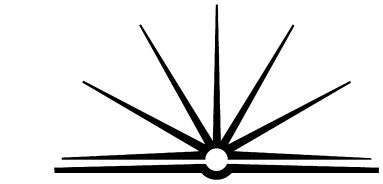

Science and Technology Kindergarten – Year 6

Science Years 7–10

Draft Syllabus

Consultation Report

November 2011

Published by Board of Studies NSW
GPO Box 5300
Sydney 2001
Australia

Tel: (02) 9367 8289
Fax: (02) 9279 1482
Internet: www.boardofstudies.nsw.edu.au

November 2011

20111051

Contents

1 Executive summary

Introduction

The *Science and Technology K–6 and Science Years 7–10 Draft Syllabus Consultation Report* provides a brief description of the consultation process and a summary and analysis of all feedback received. The summary analysis outlines confirmation of the general directions of the draft syllabuses as well as key matters raised that require action and the amendments that will be made in response.

The Consultation Report presents data and findings gathered through 232 survey responses, 23 written submissions, a Board Curriculum Committee (BCC) meeting, a Stakeholder meeting and 11 consultation meetings.

Overall the feedback on the Science and Technology K–6 and Science Years 7–10 draft syllabuses was positive, indicating a clear relationship between the rationale, aims and objectives. There was strong support for the reduction in the number of outcomes and the clarity of the continuum in outcomes and content across K–10 Science and K-8 Technology. The reduction in the number of strands by the integration of the knowledge of science and knowledge about science was supported. The syllabuses were seen to clearly emphasise the centrality of students' active participation in Working Scientifically and Working Technologically to develop their understanding of Science and Technology. While the K–10 syllabus content provided an appropriate level of detail and cognitive demand at each stage, revisions to consolidate and clarify some areas of content were identified. Feedback supported the inclusive nature of the K–6 syllabus and the alignment of the Life Skills outcomes and content with the regular Years 7–10 Science syllabus. Targeted support materials and professional learning to assist teachers to implement the syllabuses were identified as essential requirements.

Key matters

The major issues that emerged from consultation included:

- the rationales in the K–6 and 7–10 syllabuses do not succinctly describe the place and purpose of science and technology in the curriculum
- the values and attitudes are central to the syllabus philosophy and intent. This significance is not reflected in the organisation of the rationale and the ordering of the aims, objectives and outcomes
- in K–6 and Years 7–10 the wording of some objectives lacks clarity
- some K–6 Science outcomes lack clarity of intent and specificity
- the 'Organisation of content' sections in K–6 and Years 7–10 does not provide sufficient clarity about the syllabus structure and requirements
- there are inconsistencies across K–10 in the cognitive demand, clarity and specificity of wording of some knowledge and understanding content. In some areas of the K–10 syllabus there is inconsistency between the level of demand of the content and that of the outcomes
- the absence of coding and numbering of outcomes and content is identified as a weakness in the syllabus design. A necessary aspect of the syllabus design is to provide a mechanism, such as numbering and lettering, to align the content to outcomes and to demonstrate where the content is addressed in programming

- the organisation of the Years 7–10 knowledge and understanding content reduces some flexibility. There are some limitations in the scope to address the nature, development, uses and influence of science
- the purpose of the cross-curriculum content and the intent of the codes are unclear
- some Life Skills outcomes lack specificity and clarity of intent
- the Stage Statements do not provide a clear summary of the values and attitudes, skills, knowledge and understanding to be developed by students at each stage
- there is limited advice on specific assessment strategies in the K–6 and Years 7–10 draft syllabuses.

Proposed actions in response to consultation feedback

- The rationales will be reviewed to more succinctly describe the place and purpose of science and technology in the curriculum.
- The ordering of the aims, objectives and outcomes will be revised to place the values and attitudes before the skills, knowledge and understanding.
- The wording of the K–6 and Years 7–10 objectives will be reviewed to improve clarity and intent.
- The number of K–6 knowledge and understanding outcomes will be increased to improve their clarity and specificity.
- The 'Organisation of content' sections in the Science and Technology K–6 and Science Years 7–10 draft syllabuses will be revised to clarify syllabus structure and requirements.
- The knowledge and understanding content will be revised to clarify scope, depth and cognitive demand. The content will be reviewed for consistency with the level of demand of the outcomes.
- The coding of outcomes and content will be managed in a consistent way across Phase 1 syllabuses.
- The organisation of the knowledge and understanding content will be adjusted to increase flexibility. The scope to address the knowledge about science will be clarified and broadened.
- The purpose of the cross-curriculum content and the intent of the coding will be clarified consistently across syllabuses.
- The Life Skills outcomes and content will be revised. Clarity and specificity will be improved by increasing the number of outcomes.
- The Stage Statements will be revised to provide a more succinct summary of what students should know and be able to do by the end of a stage.
- Assessment advice will be included at the end of the Science and Technology K–6 and Science Years 7–10 parts of the syllabus. Further assessment advice will be provided in support materials, and work samples will be available in the Assessment Resource Centre of the Board of Studies website.

A summary of key issues and related proposed actions is contained in Section 4 of this report.

2 Background information

The Board of Studies began its syllabus development process for K–10 Science 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.

Implementation of the Australian curriculum is the responsibility of states and territories. In NSW, curriculum is delivered via syllabuses approved by the Minister for Education. The Board of Studies develops syllabuses for use by all NSW schools.

The *Science and Technology K–6 and Science Years 7–10 Draft Syllabus* has been developed to include the Australian curriculum content descriptions.

The Board of Studies conducted widespread consultation in Terms 3 and 4 of 2011 to engage stakeholders and to seek their feedback on the *Science and Technology K–6 and Science Years 7–10 Draft Syllabus*. The consultation program consisted of:

- a meeting of the BCC for K–10 Science on 11 August 2011
- a stakeholder meeting on 18 August 2011
- afternoon teacher meetings at:
  - Burwood on 20 June 2011
  - Fairy Meadow on 23 June 2011
  - North Sydney on 19 July 2011
  - Armidale on 20 July 2011
  - Rooty Hill RSL on 28 July 2011
  - Maitland on 1 August 2011
- an online survey on the Board of Studies website for the period 14 June to 22 August 2011
- written submissions received from:
  - Albury and District Science Teachers' Group (ADSTG)
  - Australian Association of Special Education NSW (AASE)
  - Catholic Schools Office – Diocese of Broken Bay (CSOBB)
  - Catholic Education Office – Diocese of Lismore (CEOL)
  - Catholic Education Office – Diocese of Maitland-Newcastle (CEOMN)
  - Catholic Education Office – Diocese of Wilcannia-Forbes (CEOWF)
  - Catholic Education Office – Diocese of Wollongong (CEOW)
  - Catholic Education Office – Sydney Region (CEOSYD)
  - Essential Secondary Science Assessment (ESSA)
  - Great Lakes College – Forster Campus (GLC)
  - Independent Education Union (IEU)
  - Macquarie University Special Education Centre (MUSEC)
  - Mary Help of Christians Primary School – Toormina (MHCPS)
  - Mater Dei Catholic Primary School – Wagga Wagga (MDCPS)
  - NSW Department of Education and Communities (DEC)
  - NSW Primary Principals' Association (PPA)
  - NSW Teachers Federation (NSWTF)
  - Science Teachers' Association of NSW (STANSW)
  - St Francis Xavier Primary School – Woolgoolga (SFXPS)
  - St Joseph's Primary School – South Grafton (SJPS)
  - St Mary's Catholic Primary School – Bellingen (SMCPS)

  - St Mary's Primary School – Grafton (SMPS)
  - Sydney Region Secondary Science Network (SRSSN).

