



**Mathematics**  
**K–10 Draft Syllabus Version 2**

**Consultation Report**

May 2012

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# 1 Background

The Board of Studies began its syllabus development process for K–10 Mathematics following state and territory education ministers' endorsement of the Australian curriculum content descriptions for Foundation (Kindergarten in NSW) to Year 10 English, Mathematics, Science and History in December 2010.

The *Mathematics K–10 Draft Syllabus* includes the agreed Australian curriculum content and achievement standards.

In Terms 2 and 3 of 2011, the Board of Studies conducted widespread consultation to engage stakeholders and to seek their feedback on the draft syllabus. Feedback was gathered through teacher meetings, a Board Curriculum Committee meeting, an online survey, and written submissions from individuals, groups and organisations. A consultation report containing a summary of findings is published on the Board of Studies website.

The key matters emerging from consultation in 2011 were the focus of revisions to the draft syllabus. These key matters, and the actions taken to resolve them, are listed below. The revision work resulted in a second version of the draft syllabus, which was released for a new round of consultation in 2012. The *Mathematics K–10 Draft Syllabus Version 2* was presented in an online interactive format for the first time. The scope of consultation activities is included in section 2 of this report.

The *Mathematics K–10 Draft Syllabus Version 2* represents the following key changes:

- additional outcomes have been included where appropriate to increase the overall clarity and specificity of the outcomes
- the continuum of learning has been amended to reflect the changes in the outcomes from Early Stage 1 to Stage 5
- the amount of content in some stages, particularly Stage 3, has been reviewed and reduced where possible and appropriate
- the Background Information and Language sections have been updated
- one additional component of Working Mathematically, 'Communicating', has been included
- Life Skills outcomes related to Stage 4 and Stage 5 outcomes have been added to each substrand, and a table showing the relationship between Life Skills outcomes and Stage 4 and Stage 5 outcomes has been included.

## **2 Consultation Round 2**

Consultation on the *Mathematics K–10 Draft Syllabus Version 2* was conducted from 13 February to 30 April 2012.

The consultation program consisted of:

- a Board Curriculum Committee consultation meeting on 27 March
- afternoon consultation meetings in:
  - Moree on 8 March
  - Camden on 13 March
  - Coffs Harbour on 15 March
  - Kingsgrove on 19 March
  - Bega on 21 March
- special education focus group meetings in:
  - Sydney (at the Board of Studies) on 9 March
  - North Rocks on 14 March
- Kindergarten to Year 6 focus group meetings in:
  - Armidale on 1 March
  - Ryde on 20 March
- an online survey on the Board of Studies website for the period 13 February to 30 April 2012, which was completed by 37 respondents.

Professional associations and schooling sectors conducted a range of activities during the consultation period to inform feedback to the Board. Various organisations and some individual respondents provided their feedback in written submissions rather than online survey responses.

### 3 Summary of respondents

#### Consultation meetings

One Board Curriculum Committee (BCC) meeting, five K–10 teacher meetings, two targeted K–6 teacher focus group meetings and two special education meetings.

BCC members	10	K–10 teachers	149	K–6 teachers	22
Special education	31				

#### Online survey respondents

37 online survey responses

##### Years of schooling

Kindergarten to Year 6	19	Years 7 to 10	18
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##### Sector

Catholic	3	Government	22	Independent	3
Non-school based	2	Parent body	0	University	0

##### Area of NSW

Metropolitan	20	Regional	10
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##### Number of people contributing to the response

1	15	2–4	4	5 or more	11
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## 4 Executive summary

The *Mathematics K–10 Draft Syllabus Version 2 Consultation Report* provides a description of the consultation process and a summary and analysis of the feedback received. The summary confirms the general directions of the draft syllabus, as well as key matters raised and the amendments that have been made in response.

The consultation report presents data and findings gathered through a Board Curriculum Committee (BCC) meeting, nine consultation meetings, 37 survey responses and 10 written submissions.

The *Mathematics K–10 Draft Syllabus Version 2* was received positively by teachers, other key stakeholders, and the broader community. The great majority of respondents favoured the stage-by-stage approach, which recognises that students learn in different ways and at different rates. The embedding of Working Mathematically into the content was supported and the additional Working Mathematically component, ‘Communicating’, was seen as a positive inclusion for the teaching and learning of mathematics.

There was comment from the Board Curriculum Committee consultation meeting and from the teacher consultation meetings, as well as from written submissions, that the consultation process and the incorporation of feedback from the first round of consultation were appreciated. There was strong support for the actions undertaken following the first round, including:

- the review of content to reduce the amount of content where possible and appropriate
- the inclusion of Australian curriculum content description codes
- the increased specificity of the outcomes to clarify learning expectations, assessment and reporting.

The following table provides a summary of the key matters raised in the second round of consultation and the actions taken to address them.

Key matters raised	Actions
<p><b>Continuum</b></p> <p>The syllabus should include a K–10 continuum of ‘key ideas’, as in the current K–10 mathematics syllabus.</p>	<p>An overriding objective has been to reduce inconsistencies between the four new K–10 syllabuses. For this reason, a continuum of ‘key ideas’ has not been included in the syllabus, but it will be provided in support materials.</p>
<p><b>Support materials</b></p> <p>Appropriate forms and levels of support are needed for teachers to implement the new <i>Mathematics K–10 Syllabus</i>.</p>	<p>Initial support materials provided by the Board of Studies will assist teachers in understanding the syllabus and planning for its implementation. Support materials will focus on content new to K–10 mathematics or new to a particular stage of the curriculum.</p>
<p><b>Students with special education needs</b></p> <p>Clarification is required regarding course options for students with special education needs.</p> <p>Years 7–10 Life Skills outcomes and content need to be reviewed and amended where necessary to ensure their appropriateness.</p>	<p>The advice in the syllabus regarding course options for students with special education needs has been clarified.</p> <p>Life Skills outcomes and content have been reviewed for clarity and appropriateness and have been amended where necessary.</p>



## 5 Analysis

### 5.1 Rationale

#### Summary

Overall, feedback on the rationale of the *Mathematics K–10 Draft Syllabus Version 2* was positive. The majority of survey respondents indicated that the rationale was comprehensive, relevant and informative. The feedback confirmed that the rationale described the nature of mathematics in broad terms and explained the place and purpose of the subject in the curriculum.

Several survey respondents indicated that the rationale was too wordy and would be improved by including specific links to other learning areas, such as music.

#### Feedback affirming the rationale

Feedback	Sources
<p>The rationale is easy to read and relevant. It represents a thorough description of the role and value of mathematics.</p> <p>The acknowledgement of the need for students to develop self-confidence as learners of mathematics is positive.</p> <p>The emphasis on reasoning, creativity, originality, challenge, inquiry and active participation is appreciated.</p> <p>The reference to lifelong learning is positive.</p>	<p>AIS IEU (K–6) IEU (7–10) Survey x 8 Submission 5 Submission 6</p> <p>CEOSYD Survey x 2</p>

#### Matters raised and actions

Matters raised	Sources	Actions
<p>The rationale is wordy and will confuse parents. It needs to be reviewed in order to increase its clarity.</p> <p>The rationale could be enhanced by:</p> <ul style="list-style-type: none"> <li>emphasising the relevance of mathematics in everyday life and across learning areas</li> <li>promoting mathematics as a contemporary, creative and achievable subject</li> <li>identifying the potential to learn, teach and use mathematics through inquiry and investigation.</li> </ul>	<p>Camden (CM) Survey x 1 Submission 5 Submission 6 Submission 7 Submission 8</p> <p>CEOCG Survey x 1 Submission 8</p>	<p>The rationale has been reviewed and amended where possible and appropriate.</p>

## 5.2 The place of the *Mathematics K–10 Syllabus* in the K–12 curriculum

### Summary

This section of the *Mathematics K–10 Draft Syllabus Version 2* was received positively by most respondents, who indicated that the diagram shows clearly the possible pathways of learning in mathematics. Some respondents suggested that the diagram needs to be amended in order to clarify the possible pathways of mathematics learning from Stage 5 to Stage 6.

