NSW EDUCATION STANDARDS AUTHORITY

Biology
Stage 6

Draft Syllabus

Consultation Report
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1 Background information

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

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

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

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

- a meeting of the Years 11–12 Science Board Curriculum Committee on 24 August 2016
- face-to-face consultation meetings
- targeted consultation meetings for:
  - Aboriginal education
  - Special education
  - Industry.
- student voice meetings
- an online survey on the NESA website
- written submissions.

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

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

2 Executive summary

The *Biology Stage 6 Draft Syllabus Consultation Report* provides a description of the consultation process and a summary and analysis of feedback received. It details the data and findings gathered from a meeting of the Years 11–12 Science Board Curriculum Committee, 4 metropolitan and 3 regional face-to-face consultation meetings, 6 targeted consultation meetings, 2 student voice meetings, 167 responses to an online survey and 15 written submissions.

There was strong support for the Biology draft syllabus. An issue raised by a large number of responses was that there was too much content in the syllabus, particularly in Year 11, and that the depth of the content needed to be clarified.

There was a large response supporting the concept of the depth study. However, a desire for more information to clarify the requirements and support the implementation of depth studies was evident.

Some responses highlighted that the depth of intent of the syllabus content needed clarification. Responses also highlighted that the use of verbs and clarification of terms, such as ‘investigate’, would assist teachers.

A small number of respondents indicated that the skills of Working Scientifically did not show a continuum of learning from Stage 5 and that Science as a Human Endeavour (SHE) had not been integrated. These issues were not identified by the majority of respondents.

Responses indicated a preference for a higher weighting of the examination component of assessment and a requirement for further clarification of the assessment of the depth study.

Aboriginal and Torres Strait Islander representatives strongly supported the inclusion of Aboriginal and Torres Strait Islander histories and cultures content in the syllabus, and noted that the content was authentic.

3 Key matters

Key matters	Actions
There is too much content in the Year 11 course.	The content in the Year 11 course has been reduced in Module 2.
More detail is required to ensure that the content is clear to prepare students for the HSC.	Content has been re-written and verbs have been included, where appropriate, to ensure the content is clear.
Clarification is required about depth studies and how they are to be implemented, monitored and assessed.	A range of support materials – including sample scope and sequences, assessment tasks and programs – will be developed and released in 2017 to support syllabus implementation.

4 Analysis

4.1 Rationale

Summary

The majority of survey respondents agreed that the rationale describes the nature and purpose of the syllabus. Some respondents commented that reference should be made to STEM and models, theories and laws of Biology.

Feedback affirming the rationale

Feedback	Sources
The rationale is clear and concise, captures the distinctive nature of the subject in the curriculum, and is supported.	SCS Survey (x133)
The rationale comprehensively describes the nature and purpose of the syllabus in accessible language.	SCS Submission 1

Key matters and actions

Key matters	Sources	Actions
Reference to STEM and models, theories and laws of Biology should be included.	DoE STANSW Survey (x4)	The rationale has been reviewed and STEM opportunities have been included. Models and theories of Biology have also been included where relevant.

4.2 Aim

Summary

The majority of respondents agreed that the aim provides a succinct statement of the overall purpose of the syllabus. Some refinements to the aim were suggested.

Feedback affirming the aim

Feedback	Sources
The proposed aim provides an appropriate statement of the overall purpose of the syllabus.	CSOArm CSOLism DoE SCS Survey (x135)
It was generally agreed that the aim of the syllabus was clear and emphasised the nature and practice of Biology.	DoE Submission 1

Key matters and actions

No key matters were raised.

4.3 Objectives

Summary

The majority of respondents supported the proposed objectives, noting that they were broad and clear.

Feedback affirming the objectives

Feedback	Sources
The objectives broadly define the knowledge, skills, understanding, values and attitudes to be developed through studying the syllabus.	DoE Survey (x124)

Key matters and actions

Key matters	Sources	Actions
The objectives should include greater detail in order to make the skills of Working Scientifically more explicit.	Survey (x5)	The Working Scientifically objective has been reviewed.