In addition, the Board of Studies conducted targeted consultation meetings on particular aspects of the syllabus. The targeted consultation program consisted of:

- whole-day primary teacher meetings at:
  - Bathurst on 11 August 2011
  - East Maitland on 19 August 2011
  - Wagga Wagga on 23 August 2011
  - St Marys on 26 August 2011
- special education meetings at:
  - offices of the Board of Studies on 12 August 2011
  - The Hills School, on 23 August 2011
  - Fisher Road School, on 30 August 2011
  - St Edmund's School, on 1 September 2011.

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

3 Summary of respondents

Consultation stakeholder and teacher meetings

1 stakeholder, 1 Board Curriculum Committee (BCC) and 10 teacher meetings

Stakeholders	10	BCC members	13	Teachers	455

Online survey respondents

232 online survey responses

Years of schooling:

Kindergarten to Year 6	76	Years 7 to 10	156

Sector:

Government	141	Catholic	31	Independent	53
Other	7				

Response from:

Principal	4	School Executive	64	Teacher	129
Parent	2	Student	0	Other	33

Number of people contributing to the response:

1	176	2	9	3	7
4	6	5	5	6 or more	29

3.1 Quantitative analysis of survey responses

Due to rounding, some percentages may not total to 100%

Survey item	Number of responses		Strongly agree		Agree		Disagree		Strongly disagree	
	K–6	7–10	K–6	7–10	K–6	7–10	K–6	7–10	K–6	7–10
Rationale 1. The rationale describes the nature of Science and Technology K–6 and Science 7–10 in broad terms and explains the place and purpose of the subject in the curriculum.	73	148	14%	16%	75%	79%	8%	3%	3%	2%
2. The rationale reflects a contemporary view of Science and Technology K–6 and Science 7–10.	73	151	18%	13%	67%	76%	12%	10%	3%	1%
Aim 3. The aim provides a statement of the overall purpose of the syllabus.	70	146	21%	16%	67%	77%	11%	6%	0%	1%
Objectives 4. The objectives define in broad terms the knowledge, understanding and skills, values and attitudes to be developed through the study of Science and Technology K–6 and Science 7–10.	68	143	16%	14%	69%	76%	13%	8%	2%	2%
Outcomes 5. The outcomes provide clear statements of the intended results of teaching Science and Technology K–6 and Science 7–10 in each stage.	64	138	19%	12%	55%	63%	25%	23%	2%	3%
6. The outcomes provide a basis for measuring and reporting student achievement.	64	136	14%	10%	50%	63%	34%	23%	2%	4%
Content 7. The content organisation and structure are appropriate to Science and Technology K–6 and Science 7–10.	62	126	13%	15%	61%	60%	18%	18%	8%	7%
8. The sequence of content is logical.	62	129	11%	9%	66%	64%	16%	23%	7%	4%

Survey item	Number of responses		Strongly agree		Agree		Disagree		Strongly disagree	
	K–6	7–10	K–6	7–10	K–6	7–10	K–6	7–10	K–6	7–10
9. The sequence of content is appropriate to the students' stage of development.	62	130	11%	5%	66%	66%	16%	24%	7%	5%
10. The content makes clear what students should learn in Science and Technology K–6 and Science 7–10.	63	130	19%	12%	50%	63%	24%	24%	7%	2%
11. The syllabus caters for the needs of all students.	60	130	10%	5%	60%	55%	25%	35%	5%	6%
12. There is a clear relationship between the objectives, outcomes and content.	60	118	10%	13%	62%	66%	22%	19%	7%	3%
13. Appropriate emphasis is given to the cross-curriculum areas in the content.	61	119	12%	13%	61%	63%	21%	19%	7%	5%
14. The cross-curriculum areas are represented in authentic ways.	61	120	5%	8%	59%	65%	30%	23%	7%	4%
15. The continuum of learning, presented through outcomes, content and Stage Statements, provides a useful description of the scope and sequence of learning in Science and Technology K–6 and Science 7–10 from Early Stage 1 to Stage 5.	59	119	10%	13%	58%	60%	25%	26%	7%	2%
16. The Stage Statements are an appropriate summary of what students know and can do by the end of the stage of learning.	59	120	9%	9%	61%	69%	24%	18%	7%	3%
17. The syllabus forms a sound basis for developing teaching and learning programs.	60	110	12%	10%	62%	58%	17%	28%	10%	4%
18. Existing resources can be used to teach the content.	59	113	10%	12%	66%	68%	17%	19%	7%	1%
Years 7–10 Life Skills 19. There is a clear relationship between the syllabus objectives and the Years 7–10 Life Skills outcomes.	n/a	92	n/a	4%	n/a	87%	n/a	8%	n/a	1%
20. Years 7–10 Life Skills outcomes provide a sound basis for guiding assessment and reporting of student achievement.	n/a	94	n/a	3%	n/a	78%	n/a	18%	n/a	1%

Survey item	Number of responses		Strongly agree		Agree		Disagree		Strongly disagree	
	K–6	7–10	K–6	7–10	K–6	7–10	K–6	7–10	K–6	7–10
21. Years 7–10 Life Skills outcomes and content provide sufficient scope for developing programs for students with special needs.	n/a	96	n/a	5%	n/a	71%	n/a	22%	n/a	2%
22. Years 7–10 Life Skills content adequately describes the scope of each outcome.	n/a	96	n/a	5%	n/a	74%	n/a	20%	n/a	1%
Assessment										
23. The assessment advice will assist teachers in making judgements about student achievement in a standards framework.	59	101	3%	6%	64%	67%	27%	21%	5%	6%
24. The advice on assessment strategies will assist teachers to apply the principles of assessment for learning.	59	103	7%	6%	64%	73%	24%	19%	5%	3%
25. The assessment advice for Years 7–10 Life Skills is appropriate.	n/a	98	n/a	5%	n/a	69%	n/a	24%	n/a	2%

4 Summary of key matters raised and proposed actions

Feedback affirming the directions for Science K–10
Consultation supported: • the reduction in the number of outcomes and the continuum in outcomes and content across K–10 Science and K–8 Technology • the integration in Years 7–10 of the knowledge of science and the knowledge about science from the Australian curriculum Science Understanding (SU) and Science as a Human Endeavour (SHE) strands • the retention in Years 7–10 of familiar content and assessment advice • the alignment of Life Skills outcomes and content with the regular Years 7–10 syllabus.