### Feedback affirming the place of the *Mathematics K–10 Syllabus* in the K–12 curriculum

Feedback	Sources
The diagram is a good representation of the place of the <i>Mathematics K–10 Syllabus</i> in the K–12 mathematics curriculum.	Kingsgrove (CM) AIS
The reference to prior-to-school learning is particularly appreciated by primary teachers.	AIS Survey x 1

### Matters raised and actions

Matters raised	Sources	Actions
The multiple endpoints for students studying Stage 5 mathematics need to be emphasised, and the relationships between Stages 5.1, 5.2 and 5.3 need to be clarified.	Kingsgrove (CM) AIS CEOW (7–10) Submission 8	The description of endpoints and the relationships between the substages in Stage 5 have been reviewed and amended where appropriate for clarity and emphasis.
The diagram should be changed to indicate the hierarchical structure of mathematics in Stage 5.	AIS	The diagram shows a continuum of learning in Stage 5 from Stage 5.1 through 5.2 to 5.3.
The diagram should reflect the new courses for Stage 6 Mathematics General accurately, including the common Preliminary course.	AIS MANSW	The diagram has been updated to accurately reflect the new Stage 6 Mathematics General syllabus.
The word ‘competencies’ should replace ‘abilities’ in ‘Students exhibit a wide range of mathematical skills, abilities ...’.	AIS	This statement has been reviewed and the word ‘abilities’ has been replaced with ‘levels of competence’.

### 5.3 Aim

#### Summary

There was strong agreement among survey respondents that the aim provides an appropriate statement of the overall purpose of the syllabus, particularly as it relates to student development. There was strong support for the inclusion of the additional Australian curriculum aim, which describes the nature of the skills and understanding to be gained through the study of mathematics.

Some feedback indicated that the aim should make greater reference to real-world applications of mathematics.

#### Feedback affirming the aim

Feedback	Sources
The aim provides a relevant and sufficiently detailed statement of the appropriateness of the syllabus for student development and direction in mathematics.	IEU (K–6) IEU (7–10) Survey x 8 Submission 5
The focus on problem solving is appreciated.	AIS
The inclusion of the additional ACARA aim is positive.	CEOSYD CEOW (7–10)

#### Matters raised and actions

Matters raised	Sources	Actions
The aim should make relevant links to the real world and to other disciplines by including examples of how mathematical concepts and skills can be provided in contexts beyond the mathematics classroom.	CEOCG Survey x 1	Relevant links to the real world are included in the rationale. The purpose of the aim is to provide a succinct statement of the overall purpose of the syllabus and to indicate the general educational benefits for students from programs based on the syllabus.
‘Mathematical processes’, rather than just ‘processes’, should be used for clarification in the second dot point of the syllabus aim.	Submission 5	The wording of the aim has been reviewed and ‘mathematical’ has been added as recommended.
There should be greater focus on student engagement and fun in the aim, rather than on mathematics as an ‘enjoyable discipline to study’.	Submission 8	The syllabus objectives address this aspect appropriately and sufficiently through the values and attitudes objectives.

## 5.4 Objectives

### Summary

There was strong support for the syllabus objectives in the feedback from survey respondents. The feedback confirmed that the objectives define, in broad terms, the knowledge, skills, understanding, values and attitudes to be developed through the study of mathematics.

Some feedback recommended that the table of objectives and outcomes in the syllabus should reflect the K–10 continuum of learning, so as to demonstrate student progression.

### Feedback affirming the objectives

Feedback	Sources
The objectives are usable, relevant and sufficiently detailed. They provide a broad, but clear and concise, description of the mathematics to be addressed in the syllabus.	IEU (K–6) IEU (7–10) Survey x 7 Submission 5
The values and attitudes reference to developing and demonstrating ‘perseverance in undertaking mathematical challenges’ is excellent.	Submission 6

### Matters raised and actions

Matters raised	Sources	Actions
The word ‘inquiry’ should be included in the objectives, as in the current syllabus.	AIS	The word ‘inquiry’ has been included in the Working Mathematically objective.
The use of verbs should be strengthened to highlight the development of understanding and application.	AIS	The objectives have been reviewed and amended in order to emphasise further the development of understanding and application.
The Measurement and Geometry objective should make reference to length, mass, area, and volume and capacity.	AIS	The Measurement and Geometry objective has been reviewed and amended to encompass the range of measures addressed in the syllabus.
The heading ‘Knowledge, skills and understanding’ would be more appropriate than the current heading ‘Knowledge, understanding and skills’.	Submission 6	The heading ‘Knowledge, skills and understanding’ has replaced ‘Knowledge, understanding and skills’ in the new syllabus.
The objectives for the three content strands should be positioned under a heading of ‘Knowledge and skills’ and the Working Mathematically objective should be separate.	Submission 6	The current representation of the objectives in the draft syllabus was strongly supported at consultation.
The objectives should link more closely and specifically to the aim.	CEO CG	The objectives have been reviewed in terms of focus and consistency with other elements of the syllabus and have been amended where appropriate.

## 5.5 Outcomes

### Summary

Feedback indicated support for the prominence of the Working Mathematically outcomes, which is designed to result in these outcomes being more explicit in teaching and assessment. The inclusion of additional outcomes to align with each substrand in each stage of the curriculum, and to increase clarity and specificity, was supported. Feedback confirmed that this key change should strengthen assessment and reporting practices in schools. There was support for coding the outcomes with reference to the relevant stage and strand, in order to obtain greater consistency in outcomes coding across the four Phase 1 learning areas (English, Mathematics, Science and History). Some respondents commented that the outcomes follow a logical and appropriate sequence.

It was also suggested in the feedback that some further review of the outcomes is needed in order to increase their internal consistency.

### Feedback affirming the outcomes

Feedback	Sources
<p>The breadth of the outcomes has been reduced and there is now greater clarity for teaching and learning.</p>	<p>Bega (CM) Camden (CM) Coffs Harbour (CM) Kingsgrove (CM) AIS DEC Survey x 23 Submission 6 Submission 7</p>
<p>The increased specificity of the outcomes will assist in the assessment and reporting process.</p>	<p>Bega (CM) Camden (CM) Coffs Harbour (CM) Kingsgrove (CM) CECPD CEOSYD CEOW (K–6) DEC IEU (K–6) IEU (7–10) Survey x 23</p>
<p>The prominence of the Working Mathematically outcomes has strengthened the syllabus.</p>	<p>BCC Bega (CM) Camden (CM) Coffs Harbour (CM) Kingsgrove (CM) Armidale (K–6 CM) Survey x 1 Submission 7 Submission 8</p>

**Matters raised and actions**

Matters raised	Sources	Actions
<p>The outcomes do not provide sufficient detail for teaching and learning or for assessment.</p>	<p>MANSW Survey x 14</p>	<p>The content and associated outcomes together provide clarity regarding the breadth and depth of study intended.</p>
<p>An increase in the number of outcomes and some rewording are needed for specificity.</p>	<p>MANSW</p>	<p>The outcomes have been reviewed and some rewording has taken place to increase specificity, particularly in 2D Space, 3D Space, and Data.</p>
<p>Some outcomes need to be reviewed to ensure that they are appropriately aligned with the content.</p>	<p>CEOOG CEOW (7–10) MANSW Submission 8</p>	<p>The outcomes have been mapped and reviewed for appropriate alignment with the content.</p>
<p>The concepts of ‘Communicating’, ‘Problem Solving’ and ‘Reasoning’ in mathematics are not clearly identified in the associated Working Mathematically outcomes.</p>	<p>BCC MANSW</p>	<p>The outcomes for ‘Communicating’, ‘Problem Solving’ and ‘Reasoning’ have been reviewed and are seen as appropriate for the ‘Communicating’, ‘Problem Solving’ and ‘Reasoning’ components of Working Mathematically.</p>
<p>The words ‘informal’ and ‘using appropriate terminology’ in the outcomes need to be used more consistently.</p>	<p>Camden (CM)</p>	<p>The outcomes have been reviewed for consistency of wording and have been amended where appropriate.</p>
<p>The table of outcomes should reflect the continuum of learning in each strand through the appropriate alignment of outcomes and the appropriate labelling of the strands.</p>	<p>Camden (CM) CEOOG Submission 6</p>	<p>The continuum of learning table has been moved to the Outcomes section.</p>
<p>The coding of the outcomes is confusing.</p>	<p>BCC Camden (CM) Coffs Harbour (CM) Moree (CM) Armidale (K–6 CM) AIS MANSW TF Survey x 2</p>	<p>A clear explanation of the outcome codes has been developed for inclusion in the syllabus.</p>
<p>The outcomes need to be reviewed for consistency.</p>	<p>AIS</p>	<p>The outcomes have been reviewed for consistency and have been amended where appropriate.</p>

## 5.6 Content

### Summary

Overall, respondents endorsed the content of the draft syllabus. Feedback indicated that the content was appropriately structured, was sequenced according to the needs and capabilities of students, and made clear what students should learn in mathematics.

