attendees

Location	Date (2016)	Number of attendees
Sydney	27 July	4
Sydney	11 August	19
Sydney	16 August	21
Newcastle	22 August	17

### **Industry** (code: *Industry*)

28 attendees

Location	Date (2016)	Number of attendees
Sydney	11 August	28

### **Student voice meetings** (code: *SV*)

36 attendees

Location	Date (2016)	Number of attendees
Cherrybrook	26 July	10
Hornsby	26 July	10
Nowra	23 August	7
Bomaderry	23 August	9



### Consultation meeting attendees

Attendees	Number of attendees
Academic	4
Parent	1
Pre-service teacher	6
School executive	65
Teacher	239
Student	0
Other	9

Attendees identified as	Number of attendees
An Aboriginal person	1
A Torres Strait Islander person	0
An Aboriginal and Torres Strait Islander person	0
Not an Aboriginal and/or Torres Strait Islander person	323

Sector	Number of attendees
Government	178
Catholic	66
Independent	105
Non-school based	19

Area of NSW	Number of attendees
Metropolitan	288
Regional	80

*Note: The data listed above was gathered from meeting attendance registrations. It may not include all data for those who attended without first registering. Some data may not reflect the total number of attendees.*

## 6.2 Online survey respondents

246 responses

<b>Respondents</b>	<b>Number of respondents</b>
Academic	4
Parent	5
Pre-service teacher	0
Principal	1
School executive	37
School faculty/department	31
Teacher	181
Student	2
Other	5

<b>Respondents identified as</b>	<b>Number of respondents</b>
An Aboriginal person	3
A Torres Strait Islander person	0
An Aboriginal and Torres Strait Islander person	0
Not an Aboriginal and/or Torres Strait Islander person	243

<b>Sector</b>	<b>Number of respondents</b>
Government	146
Catholic	32
Independent	64
Non-school based	4

<b>Area of NSW</b>	<b>Number of respondents</b>
Metropolitan	151
Regional	95

<b>Number of people contributing to the survey</b>	<b>Number of respondents</b>
1	182
2–5	35
6 or more	29

### 6.3 Written submissions

<b>Organisations, groups and individuals</b>	<b>Code</b>
Association of Heads of Independent Schools of Australia	AHISA
Association of Independent Schools of NSW	AIS
Australian Association of Special Education	AASE
Australian Christian Lobby	ACL
Catholic Schools Office Armidale	CSOArm
Community of Catholic Schools Diocese of Broken Bay	CCSOBB
Catholic Education Diocese of Parramatta	CEParra
Catholic Education Diocese of Wollongong	CEDOW
Family Voice Australia	FVA
Mathematical Association of NSW	MANSW
NSW Department of Education	DoE
NSW Parents' Council	NSWPC
NSW Teachers Federation	NSWTF
Statistical Society of Australia Inc	SSAI
Sydney Catholic Schools	SCS
TAFE NSW	TAFE NSW
Canterbury Girls High School	Submission 1
Dubbo School of Distance Education	Submission 2
Meriden School, Strathfield	Submission 3
Muirfield High School	Submission 4
Pittwater House	Submission 5
SCEGGS Redlands	Submission 6
SHORE School	Submission 7
Southern Cross School of Distance Education	Submission 8
St Ignatius College, Riverview	Submission 9
Sydney Grammar School	Submission 10
Individual respondent	Submission 11
Individual respondent	Submission 12
Individual respondent	Submission 13

<b>Organisations, groups and individuals</b>	<b>Code</b>
Individual respondent	Submission 14
Individual respondent	Submission 15
Individual respondent	Submission 16
Individual respondent	Submission 17
Individual respondent	Submission 18
Individual respondent	Submission 19
Individual respondent	Submission 20
Individual respondent	Submission 21
Individual respondent	Submission 22
Individual respondent	Submission 23
Individual respondent	Submission 24
Individual respondent	Submission 25
Individual respondent	Submission 26
Individual respondent	Submission 27
Individual respondent	Submission 28
Individual respondent	Submission 29
Individual respondent	Submission 30
Individual respondent	Submission 31
Individual respondent	Submission 32
Individual respondent	Submission 33
Individual respondent	Submission 34
Individual respondent	Submission 35
Individual respondent	Submission 36
Individual respondent	Submission 37