Key matters	**Proposed actions**
Rationale, aim and objectives K–10 The text density of the K–6 and Years 7–10 rationales needs to be reviewed to more clearly articulate the intent.	The rationales will be revised to more succinctly describe the place, purpose and contemporary nature of the learning areas
Values and attitudes should be included before the skills, knowledge and understanding in the rationale, aims, objectives and outcomes, to emphasise the overarching intent of the K–10 syllabuses.	In the Science and Technology K–6 and Science 7–10 syllabuses values and attitudes will be placed before the skills, knowledge and understanding in the rationale, aims, objectives and outcomes.
The ordering of the aims and objectives in K–6 and Years 7–10 should be revised to emphasise the central role of the skills in developing students' understanding of Science and Technology.	The ordering of the aims and objectives will be revised.
The wording of the K–6 Working Technologically objective requires clarification.	The wording of the K–6 objectives will be reviewed to improve clarity and intent.
The wording of the Years 7–10 knowledge and understanding objectives requires clarification, and ethics in the Years 7–10 values and attitudes objectives requires strengthening.	The wording of the Years 7–10 knowledge and understanding objectives will be reviewed to improve clarity and intent. Consideration will be given to the inclusion of ethics in the rationale, aims and/or objectives.
Outcomes K–10 The intent of some K–6 knowledge and understanding outcomes is unclear as they contain more than one part.	The K–6 knowledge and understanding outcomes will be revised and increased to improve clarity and specificity.
The level of the key words in some outcomes needs clarifying for stage appropriateness and consistency with the content.	The outcomes and content will be revised for stage appropriateness and consistency in the level of the key words.
There should be coding and numbering of the outcomes to assist programming.	The outcomes will be coded.

Key matters	Proposed actions
Content K–10 The inclusion of the Australian curriculum content descriptions in the document is confusing.	The format will be revised in light of consultation feedback from all learning areas.
The 'Organisation of content' section needs to be strengthened to emphasise syllabus requirements.	'Organisation of content' sections in Science and Technology K–6 and Science 7–10 syllabuses will be revised.
In K–6, the inclusion of a diagram would assist in clarifying the organisation of content.	A diagram will be included for Science and Technology K–6.
The wording of some knowledge and understanding content should be revised to improve clarity, scope, depth and cognitive demand.	The knowledge and understanding content will be revised to clarify scope, depth and cognitive demand.
The key words should be reviewed to improve the consistency in level within and across the knowledge and understanding content statements.	The consistency of the key word level within the content of the Science and Technology K–6 and Science 7–10 syllabuses will be reviewed.
The coding and numbering of the content should be included to align with the outcomes.	The approach to coding content will be consistent across all Phase 1 syllabuses.
Content K–6 In K–6, there appears to be a large amount of prescriptive content to address in the time available to schools.	The K–6 syllabus content has been developed to be taught within the current time allocation in NSW.
The content should be revised to focus on essential core knowledge, understanding and skills for Science and Technology.	The content will be revised to include the expected core learning required for NSW students to develop their understanding of Science and Technology.
Content Years 7–10 The structure of some knowledge and understanding content should be adjusted to: • provide a more equitable distribution in some sections • increase the flexibility to organise the content in programming • increase the opportunities to address the nature, development, uses and influence of science.	The organisation of the knowledge and understanding content will be adjusted.
At the start of each strand of syllabus content, a statement should be included that clarifies: • that the content is to be addressed within a stage • the organisation of the content in the skills strand • the organisation of the content in the knowledge and understanding strands.	The Board of Studies will develop a guide to accompany the syllabus that will clarify the syllabus structure and organisation. Further advice will be provided in support materials.
Cross-curriculum content areas An introduction to this section should be included to clarify: • the intent of the inclusion of the coding • that the cross-curriculum content can be addressed through other content.	The generic text and format of the document will be revised in light of consultation feedback from learning areas.

Key matters	Proposed actions
The keys for the codes should be included in each of the strands.	
The relevance, appropriateness and scope of some content should be reviewed.	The scope, relevance and appropriateness of the cross-curriculum content will be reviewed.
Life Skills content A clearer progression of learning should be provided by increasing the specificity and the number of Life Skills outcomes and related content.	Life Skills outcomes and content will be revised for clarity and level of demand to provide a clearer progression of learning.
Continuum of learning The text density of the stage statements needs to be reduced to improve accessibility and to summarise more clearly the knowledge, understanding, skills, values and attitudes to be developed by students at each stage. The relationship between the NSW syllabuses' Stage Statements and the Australian curriculum Achievement Standards in years requires clarification.	The Stage Statements will be revised to provide a more succinct summary of what students should know and be able to do by the end of a stage. The relationship between the parts of the continuum of learning will be reviewed.
Assessment There is a need for professional learning support and resources to assist with: • developing understanding of K–6 science and technology content • programming K–10 • assessment K–10. The accessibility of the K–6 assessment advice could be increased by locating it within the Science and Technology K–6 syllabus section and including specific types of K–6 strategies. The range of types of assessment for Years 7–10 should be increased.	Support materials developed by the Board of Studies will provide advice on programming and assessment. Further advice will be provided in support materials, and work samples will be available in the Assessment Resource Centre on the Board of Studies website. The advice on assessment will be included within the Science and Technology K–6 syllabus. Advice on specific types of assessment strategies for K–6 will be provided in support materials developed by the Board of Studies. The range of types of assessment tasks will be increased in Years 7–10. Advice on specific types of assessment strategies will be provided in support materials developed by the Board of Studies.
Other comments Provide support to assist with planning and programming including: • program overviews, scaffolds and/or proforma • outcomes and content mapping grids • professional learning.	Further advice will be provided in support materials. The Science and Technology K–6 and Science Years 7–10 syllabuses will not be required to be taught before 2014. This will allow for planning professional learning by sectors and professional associations.

5 Analysis

5.1 Rationale

Summary

Overall feedback for the Science and Technology K–6 and Science Years 7–10 rationales was positive. The majority of respondents from both primary (86%) and secondary (95%) surveys indicated that the rationales were clear, appropriate and provided a comprehensive overview of the contemporary nature of science and technology. Comments suggested that the rationales could more succinctly describe the place and purpose of Science and Technology in the curriculum. The clarity and consistency of use of some terms should also be reviewed.