The majority of feedback from consultation meetings and written submissions supported the level of detail in the content. Other feedback indicated that the integration of the Working Mathematically outcomes and content would enhance teaching and learning. There was also a high level of support for the Background Information and Language sections associated with the content for each of the syllabus strands.

Respondents commented that the sequence of the Australian curriculum content descriptions has resulted in an increase in the amount of content in some stages of the draft syllabus. However, there was also acknowledgement of the work that had been done to reduce the amount of content where possible and appropriate. Respondents indicated that, while they expected the syllabus to provide clear direction and guidance, various support materials would be of assistance to teachers. The feedback also indicated that further clarification around learning across the curriculum areas is needed.

### Feedback affirming the content

Feedback	Sources
<p>The organisation of the content under the Australian curriculum strands is positive.</p> <p>The strand overviews provide an excellent summary of, and rationale for, the knowledge, skills and understanding to be developed. The arrangement of the K–6 content into the current NSW K–6 strands, together with the newly introduced Angles strand, is positive.</p>	<p>Moree (CM) CECPD CEOW (K–6) CEOW (7–10) IEU (K–6) IEU (7–10) Survey x 26 Submission 3</p>
<p>The references to ‘inclusivity’ and ‘classification’ within the Measurement and Geometry statements are appreciated.</p> <p>The Statistics and Probability statement is well explained and easy to follow.</p>	<p>AIS</p>
<p>The syllabus content is rigorous, explicit and clear. In K–6, the content arranged using the two-part approach to strands is well sequenced.</p> <p>The pacing of the syllabus material appears to be appropriate, and higher-order thinking is encouraged.</p>	<p>Bega (CM) Camden (CM) Coffs Harbour (CM) Kingsgrove (CM) Armidale (K–6 CM) CEOW (K–6) IEU (K–6) Survey x 15 Submission 6 Submission 7 Submission 8</p>

Feedback	Sources
<p>The placement of the Working Mathematically outcomes with the content encourages an integrated approach to teaching and learning.</p> <p>The additional component, ‘Communicating’, in Working Mathematically is a welcome inclusion and is easily identifiable through the use of words such as ‘record’, ‘describe’, ‘discuss’ and ‘explain’.</p>	<p>BCC Bega (CM) Camden (CM) Coffs Harbour (CM) Kingsgrove (CM) Armidale (K–6 CM) AIS CEOSYD CEOW (K–6) CEOW (7–10) IEU (K–6) IEU (7–10) MANSW TF Survey x 30 Submission 7 Submission 8</p>
<p>The re-sequencing and reorganisation of some sections of the K–6 content, particularly in the Fractions and Decimals, 2D Space, and 3D Space substrands, is supported.</p> <p>The level of detail in the Stage 3 content for Fractions and Decimals, the Cartesian plane, and the order of operations is appropriate.</p>	<p>Camden (CM) Coffs Harbour (CM) Kingsgrove (CM) Moree (CM) Armidale (K–6 CM) CECPD Survey x 2 Submission 7</p>
<p>The reference to mental computation within Number and Algebra is positive.</p> <p>The variety in the Years 7–10 content, and its arrangement in strands and substrands, is supported.</p> <p>The retention of the current Stage 5 content structure (ie in Stages 5.1, 5.2 and 5.3) is supported.</p>	<p>AIS  Bega (CM) Kingsgrove (CM) Moree (CM) MANSW Submission 2 Submission 8</p>
<p>The increased focus on mathematical terminology and the strengthening of the Language sections for the various syllabus substrands are positive changes and will ensure that consistent mathematical language is used across NSW.</p>	<p>BCC Camden (CM) Kingsgrove (CM) Moree (CM) Armidale (K–6 CM) AIS CECPD TF Submission 6 Submission 8</p>
<p>The strand/substrand diagram makes clear the relationship between the strands and substrands of the syllabus.</p>	<p>BCC Camden (CM) Coffs Harbour (CM) AIS CECPD CEOSYD Survey x 29 Submission 6 Submission 8</p>



Feedback	Sources
<p>The introduction of the diamond symbol to indicate the relevance of Stage 5.2 outcomes for Stage 6 Mathematics General 2 is helpful.</p> <p>The acknowledgement of prior-to-school learning, along with the references to the early learning years and starting points, is positive.</p> <p>Learning across the curriculum is appropriately represented.</p>	<p>AIS</p> <p>IEU (K–6)</p> <p>TF Survey x 11</p>
<p><b>Learning across the curriculum</b></p> <p><b><i>Critical and creative thinking</i></b> This has been identified as a core component of learning, and statements are supported with subject-specific examples.</p> <p><b><i>Intercultural understanding</i></b> This is a well-developed statement that contributes to students’ understanding of their own and others’ identities and to a sense of belonging and a sense of collective responsibilities.</p> <p><b><i>Sustainability and environment</i></b> This area is well defined and appropriately identified.</p> <p><b><i>Information and communication technology</i></b> The syllabus includes a meaningful statement reflecting how students develop competence in ICT. It reflects a more consistent continuum of learning for ICT that is better integrated into the syllabus content.</p>	<p>DEC</p>

### Matters raised and actions

Matters raised	Sources	Actions
<p><b>Organisation of Content section</b></p> <p>The purpose of the ‘Additional Content’ needs to be clarified.</p> <p>The strand/substrand diagram needs to be reviewed to show a better representation of Working Mathematically across K–10.</p> <p>Stage 5 should be organised and viewed in strands, as opposed to Stages 5.1, 5.2 and 5.3.</p> <p>Explicit, clear and consistent messages with regard to the status of K–6 content and its relationship to the outcomes and stage statements in each syllabus are required.</p>	<p>CEOW (K–6)</p> <p>CEOW (7–10) MANSW</p> <p>AIS</p> <p>CEOCG DEC</p>	<p>The purpose of the ‘Additional Content’, which has been relocated to support materials, has been clarified.</p> <p>The nature and role of Working Mathematically have been well described in the text of the syllabus. The main purpose of the diagram is to illustrate how the syllabus content is arranged.</p> <p>The organisation of Stage 5 into Stages 5.1, 5.2 and 5.3 has been strongly supported in both rounds of consultation on the draft syllabus.</p> <p>The advice about the status of the K–6 content has been clarified. Advice regarding the importance of programs relating to the syllabus outcomes has been included.</p>

Matters raised	Sources	Actions
<p>The placement of the strand/substrand diagram under the heading ‘Essential Content’ is misleading, as some of the substrands from Stages 5.2 and 5.3 are not essential content.</p> <p>The Number and Algebra overview requires some review to reference the usefulness of algebra as a tool to model, interpret and solve problems.</p> <p>The interrelationship noted in the statement ‘The presentation of Measurement and Geometry as a single strand recognises and emphasises their relationship’ should be explained.</p> <p>The Australian curriculum proficiencies ‘Fluency’ and ‘Understanding’ should not be described as components of Working Mathematically, but rather addressed through knowledge and skills within the syllabus content.</p> <p>Working Mathematically should be reviewed to include stronger language and verb use and a stronger emphasis on ‘methods and strategies’ used in problem solving, rather than simply ‘methods’. A balanced representation of ‘understanding, reasoning and problem solving’ is needed.</p> <p>The definition of ‘Problem Solving’ needs to be clarified.</p> <p>Some clarification is needed regarding the place of ‘reflection’ in Working Mathematically.</p> <p>The descriptive name ‘Working Mathematically’ should be removed from the syllabus and replaced with ‘Proficiency Strands’, as per the Australian curriculum.</p>	<p>MANSW</p> <p>CEOSYD</p> <p>AIS</p> <p>Submission 6</p> <p>AIS CEOCG</p> <p>MANSW</p> <p>MANSW</p> <p>CEOCG MANSW</p>	<p>The heading above the strand/substrand diagram has been changed and no longer refers to ‘essential content’.</p> <p>The Number and Algebra overview has been reviewed and amended to reflect this suggestion.</p> <p>This statement has been reviewed and amended to ensure that the interrelationship has been explained.</p> <p>The descriptions of ‘Fluency’ and ‘Understanding’ are included for consistency with the Australian curriculum. These two components of Working Mathematically are not tagged and do not have specific outcomes attached, which acknowledges that they are encompassed in the knowledge, skills and understanding within the content.</p> <p>The descriptions of ‘Problem Solving’, ‘Reasoning’, ‘Understanding’ and ‘Fluency’ are consistent with their descriptions in the Australian curriculum.</p> <p>The ‘Problem Solving’ definition is consistent with the definition in the Australian curriculum.</p> <p>The Working Mathematically strand encompasses the four mathematics proficiencies within the Australian curriculum and the component ‘Communicating’, which is consistent with feedback from the first round of consultation.</p> <p>The descriptive name ‘Working Mathematically’ has been strongly supported throughout the consultation process.</p>