Feedback affirming the rationale

Feedback	Sources
The rationales are clear, understandable and provided an appropriate overview of the place of Science in today's world.	MDCPS Consultation meeting (3) Survey (2)
The K–6 rationale clearly defines science inquiry, technology, active engagement, and acting critically and creatively.	CEOL CEOWF SMCPS SJPS SMPS SFXPS Consultation meeting (1)

Key matters raised and proposed actions

Key matters	Sources	Proposed actions
K–10 The text density of the K–6 and Years 7–10 rationales needs to be reviewed to more clearly articulate the intent.	BCC NSWTF SMCPS Stakeholder Consultation meeting (3) Survey (3)	The rationales will be revised to more succinctly describe the place, purpose and contemporary nature of the learning areas.
The clarity, consistency of use and inclusion of some terminology should be strengthened across the K–6 and Years 7–10 rationales.	Consultation meeting (4)	The rationales will be revised to clarify and strengthen consistency of use of terminology across K–10.
The term scientific literacy has not been used in the K–6 or 7–10 rationales.	Consultation meeting (2)	The key features/capabilities of scientific literacy are embedded in the rationales, aims and objectives.

Key matters	Sources	Proposed actions
Both rationales should be placed together at the start of the document to show the continuum across K–10 Science.	Stakeholder	The placement of material within the document may be revised in light of consultation feedback for all learning areas.

5.2 The place of the Science K–10 syllabus in the K-12 curriculum

Summary

There were no matters raised or areas requiring clarification identified in relation to this aspect of the syllabus through survey responses, written submissions, the Board Curriculum Committee meeting, Stakeholder meeting or consultation meetings.

5.3 Aim

Summary

Consultation meeting feedback indicated strong support for the aims, agreeing they are clear and concise in describing the overall purpose of the syllabuses. This was confirmed by primary (88%) and secondary (93%) survey respondents. The feedback strongly supported reordering the aims, objectives and outcomes to increase the prominence of the values and attitudes, as these are central to the intent and philosophy of the syllabuses.

Feedback affirming the aim

Feedback	Sources
The K–6 aim is succinct, provides a concise summary of the purpose of the syllabus and presents a contemporary view of education.	CEOWF MDCPS SMCPS Consultation meeting (4) Survey (1)

Key matters raised and proposed actions

Key matters	Sources	Proposed actions
K–10 The values and attitudes aim should be placed before skills, knowledge and understanding in K–6 and 7–10.	DEC BCC STANSW Stakeholder	The ordering of the aims will be revised to place the values and attitudes aims first in both K–6 and 7–10 syllabuses.
The consistency of use and inclusion of some terminology should be strengthened across the K–6 and Years 7–10 aims and rationales.	Consultation meeting (3)	The aims and rationales will be revised to strengthen consistency of use of terminology across K–10.
Revise the ordering of the aims in K–6 and 7–10 to emphasise the central role of the skills and to maintain consistency with each of the rationales.	DEC Consultation meeting (3)	The ordering of the K–6 and 7–10 skills aims will be revised.
Years 7–10 Reference to ethics should be included in the Years 7–10 values and attitudes aim.	Consultation meeting (2)	The wording of the rationale, aims and objectives will be reviewed.

5.4 Objectives

Summary

There was strong agreement from primary (87%) and secondary (90%) survey respondents that the objectives are clear and concise in defining the values and attitudes, skills, knowledge and understanding, developed through study in science and technology. This was supported by feedback from the BCC, consultation and stakeholder meetings. In K–6 and 7–10 the reordering of the values and attitudes objectives for consistency with the aims was supported.

Feedback indicated that in K–6 and Years 7–10 clarification of some objectives was required.

Feedback affirming the objectives

Feedback	Sources
The objectives are well set out, clear and easy to follow and emphasise the dynamic nature of science.	CEOWF BCC SM SMPS Consultation meeting (3) Survey (4)

Key matters raised and proposed actions

Key matters	Sources	Proposed actions
The ordering of the K–6 and 7–10 objectives should be consistent with the rationales and aims.	Stakeholder	The ordering of the K–6 and 7–10 objectives will be reviewed in conjunction with the rationales and aims to maintain consistency.
It should be made more explicit that the skills are the focus of learning.	NSWTF Consultation meeting (3)	The 'Rationale,' and 'Organisation of content' sections of the syllabuses makes this explicit.
The objectives should be reviewed to: • clarify the wording of the K–6 Working Technologically objective	CEOL SFXPS Consultation meeting (1)	The objectives of the K–6 and 7–10 syllabuses will be reviewed to take into account these comments.
• maintain consistency across K–10 in the naming of the syllabus strands	BCC STANSW Stakeholder Consultation meeting (3) Survey (1)	
• strengthen the emphasis on the nature, development, uses and influence of science in the 7–10 objectives	Consultation meeting (3)	

Key matters	Sources	Proposed actions
• reduce the wordiness of the 7–10 knowledge and understanding objectives • include reference to ethics in the 7–10 values and attitudes objectives.	BCC NSWTF Stakeholder Consultation meeting (3)	

5.5 Outcomes

Summary

The reduction in the number of outcomes and the development in cognitive demand within and across the Science and Technology K–6 and Science Years 7–10 draft syllabuses were strongly endorsed by teachers, BCC, stakeholders and the online survey respondents.

Consultation meeting feedback indicated support for the inclusion of the nature, development, uses and influence of science as knowledge and understanding outcomes. In Stages 4 and 5 the clarity of the developmental continuum of the outcomes and the correlation between the outcomes and content was recognised and supported.

Survey responses for both syllabuses agreed that the outcomes are clear statements of the intended learning (75%). The majority of respondents also supported the view that the outcomes provide a basis for measuring and reporting student achievement. Feedback indicated that some outcomes should be revised for clarity of intent, stage appropriateness and consistency of level of the key words with the content.

Feedback strongly recommended that the outcomes should be coded to assist with developing teaching programs.

Feedback affirming the outcomes

Feedback	Sources
K–10 The reduction in the number of outcomes is positive.	Consultation meeting (3) Survey (3)
The outcomes are clear, logical and assessable with an emphasis on content and processes.	MDCPS SMCPS SFXPS Consultation meeting (1) Survey (4)
In the NSW Science Years 7–10 draft syllabus, the inclusion of the 'knowledge of and about science' together in the knowledge and understanding strand is viewed as positive, improving the quality of the outcomes.	DEC Consultation meeting (3)
The correlation between outcomes and content, and the cognitive development in outcomes from Stages 4 to 5 is clear.	CEOW Consultation meeting (1)

Key matters raised and proposed actions

Key matters	Sources	Proposed actions
K–10 To assist in programming, the outcomes should be coded and/or numbered throughout the document.	DEC CSOBB CEOSYD CEOW CEOWF BCC PFG (3) SRSSN Stakeholder Consultation meeting (6)	Outcomes will be coded in a consistent way across all Phase 1 syllabuses.
The reason that the K-10 knowledge and understanding outcomes are organised by stages needs to be clarified.	CEOL MHCPS Consultation meeting (1)	Feedback from the NSW consultation on the draft Australian curriculum supported the retention of stages in NSW syllabuses.
K–6 The intent of some knowledge and understanding outcomes is unclear as they contain more than one part.	DEC BCC NSWTF Stakeholder	The K–6 knowledge and understanding outcomes will be revised and increased to improve clarity and specificity.
Some outcomes require clarification of the level of the key words for stage appropriateness and/or consistency with the underpinning content.	CEOSYD BCC ESSA Consultation meeting (3) Survey (2)	The outcomes will be revised for stage appropriateness and to maintain consistency with the content in the level of demand of the key words.
Years 7–10 Specific reference to the terms critical thinking and scientific literacy does not appear in the outcomes.	Consultation meeting (4)	The key features/ capabilities of critical thinking and scientific literacy are embedded in the content.
It should be made explicit that values and attitudes outcomes are to be included in the learning program.	CEOW BCC Stakeholder Consultation meeting (6)	This is explicitly stated in the organisation of the content (Section 7). The generic text in assessment advice (Section 10) may be revised in light of consultation feedback from all learning areas.

5.6 Content

Summary

Consultation feedback provided strong support for the continuum of outcomes and content across K–10 Science and K-8 Technology. The reduction in the layers of content through the integration of the Australian curriculum Science Understanding and Science as a Human Endeavour strand content was seen as a strength.

Feedback from consultation meetings and survey respondents (primary 70% and secondary 78%) indicated that there is a clear relationship between the objectives, outcomes and content. While respondents noted the logical sequencing and stage appropriateness of content, comments indicated the need across K–10 to review the consistency of level of some key words within the content and between the content and some outcomes.

The 'Organisation of content' section in the syllabuses was identified as an area where greater clarity is required. Feedback from some respondents suggested that the organisation of the Years 7–10 knowledge and understanding content could be improved if greater flexibility was provided.

Consultation feedback and some survey respondents indicated that there were some inconsistencies in the cognitive demand between the outcomes and the content within the content of a stage. Some knowledge and understanding content was identified as requiring clarification of the intended scope and depth. The majority of survey respondents who indicated the syllabus does not meet the needs of all students, were commenting specifically about the provision of appropriate programs for students with special education needs.

Consultation meeting, survey, BCC and stakeholder feedback supported the use of coding to enhance the clarity of the structure and organisation of the content, and to assist in programming.

The majority of primary (72%) and secondary (76%) survey respondents agreed that the emphasis given to cross-curriculum content areas is appropriate. Feedback identified that the intent of the cross-curriculum codes required clarification as did the scope and authenticity of some content.

Secondary survey respondents agreed (87%) that existing resources can be used to teach the content. Primary survey respondents (34%) indicated that existing K–6 resources would not be useful to teach the syllabus content and that new support materials would be required.

Feedback affirming the content

Feedback	Sources
Syllabus structure The sequence of content and strand organisation is logical and appropriately presented. The simplification of the structure by the integration of the content of the Australian curriculum Science Understanding and Science as a Human Endeavour strands is seen as an improvement.	DEC Consultation meeting (4) Survey (1)
Amount of content The amount of content in K–6 can be taught within the suggested time.	Stakeholder
Content statements K–10 The content statements are clear, specific, and support the teaching of the outcomes.	CEOW SRSSN Survey (1)
Organisation of content K–6 In K–6 Science and Technology the clear connection between the process strands of Working Scientifically and Working Technologically as the way of learning the knowledge, understanding and skills is positive.	DEC

Key matters raised and proposed actions

Key matters	Sources	Proposed actions
Syllabus structure K–10 The reason that the K–10 knowledge and understanding content is organised by stages and not by years as in the Australian curriculum requires clarification.	CEOSYD CEOW Survey (1)	Feedback from the NSW consultation on the draft Australian curriculum supported the retention of stages in the NSW syllabuses curriculum.
The reason that the syllabus organisers are not the strands of the Australian curriculum needs to be clarified.	CEOW Consultation meeting (1) Survey (1)	The draft NSW syllabuses incorporate the Australian curriculum strands. In K–6, the technology strands provide the continuum with the NSW *Technology (Mandatory) Years 7–8 Syllabus*.
Amount of content K–6 In K–6 there appears to be a large amount of prescriptive content to be addressed in the time available to schools. In K–6 the fact that the knowledge, understanding and skills content is essential learning, needs to be clarified.	CSOBB CEOL CEOW PFG (3) NSWTF BCC IEU Stakeholder Consultation meeting (4)	The K–6 Science and Technology syllabus has been developed to be taught within the current time allocations in NSW. The draft syllabus content clarifies the Australian curriculum for NSW. The K–6 Science and

Key matters	Sources	Proposed actions
	Survey (1)	Technology syllabus provides the breadth and depth of the expected core of learning required for students to develop their understanding of Science and Technology.
Amount of content Years 7–10 In Years 7–10 there appears to be a large amount of content to be addressed in the indicative hours.	CSOBB NSWTF STANSW Consultation meeting (2)	The draft syllabus content reflects the scope of the current *Science Years 7–10 Syllabus.* There is an integration of concepts from both the SU and SHE strands, making the content more manageable.
Years 7–10 content is too prescriptive.	ESSA Survey (2)	The draft syllabus content is based on the current content prescribed in the *Science Years 7–10 Syllabus*. The content will be reviewed to reflect what is essential to clarify the scope and depth of the Australian curriculum content descriptions.
Organisation of content K–10 This section in each syllabus needs to be reviewed to clarify: • that content from across the strands should be integrated within appropriate contexts when developing units of work • that content includes skills, knowledge and understanding and is the expected essential learning • that the content points in the skills strand can be separated and taught explicitly • that students develop their knowledge and understanding of science and technology through actively undertaking the processes of Working Scientifically K–10 and Working Technologically in K–6 • the relationship between the overarching statement and the underpinning content points in the knowledge and understanding strands • some of the terminology used in the syllabus organisation across K–10.	DEC CSOBB CEOMN CEOSYD CEOW NSWTF ESSA GLC Stakeholder Consultation meeting (2) Survey (6)	The ‘Organisation of content’ sections of the syllabuses will be reviewed to address these areas. Further advice will be included in support materials.