Matters raised	Sources	Actions
<p><b>Quantity and quality of content</b></p> <p>There is too much content prescribed for Stage 3 and for Stage 5.3.</p> <p>The development of the concept of division needs to be reviewed from Early Stage 1 to Stage 3.</p> <p>Consistent terminology needs to be used throughout the syllabus, eg ‘equal-arm balance’ or ‘balance scales’, ‘number chart’ or ‘hundreds chart’.</p> <p>More support for the development of language from stage to stage is needed. In K–6, the language identified in previous stages should be included in each subsequent stage.</p> <p>The language used in the K–6 content should be reviewed for consistency and expanded in Stage 1 to include more of the metalanguage of mathematics, eg the term ‘corners’ should be replaced with ‘vertices’.</p> <p>Some further refinement of the Background Information and Language sections in Early Stage 1 to Stage 5 is needed.</p> <p>The amount of advice in the Background Information and Language sections for Stage 4 and Stage 5 should be more consistent across strands and substrands.</p>	<p>Camden (CM) Coffs Harbour (CM) Kingsgrove (CM) Moree (CM) Ryde (K–6 CM) AIS CEOCG CEOSYD CEOW (7–10) DEC IEU (K–6) IEU (7–10) MANSW TF Survey x 4</p> <p>BCC MANSW Survey x 1</p> <p>BCC Submission 6 Submission 9</p> <p>Camden (CM) Kingsgrove (CM) Moree (CM) Submission 5 Submission 10</p> <p>Camden (CM) Kingsgrove (CM) IEU (K–6) Submission 9</p> <p>MANSW</p> <p>Kingsgrove (CM)</p>	<p>The higher expectations of the Stage 1 and Stage 2 content should better prepare students for managing Stage 3 content. With regard to Stage 5, it is not expected that all students undertaking Stage 5.3 content will cover all aspects of the content. The full Stage 5.3 content is written to challenge the most able of students.</p> <p>The development of the concept of division has been reviewed and amended from Early Stage 1 to Stage 3.</p> <p>Terminology has been reviewed and amended where appropriate to be consistent with the Australian curriculum.</p> <p>The level of consistency and the breadth of the Language sections have been reviewed and amended where appropriate.</p> <p>The language used to describe content across the syllabus has been reviewed and amended to be more consistent from substrand to substrand in Early Stage 1 to Stage 3.</p> <p>The Background Information and Language sections have been reviewed and amended where appropriate.</p> <p>The Background Information and Language sections are designed to give the support that teachers require. This varies across stages, strands and substrands. These sections have been reviewed and amended where appropriate.</p>

Matters raised	Sources	Actions
<p>Content related to the second part of the first values and attitudes objective (ie ‘recognising that its cross-cultural development has been largely in response to human needs’) should be included in the syllabus.</p> <p>Financial literacy should be explicitly defined in the syllabus.</p> <p>The stages at which each of the formal algorithms for addition, subtraction, multiplication and division are introduced need to be reviewed to be consistent with current research into the introduction of these algorithms.</p> <p>The development of the concept of equality from Early Stage 1 to Stage 3 needs to be more explicit, including reference to the = sign.</p> <p>Simple quadratic equations of the form <math>x^2 = c</math> need to be included in Stage 4 as they are necessary for Pythagoras’ theorem. Simple cubics should also be included in Stage 4.</p> <p>The concept of irrational numbers, including <math>\pi</math>, located in the Measurement and Geometry strand in Stage 4, should also appear in the Number and Algebra strand.</p>	<p>Survey x 1</p> <p>CEO CG</p> <p>AIS Submission 3 Submission 10</p> <p>BCC AIS MANSW Submission 3</p> <p>CEOSYD</p> <p>AIS</p>	<p>Values and attitudes objectives are addressed through teaching and learning experiences, rather than additional specific content.</p> <p>Concepts relating to money and finance are integrated within the substrands of the Number and Algebra strand to increase the opportunities for students to engage with financial literacy.</p> <p>Greater emphasis has been placed on mental strategies in Stage 2 and Stage 3 content. The introduction of the <math>\frac{\quad}{\quad}</math> sign has been delayed until Stage 3.</p> <p>This has been reviewed and amended where appropriate</p> <p>Simple quadratic equations have been added to the content of Stage 4 Equations. Simple cubics are included (appropriately) in the content of Stage 5.3 Equations.</p> <p>The concept of irrational numbers, including <math>\pi</math>, has been introduced in Stage 4 Number and Algebra in the Fractions, Decimals and Percentages substrand.</p>
<p><b>General matters</b></p> <p>Some parts of the content need to be reviewed in order to ensure that they are appropriately represented, sequenced and exemplified within a stage.</p>	<p>BCC Camden (CM) Coffs Harbour (CM) Kingsgrove (CM) Moree (CM) AIS CEO GC CEOSYD CEOW (7–10) DEC MANSW TF Submission 3 Submission 5 Submission 6 Submission 8 Submission 10</p>	<p>The content has been reviewed and amended so that it is represented in the appropriate stage and in sequence, and so that the examples are clear.</p>

Matters raised	Sources	Actions
<p>The content for K–6 should be reviewed in order to include more real-world applications and opportunities for higher-order thinking.</p> <p>It is inconsistent and inappropriate in the secondary section of the syllabus for the content of some substrands to be split into two parts.</p>	<p>Camden (CM) Coffs Harbour (CM) Kingsgrove (CM)</p> <p>AIS Submission 6</p>	<p>The real-world applications and opportunities for higher-order thinking within the content have been reviewed and supplemented.</p> <p>Some substrands in Stage 4 were split into two parts in order to present the content in a more manageable and workable way. The presentation in Version 2 was strongly supported in consultation feedback.</p>
<p><b>Use of digital technology</b></p> <p>More references to, and support and suggestions for, the use of ICT in teaching and learning should be included in the syllabus.</p> <p>Greater consistency in the use of terminology related to ICT is needed across the syllabus.</p> <p>The expectation for students regarding the use of digital technologies needs to be clarified, eg the use of calculators in Years 7–10.</p>	<p>Camden (CM) Kingsgrove (CM) TF</p> <p>AIS MANSW Submission 6</p> <p>CEOW (7–10) MANSW Survey x 1</p>	<p>More references to, and suggested uses of, ICT have been added.</p> <p>Terminology in the syllabus related to ICT has been designed for consistency with the Australian curriculum. It has been further reviewed for consistency and has been amended where appropriate.</p> <p>School-based decisions regarding the use of digital technologies should be made in the development of teaching and learning programs in order to address the needs of students.</p>
<p><b>Learning across the curriculum</b></p> <p>Learning across the curriculum references need to be authentic, with links to user-friendly resources, particularly for content in relation to Aboriginal and Torres Strait Islander Histories and Cultures.</p> <p>One learning across the curriculum area, Asia and Australia’s Relationship with Asia, needs further development. Opportunities remain to improve the tagging in this syllabus.</p> <p>Learning across the curriculum needs to be renamed and presented as two distinct groups consistent with the Australian curriculum’s ‘general capabilities’ and ‘cross-curriculum priorities’. Clarification about the clustering of general capabilities and cross-curriculum priorities is required.</p>	<p>Coffs Harbour (CM) Moree (CM) CECPD CEOCG TF Survey x 1 Submission 3 Submission 5</p> <p>DEC</p> <p>CEOSYD DEC</p>	<p>The learning across the curriculum content has been reviewed and revised where appropriate.</p> <p>The tagging of this learning across the curriculum area has been reviewed and revised where appropriate.</p> <p>The organisation of the learning across the curriculum areas has been reviewed and revised to align more consistently with the Australian curriculum general capabilities and cross-curriculum priorities.</p>