Key matters	Sources	Proposed actions
Organisation of content K–6 Review this section to clarify the use of the terms strand and substrands.	CSOBB CEOL CEOSYD CEOW NSWTF Stakeholder Consultation meeting (4) Survey (3)	The 'Organisation of the content' section of the K–6 syllabus will be revised.
A graphic organiser should be included to show the relationships between the elements of the K–6 Science and Technology syllabus.	CSOBB CEOL CEOSYD PFG (3) BCC Stakeholder Consultation meeting (4)	A diagram will be included in this section of the K–6 Science and Technology syllabus.
Organisation of content Years 7–10 The relationship between Working Scientifically and the Student Research Project should be clarified.	Consultation meeting (2)	A statement outlining the relationship of Working Scientifically and the Student Research Project will be included.
Content statements K–10 The scope and depth of a range of content points needs to be clarified.	DEC BCC IEU Consultation meeting (5) Survey (1)	Content statements will be revised to address these matters.
The consistency of the cognitive demand of the key words and developmental sequence across stages in the skills content needs to be reviewed.		
The key word level of the knowledge and understanding content should be reviewed for consistency: • within the underpinning content and the overarching statements • between the content and the outcomes.	STANSW	
The cognitive demand of some knowledge/understanding content should be adjusted to make it more stage appropriate.	CSOBB Consultation meeting (3) Survey (2)	
The syllabus content has limited opportunities to show higher order thinking to challenge the more able students.	CEOW NSWTF ESSA Survey (1)	

Key matters	Sources	Proposed actions
Content statements Years 7–10 The structure of some knowledge and understanding content needs to be adjusted to: • increase flexibility to address the nature, development, uses and influence of science • provide a more equitable distribution of content.	BCC NSWTF STANSW Stakeholder Consultation meeting (1)	Content statements will be revised in relation to these matters.
The mandatory requirement for the use of data loggers in Years 7–10 should be removed.	DEC Consultation meeting (4)	Content statements will be revised. Data loggers are an example of a digital technology that may be used.
Some content is incorrectly placed in a stage.	ADSTG Consultation meeting (2)	The Australian curriculum content descriptions were endorsed by state and territory Ministers and are included unaltered in NSW syllabuses.
The flexibility of programming is reduced by the organisation of the knowledge and understanding content.	BCC STANSW Stakeholder Consultation meeting (1)	The structure and organisation of content will be revised to provide increased flexibility.
Content format K–10 The dot points and hyphens require coding with numbering and letters related to the outcomes to assist in programming.	DEC CEOWF BCC Stakeholder Consultation meeting (5) Survey (7)	The approach to coding of content will be consistent across all Phase 1 syllabuses.
The inclusion of the Australian curriculum is not required, as the NSW syllabuses clarify the content descriptions.	BCC Stakeholder Consultation meeting (5)	The placement of Australian curriculum content may be revised in light of consultation feedback from all learning areas.
The current position of the Australian curriculum content descriptions in the print version separating the NSW outcomes and content is confusing.	DEC BCC Stakeholder Consultation meeting (5) Survey (2)	The Australian curriculum content descriptions will be integrated rather than the current separate presentation.
The start of each strand of syllabus content should include a statement clarifying: • that the content is to be addressed within a stage	Consultation meeting (4) Survey (4)	The Guide to the syllabus and ‘Organisation of content’ sections of the syllabuses will clarify these areas.

Key matters	Sources	Proposed actions
• the organisation of the skills strand content • the relationship between the overarching and underpinning content statements in the knowledge and understanding strands.		In revising the format of the syllabus, a statement to clarify the organisation of content may be included above each of the strands.
A clearer format should be used to show the organisation of the knowledge and understanding content and to make the document easier to read.	CEOSYD BCC	The format will be revised in light of consultation feedback from all learning areas.
The use of some italicised subheadings within the knowledge and understanding content blocks in Years 7–10 would make the documents more user-friendly.	CSOBB CEOSYD Consultation meeting (2)	In reviewing the content, the appropriate use of italicised subheadings will be considered.
The use of two columns and/or learn about and learn to would be more user-friendly in a print version of the syllabus.	Consultation meeting (1)	The format and placement of the content will be revised in light of consultation feedback from all learning areas.
Cross-curriculum areas An introduction to this section should be included that clarifies: • the intent of the inclusion of the coding • whether the cross-curriculum content can be addressed through other content. A key for the codes should be provided.	CEOSYD CEOW BCC STANSW Stakeholder Consultation meeting (3) Survey (1)	The generic text will be revised in light of consultation feedback from all learning areas.
The content should be revised to enhance the scope of treatment of Asia and Australia's relationship with Asia, Sustainability and Environment, Aboriginal and Torres Strait Islander Histories and Cultures.	DEC BCC NSWTF STANSW Stakeholder Consultation meeting (4) Survey (2)	The generic text will be revised in light of consultation feedback from all learning areas.
The content should be reviewed and consolidated to match Critical and Creative thinking.		All cross-curriculum areas will be reviewed for relevance and appropriateness.
The relevance and appropriateness of the inclusion of Civics and Citizenship in Science is not clear.		
Some areas of literacy and numeracy are not adequately addressed.		
The relevance and appropriateness of the inclusion of Intercultural Understanding, Difference and Diversity, and Personal and Social Competence in Science and Technology was raised.	Consultation meeting (1) Survey (1)	

Key matters	Sources	Proposed actions
Glossary The Glossary needs to be updated with appropriate descriptions relevant to Science and Technology K–6 that is consistent with those used in the Years 7–10 Glossary.	Consultation meeting (1)	The Years 7–10 Glossary will be revised.

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

Summary

The provision of curriculum materials inclusive of the full range of students was supported. The inclusion of the Years 7–10 Life Skills content and outcomes in the Science syllabus was also supported.

There was also support for the advice about the inclusion of students with special education needs. Respondents noted that the advice regarding curriculum options for and assessment of students with special education needs was appropriate. Respondents also identified the value of existing support materials in providing further advice relating to students with special education needs.

Survey respondents (91%) supported the alignment of the Life Skills outcomes and content with the regular Science Years 7–10 syllabus. Respondents agreed (76%) that the Life Skills outcomes and content provide a sound basis for differentiating the curriculum for students undertaking the Life Skills course. Advice from the BCC, survey and consultation meetings indicated that some outcomes and content should be reviewed for clarity and level of demand.

Feedback indicated that the K–6 outcomes were inclusive of all learners.

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

Feedback	Sources
Support for information about students with special education needs	
Advice regarding curriculum options, including the use of adjustments for students with special education needs was seen as relevant.	DEC CEOSYD NSWTF
Assessment and reporting advice for students with special education needs was seen as appropriate.	DEC
Existing support materials for students with special education needs provide relevant advice in relation to providing relevant teaching, learning and assessment opportunities.	NSWTF SEC
Support for Science Life Skills	
The Life Skills outcomes and content provide a comprehensive basis from which to customise material and allow for appropriate differentiation.	Stakeholder Survey (1)
Alignment of Life Skills outcomes and content with the Years 7–10 syllabus content is positive, with consideration to both courses being taught in the same classroom.	Consultation meeting (2)
The K–6 outcomes and content are inclusive of the range of students.	AASE Stakeholder

Key matters and proposed actions

Key matters	Sources	Proposed actions
Syllabus information and advice relating to students with special education needs Clarification is required about some of the advice, including the role of curriculum planning; access to age appropriate content; adjustments to teaching, learning and assessment; the definition of students with special education needs and the students for whom the Life Skills course is designed.	DEC SE NSWTF SEC BCC (History)	The advice provided in Sections 1.2, 8 and 10 will be reviewed and clarified. The revised national definition of disability and the Disability Standards for Education will be used in this process.
Advice about how to program to meet the individual needs of students across a range of settings is required.	NSWTF BCC (Mathematics) SE SEC	Advice about planning, programming and making adjustments to teaching, learning and assessment activities to meet the needs of students with special education needs will be provided in support materials. Advice in the support document *Life Skills Years 7–10: Advice on Planning, Programming and Assessment* will also be reviewed.
Clarification is required about course options and requirements for students with special education needs, including students with special education needs in K–6 and students undertaking Life Skills outcomes and content.	DEC CSOBB SE NSWTF MUSEC (response to draft English syllabus) SEC Consultation meeting (2) Survey (2)	The advice provided in the syllabus and in the support materials will be reviewed and clarified.
Science 7–10 objectives The wording in some objectives could be clarified.	AASE Stakeholder	The objectives of the 7–10 syllabus will be reviewed to take into account these comments.
Science Life Skills outcomes Some Life Skills outcomes may be at too high a cognitive level. The wording in some outcomes requires minor revisions to better clarify the scope and depth. It is difficult to align some outcomes to regular syllabus outcomes.	AASE CSOBB SE BCC Stakeholder Survey (1)	The outcomes will be revised to improve: • cognitive demand • clarity of the scope and depth • alignment with the regular syllabus outcomes.

Key matters	Sources	Proposed actions
		The number of outcomes will be increased to provide greater clarity and flexibility. The generic text will be reviewed in light of consultation feedback from all learning areas to clarify that students are not required to complete all outcomes.
Science Life Skills content The cognitive demand of some content is too high. The scope and depth of some content requires clarification.	AASE CSOBB STANSW BCC Stakeholder Consultation meeting (2) Survey (1)	The content will be revised to: • address the cognitive demand • increase clarity of the scope and depth.
The amount of content may need to be reduced.	Consultation meeting (2)	Students are not required to complete all Life Skills content. The generic text will be reviewed in light of consultation feedback from all learning areas to clarify that content is selected to address the outcomes that meet the needs, goals and priorities of each student.
Science Life Skills assessment Further advice on assessment and reporting of Life Skills is required.	IEU Consultation meeting (1)	Advice on assessment will be provided in support materials.

5.8 Continuum of learning in Science K–10

Summary

Feedback indicated that there is a clear and logical K–10 continuum in Science and K–8 continuum in Technology.

While the Stage Statements are seen to represent an appropriate summary of what students should know and be able to do by the end of each stage (primary 70% and secondary 79%), some feedback indicated that a clearer summary would increase the user-friendliness of the Stage Statements.

A number of primary (27%) and secondary (32%) survey respondents indicated that additional support beyond the continuum of learning in the syllabus was required for developing teaching and learning programs. Across K–10, professional learning to support implementation of the syllabuses was identified as a priority.

Feedback affirming the continuum of learning in Science K–10

Feedback	Sources
The continuum of learning is logical, comprehensive and links primary and secondary.	CEOL CEOWF SJPS SMCPS Consultation meeting (4)

Key matters and proposed actions

Key matters	Sources	Proposed actions
K–10 The text density of the Stage Statements needs to be reduced to improve accessibility. A summary of the values and attitudes, skills, knowledge and understanding would more clearly outline what is to be developed by students at each stage.	CSOBB CEOSYD BCC NSWTF Consultation meeting (5) Survey (3)	The Stage Statements will be reviewed to more clearly summarise the syllabus values and attitudes, skills, knowledge and understanding to be developed by students for the stage.
The format needs to be more user-friendly to increase readability, eg a table or dot points.	Survey (2)	Stage Statements will be reviewed to address issues of readability.
The Stage Statements should be placed at the front of the print document.	DEC CEOSYD BCC Stakeholder Consultation meeting (3) Survey (4)	The placement of generic text will be revised in light of consultation feedback from all learning areas.

Key matters	**Sources**	**Proposed actions**
Values and attitudes outcomes should be evident in the Stage Statements.	Consultation meeting (1)	The Stage Statements will be reviewed to strengthen the values and attitudes.
The relationship between the Stage Statements and the Australian curriculum Achievement Standards needs to be clarified.	Consultation meeting (2)	The generic text will be revised in light of consultation feedback from all learning areas.
Work samples that relate to the Stage Statements need to be provided in the support materials.	Consultation meeting (1) Survey (5)	Work samples with annotations are currently provided in the Assessment Resource Centre on the Board of Studies NSW website.
Stage Statements for Early Childhood would be of assistance to show the continuum.	BCC	The generic text will be revised in light of consultation feedback from all learning areas.

5.9 Assessment

Summary

Consultation feedback supported the emphasis on assessment for learning principles, formative assessment and the inclusion of assessment information for students with special education needs. The retention of familiar assessment advice was supported.

Primary survey respondents indicated that the assessment advice (32%) and assessment strategies (29%) in the syllabus could be strengthened. This was supported by feedback from consultation meetings.

Clarification of the distinction between assessment and reporting was identified as an area requiring further work.

Across K–10, professional learning and support materials were identified as essential to provide teachers with advice on programming and assessment.

Feedback affirming the assessment advice

Feedback	Sources
The assessment material presented is similar to that provided in the current Science Years 7–10 syllabus. The inclusion of a focus on formative assessment and assessment for learning is supported.	SJPS Consultation meeting (2) Survey (4)

Key matters raised and proposed actions

Key matters	Sources	Proposed actions
K–10 The reference to the A-E Common Grade Scale should be consistent with current reporting policy.	BCC NSWTF Stakeholder Consultation meeting (1)	The generic text will be revised for consistency with current policy. Specifically, with reference to the use of a Common Grade Scale (A-E *or equivalent*) to report student levels of achievement.
It should be made explicit that values and attitudes outcomes are not assessed for purposes of School Certificate grading.	Consultation meeting (1)	The generic text makes explicit that values and attitudes outcomes are not included in the assessment of learning for determining a student's grades.