Matters raised	Sources	Actions
<p>Consistency in the tagging of learning across the curriculum areas within the syllabus content needs to be improved to ensure that appropriate opportunities are identified.</p> <p>The learning across the curriculum areas should be reviewed in order to reduce the number of areas.</p> <p>The current Numeracy tags should be removed and icons should replace codes in the PDF version of the syllabus.</p> <p>The scope of literacy learning needs to be reviewed through an analysis of each syllabus and a consistent definition of literacy needs to be provided at the beginning of each cross-curriculum literacy statement.</p> <p>Aboriginal perspectives are not sufficiently represented in the syllabus.</p> <p>The learning across the curriculum areas could be improved by:</p> <ul style="list-style-type: none"> <li>• clarifying the meaning of Difference and Diversity</li> <li>• providing consistent definitions of learning across the curriculum in all four syllabuses</li> <li>• replacing the term ‘Indigenous’ with ‘Aboriginal and Torres Strait Islander’ throughout all syllabus documents</li> <li>• replacing the wording ‘Aboriginal perspectives’ with ‘Aboriginal content’.</li> </ul>	<p>DEC</p> <p>Bega (CM) Coffs Harbour (CM) Submission 3</p> <p>Kingsgrove (CM) Moree (CM) AIS CEOSYD</p> <p>DEC</p> <p>TF</p> <p>DEC</p>	<p>Consistency in the tagging of learning across the curriculum areas has been reviewed and revised to ensure authentic and appropriate opportunities for students.</p> <p>All of the current areas are to be maintained as they include the Australian curriculum’s general capabilities and cross-curriculum priorities, in addition to the other areas strongly supported in the first round of consultation for inclusion in the syllabus.</p> <p>Numeracy is embedded throughout the <i>Mathematics K–10 Syllabus</i>. It relates to a high proportion of content across K–10. Consequently, Numeracy is not tagged in the new syllabus.</p> <p>The scope of literacy learning across each syllabus has been reviewed and the definition of literacy has been revised.</p> <p>Aboriginal perspectives have been reviewed and strengthened in the syllabus.</p> <p>The learning across the curriculum content has been reviewed and strengthened.</p>

## 5.7 Students with special education needs, including Years 7–10 Life Skills outcomes and content

### Summary

The inclusion of Years 7–10 Life Skills outcomes and content was strongly supported in the consultation feedback. This included a high level of support for the alignment of Life Skills outcomes and content with Stage 4 and Stage 5 syllabus outcomes and content, as it is felt that this will more strongly promote engagement.

Some feedback indicated that there are insufficient Years 7–10 Life Skills outcomes to demonstrate progression for students with significant disabilities. It was suggested that the outcomes be reviewed in order to ensure a more appropriate demonstration of progression. It was also recommended in feedback that Years 7–10 Life Skills outcomes and content relating to the use of money for students with special education needs be extended.

Some respondents commented that the advice about adjustments to assessments for students with special education needs was clear; however, other feedback indicated that further advice about adjustments to teaching, learning and assessment was required.

### Feedback affirming the information on students with special education needs, including Years 7–10 Mathematics Life Skills outcomes and content

Feedback	Sources
The referencing of Years 7–10 Life Skills outcomes and content in Stage 4 and Stage 5 mainstream outcomes and content, including in the interactive online format, is very useful for integrated classrooms and special school settings.	Coffs Harbour (CM) Kingsgrove (CM) North Rocks (SECM) Sydney (SECM) CEOSYD CEOW (7–10) IEU (7–10) IWSETN MANSW Survey x 13 Submission 8
Years 7–10 Life Skills outcomes and content are well sequenced, are appropriately aligned with Stage 4 and Stage 5 mainstream outcomes and content, and provide a range of entry points for students with special education needs.	Camden (CM) Coffs Harbour (CM) Kingsgrove (CM) North Rocks (SECM) Sydney (SECM) CEOSYD CEOW (7–10) IEU (7–10) TF Survey x 7 Submission 6
The arrangement of Years 7–10 Life Skills outcomes and content in strands and substrands makes them easy to read and navigate.	Kingsgrove (CM) North Rocks (SECM) Sydney (SECM) CEOW (7–10)
The inclusion of advice about reporting against Life Skills outcomes and content, as well as advice about reporting against the outcomes from a lower stage in K–6, was supported.	SEC

**Matters raised and actions**

Matters raised	Sources	Actions
<p><b>Students with special education needs</b></p> <p>Advice regarding the provision for students with special education needs, including programming support and other materials, is required with the release of the syllabus.</p> <p>The syllabus should outline the diversity of students with special education needs, and should clarify that gifted and talented students may also have learning difficulties and/or physical difficulties.</p>	<p>AASE</p> <p>DEC</p>	<p>Materials to support initial implementation will accompany the release of the syllabus. Further advice about programming and assessment, including review of the Life Skills support materials, will be undertaken during Term 4.</p> <p>Further advice about the diversity of students with special education needs will be included in the syllabus and in support materials.</p>
<p><b>Specific matters relating to K–6</b></p> <p>Provision of appropriate outcomes and content is needed for students who are unable to access Early Stage 1 outcomes.</p> <p>There are insufficient outcomes in Early Stage 1 to Stage 3 to demonstrate appropriate progression for students with significant disabilities.</p> <p>In some substrands, as students progress through the stages in K–6, there is a considerable increase in the learning expectations of the outcomes.</p>	<p>North Rocks (SECM) Sydney (SECM)</p> <p>BCC Sydney (SECM)</p> <p>Sydney (SECM)</p>	<p>The use of adjustments to support students has been illustrated in support materials.</p> <p>Early Stage 1 to Stage 3 outcomes and content have been reviewed in relation to the sequence and level of detail, and have been amended where appropriate.</p> <p>For students with special education needs, appropriate adjustments will be needed as they progress through the K–6 curriculum.</p>
<p><b>Specific matters relating to Years 7–10 Life Skills outcomes and content</b></p> <p>The mapping of Years 7–10 Life Skills outcomes to Stage 4 and Stage 5 outcomes does not reinforce the options for students who may benefit from adjustments to achieve regular outcomes.</p> <p>Some rewording of Years 7–10 Life Skills outcomes is needed to, for example, limit the number of verbs within an outcome and avoid the use of the phrase ‘range of strategies’.</p> <p>A review of the continuity of learning between Stage 4 and Stage 5 Life Skills outcomes and Stage 6 Life Skills outcomes is needed.</p>	<p>BCC Camden (CM) Survey x 1</p> <p>North Rocks (SECM) Sydney (SECM)</p> <p>North Rocks (SECM)</p>	<p>Advice about adjustments has been included, as well as a description of students for whom Life Skills outcomes and content are appropriate.</p> <p>Years 7–10 Life Skills outcomes have been reviewed and reworded where appropriate.</p> <p>There is sufficient flexibility to provide continuity for all students. Stage 6 will be reviewed when the senior years curriculum is developed.</p>



Matters raised	Sources	Actions
<p>Years 7–10 Life Skills outcomes and content still do not address sufficiently the range of skills that students with special education needs will require in everyday life.</p>	<p>BCC</p>	<p>There was strong support in the consultation feedback for the view that the current Years 7–10 Life Skills outcomes and content provide the flexibility that teachers need to meet the individual needs of students.</p>
<p>The presentation of related Years 7–10 Life Skills outcomes with Stage 4 and Stage 5 mainstream outcomes may result in more students taking easier, but inappropriate, options.</p>	<p>BCC AIS</p>	<p>The syllabus is designed to be inclusive of the full range of learners. Advice provided in the syllabus aims to describe appropriately the various curriculum options available to students.</p>
<p>Some of the substrand titles in the Years 7–10 Life Skills content need to be more descriptive.</p>	<p>Sydney (SECM)</p>	<p>Years 7–10 Life Skills substrand titles have been reviewed and amended where appropriate, so that they are more descriptive.</p>
<p>The Years 7–10 Life Skills content needs to be reviewed in order to limit the amount of repetition.</p>	<p>BCC Sydney (SECM)</p>	<p>Years 7–10 Life Skills content forms the basis for learning opportunities. Content should be selected based on the individual needs of students.</p>
<p>The description of Life Skills outcomes as relating to Stage 4 and Stage 5 outcomes requires review. Life Skills outcomes align more appropriately with K–6 content.</p>	<p>DEC</p>	<p>Life Skills outcomes have been developed from the Stage 4 and Stage 5 objectives. A relationship between Life Skills and Stage 4 and Stage 5 outcomes has been described where appropriate.</p>
<p>The related Life Skills and Stage 4 and Stage 5 outcomes should be represented in support materials.</p>	<p>DEC</p>	<p>There was strong support in the consultation feedback for the representation of related outcomes in the syllabus.</p>
<p>Years 7–10 Life Skills outcomes included on each content page of the syllabus should refer to the Life Skills section of the syllabus.</p>	<p>DEC</p>	<p>The related Years 7–10 Life Skills outcomes are included within the Stage 4 and Stage 5 content.</p>
<p>Regular course outcome codes for Stage 4 and Stage 5 should be included on Life Skills content pages.</p>	<p>North Rocks (SECM) SEC</p>	<p>The codes for regular Stage 4 and Stage 5 course outcomes have been included on the Life Skills content pages.</p>

Matters raised	Sources	Actions
<p><b>Matters relating to Life Skills advice</b></p> <p>Clarification is required regarding which students should study Life Skills outcomes and content.</p> <p>The flow chart describing the decision making process for accessing Life Skills outcomes and content should be included in the syllabus.</p> <p>Further advice is required about making adjustments to teaching, learning, assessment and reporting for students with special education needs.</p> <p>An explanation of the terms ‘independently’ and ‘with support’ in relation to the achievement of outcomes is required.</p> <p>Advice about the selection of content in the Years 7–10 Life Skills content section of the syllabus requires strengthening and greater prominence.</p> <p>Further advice is required about reporting the achievement of students in relation to Life Skills outcomes and content.</p> <p>The advice regarding curriculum options and accessing outcomes and content for students with special education needs, including Life Skills, requires review.</p> <p>The advice regarding communication strategies in the English syllabus should be included in the syllabus.</p>	<p>BCC Sydney (SECM) AASE DEC IWSETN SEC</p> <p>AASE SEC</p> <p>Sydney (SECM) DEC SEC</p> <p>AASE</p> <p>IWSETN</p> <p>Sydney (SECM)</p> <p>North Rocks (SECM) Sydney (SECM) AASE DEC SEC</p> <p>North Rocks (SECM)</p>	<p>Advice accompanying the syllabus will clarify that Life Skills courses should be studied by students who are unable to achieve the mainstream Stage 4 and Stage 5 outcomes.</p> <p>The diagram is included in support materials for Life Skills. The interactive online syllabus will provide greater flexibility to move between the syllabus and support materials.</p> <p>Advice on making adjustments for students with special education needs will be provided in support materials.</p> <p>Advice about the demonstration of the achievement of outcomes will be provided in support materials.</p> <p>The advice has been reviewed and revised to ensure its clarity.</p> <p>Advice about reporting the achievement of students in relation to Life Skills outcomes and content is provided in the Life Skills support document <i>Life Skills Years 7–10: Advice on Planning, Programming and Assessment</i>.</p> <p>The relevant advice has been reviewed and strengthened.</p> <p>Advice about providing adjustments to accommodate communication strategies used by students with special education needs has been included in the Introduction section of the syllabus.</p>

<b>Matters raised</b>	<b>Sources</b>	<b>Actions</b>
Some amendments are needed to the text describing the students for whom Years 7–10 Life Skills outcomes and content are intended, eg ‘particularly’ should be removed from ‘particularly students with an intellectual disability’	BCC	Advice currently provided in the Introduction, Life Skills and Assessment sections of the syllabus has been reviewed and supplemented in order to clarify further the students for whom Life Skills outcomes and content are intended.
<p><b>Continuum of learning</b></p> <p>Life Skills outcomes and content should be included as part of the continuum of learning.</p>	North Rocks (SECM)	Life Skills outcomes and content are an alternative to Stage 4 and Stage 5 mainstream outcomes and content, and as such are not included in the continuum of learning. Their relationship is described in the Life Skills section of the syllabus.

## 5.8 Continuum of learning in Mathematics K–10

### Summary

Feedback from respondents indicated that the syllabus will form a sound basis for developing appropriate teaching and learning programs. The feedback confirmed that the sequencing of the syllabus content represents an appropriate continuum of mathematics learning across K–10.

It was strongly suggested in the consultation feedback that ‘key ideas’ for each of the syllabus strands are needed for the assistance of teachers.

### Feedback affirming the continuum of learning in Mathematics K–10

Feedback	Sources
The continuum of mathematics learning from Early Stage 1 to Stage 5 is clear, fluent and accessible.	Bega (CM) Camden (CM) Ryde (K–6 CM) CEOSYD CEOW (K–6) CEOW (7–10) IEU (7–10) Survey x 25 Submission 6 Submission 8
The stage statements are concise, relevant and helpful.	AIS CEOW (K–6) CEOW (7–10) IEU (K–6) IEU (7–10) Survey x 26 Submission 3 Submission 6

### Matters raised and actions

Matters raised	Sources	Actions
<p><b>Key ideas</b></p> <p>A continuum of ‘key ideas’ is needed, as a continuum of outcomes lacks sufficient specificity to guide teaching, learning and assessment.</p> <p>The ‘key ideas’ should be prominently placed on each syllabus page and a continuum of the ‘key ideas’ should be placed at the front of the syllabus.</p> <p>A K–6 continuum of foundation number concepts and skills is needed.</p>	<p>BCC Kingsgrove (CM) DEC MANSW Survey x 4 Submission 9 Submission 11 Submission 12</p> <p>BCC Coffs Harbour (CM)</p>	<p>An overriding objective has been to reduce inconsistencies between the four new K–10 syllabuses. For this reason, a continuum of ‘key ideas’ has not been included in the syllabus, but it will be provided in support materials.</p> <p>The progression of number concepts and skills is represented in the continuum of ‘key ideas’, which will be provided in support materials.</p>

Matters raised	Sources	Actions
<p><b>Stage statements</b></p> <p>The stage statements should be reviewed in order to develop a structure that can be used consistently across the four syllabuses.</p> <p>The stage statements should be located before the content in the syllabus.</p> <p>The consistent and specific references to ‘fluency’ that are evident in the stage statements from Early Stage 1 to Stage 3 should continue for Stage 4 and Stage 5.</p> <p>The replacement of the foundation statements with stage statements in K–6 needs targeted and clear communication.</p> <p>Achievement standards should be incorporated into the syllabus.</p>	<p>DEC</p> <p>AIS CECPD CEOW (7–10) DEC TF</p> <p>CEOSYD</p> <p>Survey x 1</p> <p>Survey x 1</p>	<p>The stage statements have been reviewed. They describe in a consistent way the knowledge, skills and understanding developed at the end of each stage in the syllabus. They are based on and reflect the scope of the syllabus outcomes and the organisation and sequence of content.</p> <p>The stage statements have been moved and are now located before the content in the syllabus.</p> <p>The stage statements for Stage 4 and Stage 5 have been reviewed and amended to incorporate references to fluency where appropriate.</p> <p>The stage statements replace the K–6 foundation statements and summarise the knowledge, skills, understanding, values and attitudes developed by students as a result of achieving the outcomes for each stage.</p> <p>Achievement standards are represented in the syllabus, as in other NSW syllabuses, in the stage statements.</p>

## 5.9 Assessment

### Summary

In general, the consultation feedback indicated that the assessment advice provided in the syllabus is clear and that the associated assessment principles are well articulated.

However, primary and secondary respondents indicated the need for more specific assessment advice to support further the implementation of *assessment for learning* and *assessment of learning* strategies in a 21st-century context. Some feedback suggested that specific advice in relation to the assessment of the Working Mathematically outcomes is needed for the assistance of teachers.