Key matters	Sources	Proposed actions
The inclusion of text relating to the application of standards-referenced assessment would be of assistance.	Stakeholder	The content and placement of generic text will be revised in light of consultation feedback from all learning areas.
The 'Reporting' section should be after 'Assessment' in the document.	CEOW	The format and placement of generic text will be revised in light of consultation feedback from all learning areas.
Assessment should be at the front of the syllabus.	Consultation meeting (1)	
There needs to be greater clarity and advice in this section on the relationship to the achievement standards.	IEU Survey (1)	The generic text will be reviewed in light of consultation feedback from all learning areas.
Course Performance Descriptors for Stage 4 need to be developed.	Consultation meeting (1)	The development of Course Performance Descriptors for each stage will be considered in light of consultation feedback from all learning areas.
There is a need for professional learning support and resources to assist with: • developing understanding of K–6 science and technology content • programming K–10 • assessment K–10.	STANSW Consultation meeting (3) Survey (3)	The Science and Technology K–6 and Science Years 7–10 syllabuses will not be required to be taught before 2014. This will allow for professional learning activities to be planned for teachers. Support materials developed by the Board of Studies will provide advice on programming and assessment.
K–6 The accessibility of the K–6 assessment advice could be increased by locating it within the Science and Technology K–6 syllabus section and including specific types of K–6 strategies.	Consultation meeting (2)	The advice on assessment will be included within the K–6 Science and Technology syllabus. Advice on specific K–6 strategies will be provided in support materials developed by the Board of Studies.

Key matters	Sources	Proposed actions
Years 7–10 The range of types of assessment strategies needs to be increased to include those in the current syllabus.	DEC BCC	The range of examples of assessment strategies will be increased. Advice on specific assessment strategies will be provided in support materials developed by the Board of Studies.
Clarification of some terminology is required, including the use of the terms 'validity' and 'reliability' in the generic text.	Consultation meeting (2)	The generic text will be revised in light of consultation feedback from all learning areas.
Common Grade Scale and work samples should be included.	Consultation meeting (3)	These are available in the Assessment Resource Centre on the Board of Studies NSW website.
Life Skills The A–E reporting process for students with special education needs, particularly those working on outcomes and content from a different stage, needs to be reviewed.	SEC NSWTF	Section 10.3 provides flexibility for school sectors in the ways of reporting for students with special education needs.
Advice regarding accommodations (changes to the environment), as well as learning adjustments (changes to teaching and learning), should be included in the 'Assessment for students with special education needs' section.	DEC	Consistent with the Disability Standards for Education 2005, the term 'adjustments' applies to all measures taken to assist a student with a disability to participate on the same basis as their peers.

5.10 Other comments

Summary

Respondents commented on the strength of the draft document and provided some suggestions for syllabus additions to support teachers.

The provision of appropriate targeted professional learning to support syllabus implementation was identified as an essential requirement across K–10.

Feedback affirming the general directions of the draft syllabus

Feedback	Sources
The document is workable with specificity assisting new teachers to deliver the course and no real issues surrounding implementation.	ADSTG Consultation meeting (4)
With appropriate programming and the use of assessment for learning strategies, the syllabuses have the potential to cater for the needs of all students and to be manageable in the time allocations in NSW.	Stakeholder Survey (1)

Key matters raised and proposed actions

Key matters	Sources	Proposed actions
A guide to the syllabus should be included in the syllabus.	Consultation meeting (1)	An explanatory guide will be incorporated in the syllabus.
K–10 teachers advised that to assist with planning and programming, the support documents should include program overviews, scaffolds and/or proformas, and outcomes and content mapping grids.	Consultation meeting (2) Survey (1)	Support materials developed by the Board of Studies will provide advice on programming and assessment.
The Science and Technology Key Learning Areas should be separated into two disciplines in K–6.	CSOBB CEOW Survey (1)	The NSW Education Act (1990) places Science and Technology in K–6 as a single Key Learning Area.

6 Respondents

6.1 Responses were received from the following organisations and groups

Organisations and groups	Code
Albury and District Science Teachers' Group	ADSTG
Australian Association of Special Education NSW	AASE
Board of Studies Special Education Committee	SEC
Catholic Schools Office – Diocese of Broken Bay	CSOBB
Catholic Education Office – Diocese of Lismore	CEOL
Catholic Education Office – Diocese of Maitland-Newcastle	CEOMN
Catholic Education Office – Diocese of Wilcannia-Forbes	CEOWF
Catholic Education Office – Diocese of Wollongong	CEOW
Catholic Education Office – Sydney Region	CEOSYD
Essential Secondary Science Assessment	ESSA
Great Lakes College – Forster Campus	GLC
Independent Education Union	IEU
Macquarie University Special Education Centre	MUSEC
Mary Help of Christians Primary School – Toormina	MHCPS
Mater Dei Catholic Primary School – Wagga Wagga	MDCPS
NSW Department of Education and Communities	DEC
NSW Primary Principals' Association	PPA
NSW Teachers Federation	NSWTF
Science Teachers' Association of NSW	STANSW
Special Education teacher focus group	SE
St Francis Xavier Primary School – Woolgoolga	SFXPS
St Joseph's Primary School – South Grafton	SJPS
St Mary's Catholic Primary School – Bellingen	SMCPS
St Mary's Primary School – Grafton	SMPS
Sydney Region Secondary Science Network	SRSSN

6.2 Board Committees

Board Curriculum Committee consultation meeting on 11 August 2011 (code: BCC)

Name	Title/Organisation
Dr Timothy Wright	Chairperson
Ms Wendy Abernethy	Association of Independent Schools of NSW
Mr Stephen Bomford	Primary Curriculum Committee
Mr Michael Bourke	TAFE NSW
Mr Anthony Manning	Catholic Education Commission, NSW
Mrs Susan Millar	Association of Independent Schools of NSW
Dr Richard Morante	NSW Department of Education and Communities
Mr Michael Morgan	NSW Teachers Federation
Ms Karen Morton	NSW Teachers Federation
Dr Mitch O'Toole	NSW/ACT Committee of Chairs of Academic Boards
Mrs Mandy Shaw	NSW Department of Education and Communities
Ms Margaret Shepherd	Professional Teachers' Council NSW
Ms Jacqueline Slaviero	Professional Teachers' Council NSW

6.3 Teacher consultation meetings

Science and Technology K–6 and Science Years 7–10 Draft Syllabus afternoon consultations

Venue	Date	K–6	Years 7–10	Life Skills	Unspecified	Total
Burwood	20 June	7	23	0	5	35
Fairy Meadow	23 June	9	35	0	6	50
North Sydney	19 July	16	35	3	5	59
Armidale	20 July	12	10	3	0	25
Rooty Hill	28 July	29	67	5	9	110
Maitland	1 August	15	57	17	7	96
	Total	**88**	**228**	**28**	**32**	**375**

Primary meetings

Venue	Date	Number of participants	Code
Bathurst	11 August	15	PFG
East Maitland	19 August	18	
Wagga Wagga	23 August	17	
St Marys	26 August	16	
	Total	**66**	

Special education meeting

Venue	Date	Number of participants	Code
Board of Studies	12 August	14	SE