### Feedback affirming the assessment advice

Feedback	Sources
In the assessment advice provided in the syllabus, assessment options are clear and assessment principles are well articulated.	North Rocks (SECM) Submission 5 Submission 6

### Matters raised and actions

Matters raised	Sources	Actions
The advice in the syllabus in relation to assessment should be more specific, with a view to ensuring a consistent approach to the assessment of the Working Mathematically outcomes and the use of the A–E reporting system.	Coffs Harbour (CM) Kingsgrove (CM) MANSW Submission 1	The assessment advice in the syllabus has been reviewed and amended or extended where appropriate to ensure that it will be applied more consistently across schools.
A range of assessment strategies incorporating a 21st-century approach is needed, including work samples, interactive activities, and less traditional forms of assessment.	Coffs Harbour (CM) Kingsgrove (CM) IEU (K–6) IEU (7–10) Survey x 1	Sample assessment tasks, together with student responses, are available through the Board’s Assessment Resource Centre (ARC).
The assessment advice provided should include guidance for assessing gifted and talented (GAT) students.	Survey x 1	Further advice about assessment for all students will be provided in support materials.
Syllabus materials should provide links to NAPLAN testing information, including information regarding the content that is expected to be covered for the respective NAPLAN tests.	BCC Bega (CM) Camden (CM)	NAPLAN testing is administered by ACARA. The syllabus includes the nationally agreed Australian curriculum content descriptions and provides clarification of the intended breadth and depth of the content.
Further advice is required in relation to the role of the stage statements in programming, assessment and reporting, and their place in identifying standards.	DEC	The role of the stage statements will be clarified in advice about assessment in support materials.

## 5.10 Other comments

### Summary

Consultation feedback expressed strong support for the presentation of the syllabus in an interactive online format, including the ability to view content across the syllabus strands. It was indicated, in particular, that the diagrams and equations that are magnified via a ‘rollover’ function would be of great assistance to teachers and students. The feedback also supported the inclusion of the strand/substrand diagram, which provides clarity and shows the relationships between outcomes and content from Kindergarten to Year 10.

Some respondents provided suggestions for the development of syllabus support materials. These suggestions included sample units of work and assessment activities for each substrand. It was requested in the feedback that support materials be provided for the learning across the curriculum area Aboriginal and Torres Strait Islander Histories and Cultures.

The feedback indicated that support needs to be provided for syllabus implementation, including advice in relation to codes used and time allocations for each strand.

### Feedback affirming the *Mathematics K–10 Draft Syllabus Version 2*

Feedback	Sources
The syllabus recognises the need for students to access the curriculum at different starting points, depending on their learning needs, strengths, goals and interests.	TF
Coding is useful in relating Australian curriculum content to NSW content and outcomes.	TF
The interactive online format is clear and easy to navigate. It will be useful for teachers, parents and students.	BCC Camden (CM) Coffs Harbour (CM) Kingsgrove (CM) Moree (CM) North Rocks (SECM) Submission 7 Submission 8 Submission 10 Submission 13
The examples, diagrams and equations throughout the syllabus will be of great use to teachers.	Bega (CM) Camden (CM) Coffs Harbour (CM) Moree (CM) Submission 1

**Matters raised and actions**

Matters raised	Sources	Actions
<p><b>Implementation</b></p> <p>Advice, especially for K–6, needs to be provided regarding appropriate time allocations for the teaching and learning of each of the syllabus strands.</p> <p>A program of support for teachers is needed in relation to the implementation of the syllabus.</p> <p>Explanations of the terms used to describe the elements of the syllabus should be provided.</p> <p>A clarifying statement of intent is needed regarding the concept of part 1 and part 2 within substrands.</p> <p>The amount of content in the new K–10 English, Mathematics, Science and History syllabuses will diminish the time available for other learning areas.</p> <p>The amount of content in all four curriculum areas should be re-evaluated to allow the development of higher-order and critical thinking skills and skills unique to the subject discipline.</p>	<p>Camden (CM) Kingsgrove (CM) Armidale (K–6 CM) TF Survey x 1 Submission 2</p> <p>Camden (CM) Coffs Harbour (CM) Kingsgrove (CM) Moree (CM) Armidale (K–6 CM) MANSW TF Survey x 2 Submission 7 Submission 8</p> <p>DEC</p> <p>CEOSYD</p> <p>TF</p> <p>TF</p>	<p>The syllabus allows teachers the flexibility to allocate time to strands and substrands to reflect the rate of learning of their students.</p> <p>The Board will provide initial support materials to guide the implementation of the new syllabus. This will be reinforced through professional development by schooling authorities.</p> <p>Explanations of the terms will be provided in initial support materials.</p> <p>The two-part format will be clarified in support materials.</p> <p>The syllabuses are designed to be taught within the time currently available in NSW schools. There is flexibility, particularly in the primary curriculum, to make decisions on areas of emphasis based on learning needs and available time.</p> <p>The content has been reviewed and increased opportunities have been provided for the development of subject-specific and critical thinking skills.</p>
<p><b>Support materials</b></p> <p>A scope and sequence based on the ‘key ideas’ should be provided with the syllabus.</p>	<p>Camden (CM) Kingsgrove (CM) Moree (CM) Armidale (K–6 CM) Survey x 3 Submission 5 Submission 9</p>	<p>A continuum of ‘key ideas’ will be provided in support materials.</p>



Matters raised	Sources	Actions
<p>Support materials are needed to assist teachers with the implementation of the new syllabus and should address content that is new to a syllabus or new to a particular stage.</p> <p>The NSW mathematics continuum should reflect the Australian curriculum continuum set out in years rather than stages.</p>	<p>BCC Bega (CM) Camden (CM) Coffs Harbour (CM) Kingsgrove (CM) Moree (CM) Armidale (K–6 CM) MANSW TF Survey x 3 Submission 7</p> <p>Survey x 1</p>	<p>Support materials will focus on content new to the syllabus or new to a stage.</p> <p>The Board has established its commitment to a staged approach to the organisation of the curriculum.</p>
<p><b>Presentation</b></p> <p>The layout of the syllabus outcomes on each content page needs to be reconsidered in terms of their alignment with the associated codes and with a view to ensuring that the Australian curriculum content descriptions are clearly distinguished from the rest of the syllabus content.</p> <p>The Working Mathematically outcomes should be clearly distinguished from the content outcome for each substrand and should appear below the content outcome.</p> <p>Years 7–10 Life Skills outcomes should not be listed with Stage 4 and Stage 5 mainstream outcomes for each syllabus substrand.</p> <p>The continuum of learning should be moved to the beginning of the syllabus.</p>	<p>BCC Camden (CM) Kingsgrove (CM) Moree (CM) North Rocks (SECM) CEO CG CEOW (K–6) CEOW (7–10) MANSW Survey x 2 Submission 1 Submission 10</p> <p>Kingsgrove (CM) Submission 10</p> <p>BCC AIS Submission 6</p> <p>TF</p>	<p>The placement of the syllabus outcomes has been reviewed and a consistent approach has been adopted across the four Phase 1 syllabuses. The Australian curriculum content descriptions are identified with ‘AC’ coding.</p> <p>The consultation feedback strongly supported the current placement and prominence of the Working Mathematically outcomes.</p> <p>Feedback has supported the listing of Years 7–10 Life Skills outcomes with Stage 4 and Stage 5 mainstream outcomes due to the support this provides to teachers who need to access both sets of outcomes and to understand the connections between them.</p> <p>The continuum of learning has been moved to the front section of the syllabus.</p>

Matters raised	Sources	Actions
<p><b>Interactive online format and programming tool</b></p> <p>The interactive online version of the syllabus needs to be further developed to enable filtering for learning across the curriculum areas and some aspects of content.</p> <p>The programming tool should enable the user to:</p> <ul style="list-style-type: none"> <li>• link to and select from the syllabus and sample units of work</li> <li>• create integrated units of work</li> <li>• include differentiated instruction</li> <li>• link to the ‘key ideas’</li> <li>• link to the Assessment Resource Centre (ARC) sample assessment tasks and work samples</li> <li>• have a higher level of interactivity</li> <li>• hyperlink to the syllabus glossary.</li> </ul>	<p>DEC</p> <p>Bega (CM) Coffs Harbour (CM) Kingsgrove (CM) Moree (CM) CEOW (K–6) CEOW (7–10) Submission 6 Submission 10</p>	<p>Further work on the interactive online syllabus that will enable filtering of learning across the curriculum areas is under development.</p> <p>The online programming tool being developed for the syllabus will include a broad and sufficient range of functionalities for appropriate and detailed programming in both the primary and the secondary school settings.</p>
<p><b>Diversity of learners</b></p> <p>The syllabus should recognise the diversity of Australian learners and provide guidance to teachers on curriculum differentiation to meet the diverse learning needs of students, including:</p> <ul style="list-style-type: none"> <li>• Aboriginal and Torres Islander students from diverse backgrounds in urban and rural settings</li> <li>• gifted and talented (GAT) students</li> <li>• students learning English as an additional language or dialect, including the use of ESL scales for EAL students (Mathematics, Science and History).</li> </ul>	<p>Camden (CM) Kingsgrove (CM) CECPD DEC</p>	<p>Additional advice on meeting the needs of gifted and talented students has been included in the syllabus. Further advice on meeting diverse student needs will be incorporated in support materials.</p>
<p><b>Indicators</b></p> <p>Indicators, as in the current K–6 syllabus, should be included, as they are useful both for teaching and learning and for assessment.</p>	<p>Camden (CM) Kingsgrove (CM)</p>	<p>Sufficient detail for teaching and learning and for assessment purposes is provided in the content matched to each outcome.</p>
<p><b>Continuum of learning K–10</b></p> <p>The <i>Early Years Learning Framework</i> should be recognised as part of the continuity of student learning by linking Early Stage 1 outcomes in all syllabuses.</p>	<p>DEC</p>	<p>Recognition of the <i>Early Years Learning Framework</i> and its relationship to Early Stage 1 is included in the diagram in the section titled ‘The Place of the <i>Mathematics K–10 Syllabus</i> in the K–12 Curriculum’ and in the continuum of learning table.</p>

## 6 Quantitative analysis of survey responses

### 6.1 Mathematics K–6 survey (note: due to rounding, some percentages may not total 100%)

Survey item	Number of responses	Strongly agree		Agree		Disagree		Strongly disagree		Non-response	
		n	%	n	%	n	%	n	%	n	%
<b>Outcomes</b> The outcomes provide specific direction for teaching, learning and assessment.	19	2	11%	10	53%	5	26%	2	11%	0	0%
<b>Organisation of content</b> The strand/substrand diagram makes clear the relationship between the strands and substrands of the syllabus.	18	3	17%	14	78%	1	6%	0	0%	0	0%
The inclusion of ‘Communicating’ as a component of Working Mathematically is supported.	18	7	39%	11	61%	0	0%	0	0%	0	0%
The strand overviews provide a clear description of the learning in each strand.	18	2	11%	11	61%	5	28%	0	0%	0	0%
<b>Content: Early Stage 1 to Stage 3</b> The sequence of the syllabus content represents an appropriate continuum of mathematics learning.	18	2	11%	12	67%	2	11%	1	6%	1	6%
The content provides sufficient detail for the development of teaching and learning programs.	18	2	11%	10	56%	5	28%	1	6%	0	0%
<b>Stage statements</b> The stage statements provide a clear summary of student learning in relation to the outcomes.	18	3	17%	13	72%	1	6%	0	0%	1	6%

**6.2 Mathematics Years 7–10 survey (note: due to rounding, some percentages may not total 100%)**

Survey item	Number of responses	Strongly agree		Agree		Disagree		Strongly disagree		Non-response	
		n	%	n	%	n	%	n	%	n	%
<b>Outcomes</b>											
The outcomes provide specific direction for teaching, learning and assessment.	18	3	17%	8	44%	4	22%	3	17%	0	0%
<b>Organisation of content</b>											
The strand/substrand diagram makes clear the relationship between the strands and substrands of the syllabus.	14	5	36%	7	50%	2	14%	0	0%	0	0%
The inclusion of ‘Communicating’ as a component of Working Mathematically is supported.	14	5	36%	7	50%	2	14%	0	0%	0	0%
The strand overviews provide a clear description of the learning in each strand.	14	4	29%	9	64%	1	7%	0	0%	0	0%
Learning across the curriculum content is appropriately represented.	14	3	21%	7	50%	3	21%	0	0%	1	7%
<b>Content: Stage 4 and Stage 5</b>											
The sequencing of the syllabus content represents an appropriate continuum of mathematics learning.	13	4	30%	7	54%	2	15%	0	0%	0	0%
The content is provided in sufficient detail for the development of teaching and learning programs.	13	3	23%	10	77%	0	0%	0	0%	0	0%
<b>Life Skills</b>											
The inclusion of related Life Skills outcomes within the Stage 4 and Stage 5 content is useful.	13	5	39%	8	62%	0	0%	0	0%	0	0%
The relationship between Life Skills outcomes and content, and Stage 4 and Stage 5 outcomes and content, is clear.	13	1	8%	6	46%	0	0%	1	8%	5	39%
Life Skills outcomes are accessible to the range of students undertaking Life Skills outcomes and content.	13	1	8%	6	46%	1	8%	0	0%	5	39%
Life Skills outcomes are appropriately sequenced.	13	1	8%	6	46%	1	8%	0	0%	5	39%
Life Skills content is relevant for the range of students undertaking Life Skills outcomes and content.	13	1	8%	7	54%	0	0%	0	0%	5	39%
<b>Stage statements</b>											
The stage statements provide an appropriate summary of student learning in relation to the outcomes.	13	3	23%	7	54%	2	15%	0	0%	1	8%

## 7 Respondents

### 7.1 Consultation meetings

#### *Mathematics K–10 Draft Syllabus Version 2: afternoon meetings*

(code: CM)

Venue	Date	Number of participants			
		K–6	Years 7–10	Life Skills	Total
Moree	8 March 2012	11	4	0	15
Camden	13 March 2012	28	20	1	49
Coffs Harbour	15 March 2012	16	12	0	28
Kingsgrove	19 March 2012	15	27	1	43
Bega	21 March 2012	5	10	0	15

#### **Kindergarten to Year 6 draft syllabuses Version 2 – all learning areas: full-day meetings**

(code: K–6 CM)

Venue	Date	Number of participants
Armidale	1 March 2012	11
Ryde	20 March 2012	11

#### **Years 7 to 10 draft syllabuses Version 2 – all learning areas: special education meetings**

(code: SECM)

Venue	Date	Number of participants
Sydney (at the Board of Studies)	9 March 2012	11
North Rocks	14 March 2012	20

#### **Board Curriculum Committee consultation meeting at OBOS on 27 March 2012**

(code: BCC)

**Feedback on the *Mathematics K–10 Draft Syllabus Version 2* was also gathered at the following meetings:**

Venue	Date	Number of participants
Inner West Special Education Teachers' Network meeting at CEO Sydney (Code: IWSETN)	7 March 2012	15
Catholic Education Commission NSW – Professional Development meeting (Code: CECPD)	21 March 2012	51

#### **Board of Studies Special Education Committee meeting on 3 April 2012**

(code: SEC)

## 7.2 Written submissions

<b>Organisations, groups and individuals</b>	<b>Code</b>
Association of Independent Schools of NSW	AIS
Australian Association of Special Education	AASE
Board of Studies Special Education Committee	SEC
Catholic Education Office, Archdiocese of Canberra and Goulburn	CEOCG
Catholic Education Office, Diocese of Wollongong	CEOW (K–6) and CEOW (7–10)
Catholic Education Office, Sydney	CEOSYD
Mathematical Association of NSW Inc	MANSW
NSW/ACT Independent Education Union	IEU (K–6) and IEU (7–10)
NSW Department of Education and Communities	DEC
NSW Teachers Federation	TF
Individual Respondent	Submission 1
Individual Respondent	Submission 2
Individual Respondent	Submission 3
Individual Respondent	Submission 4
Individual Respondent	Submission 5
Individual Respondent	Submission 6
Individual Respondent	Submission 7
Western Sydney Region Mathematics Team	Submission 8
Individual Respondent	Submission 9
Individual Respondent	Submission 10
Individual Respondent	Submission 11
Individual Respondent	Submission 12
Individual Respondent	Submission 13