4.4 Outcomes

Summary

The majority of respondents agreed that the outcomes describe what students are expected to know, understand and do. A number of respondents commented favourably on the inclusion, description and clarity of the Working Scientifically skills outcomes.

Feedback affirming the outcomes

Feedback	Sources
The outcomes in the draft syllabus are similar to those in the current syllabus – this is both relevant and appropriate.	Survey (x4)
The focus on Working Scientifically outcomes was strongly favoured.	DoE

Key matters and actions

Key matters	Sources	Actions
A continuum of learning from Stage 5 to Stage 6 needs to be represented with respect to the syllabus outcomes.	SCS STANSW Survey (x7)	Working Scientifically outcomes have been modified into a single Stage 6 set of outcomes. These have been reviewed with respect to Stage 5 to ensure a continuum of learning.

4.5 Course structure and requirements

Summary

The majority of respondents expressed support for the statement that the course structure and requirements are clear, manageable and appropriate. Some respondents raised that the amount of Year 11 content was too much to cover in the three-term cycle.

Feedback affirming the course structure and requirements

Feedback	Sources
For more able students, the depth study provides opportunities for extension and acquiring a deeper understanding.	AIS SCS STANSW Survey (x11)
The concept of the depth study and its inclusion in the course was supported.	AIS SCS STANSW Survey (x71)
Working Scientifically is has been appropriately incorporated into the content.	Submission 1

Key matters and actions

Key matters	Sources	Actions
More detail about depth studies is required and examples provided that demonstrate opportunities for differentiated learning.	AIS CCSOBB Epping (CM) Gosford (CM) SCS STANSW Survey (x24) Submission 1	The examples listed in the course have been reviewed to reflect a range of learning expectations as appropriate.
The modules should not be of equal length given the term time allocation in Year 11 and Year 12 is not similar.	Canterbury (CM) Manly (CM) Survey (x2)	Module content has been reduced in Modules 2, 7 and 8.
There is too much content in the Year 11 course.	AIS SCS Survey (x10)	Year 11 content has been reviewed and reduced in Module 2.
Further details about HSC examination specifications are required.	AIS CCSOBB SCS STANSW	Examination and assessment information will be distributed in 2017.

Key matters	**Sources**	**Actions**
Further clarification and detail is required for school-based assessment, including the depth study.	AIS CCSOBB SCS STANSW	Assessment and reporting support materials will be released in 2017.
Clarification is required about the purpose of the inquiry questions.	AIS CCSOBB SCS STANSW	The purpose of the inquiry questions has been clarified.
References and terminology used in regard to practical work are too broad and need to be clarified.	AIS CCSOBB Survey (x1)	A definition for ‘practical investigation’ has replaced ‘primary investigation’ in the glossary and been used consistently in the syllabus.

4.6 Assessment

Summary

A significant number of respondents indicated that the requirements for school-based assessment are appropriate and manageable. A reduction in the number of assessment tasks was strongly endorsed. Some respondents requested further guidance on school-based assessment, especially in regard to the depth study.

Some respondents noted that the weighting of the formal written examination style assessment should be higher than the suggested 25%.

Feedback affirming the information on assessment

Feedback	Sources
A reduction in the number of assessment tasks was supported. Three tasks for three terms appears reasonable.	STANSW Survey (x10)
The overall information on assessment requirements is clearly presented.	AIS CCSOBB

Key matters and actions

Key matters	Sources	Actions
The weighting of the formal written examination style assessment should be higher than the suggested 25%.	Survey (x4)	The examination maximum weighting for the formal written examination style assessment has been increased to 30%.
Assessment of the depth studies requires more direction.	AIS Campbelltown (CM) CCSOBB CSOLism SCS STANSW Survey (x3)	Support materials will be developed in 2017 and will provide additional information about assessment of depth studies.
The requirements for a formal written examination task are ambiguous.	NSWTF STANSW	Requirements for assessment have been revised and clarified.
Further clarification of the structure and nature of the HSC examination and of school-based assessment is required.	AIS CCSOBB SCS STANSW Submission 1	Assessment support materials will be provided in 2017.

4.7 Content

Summary

Many respondents supported the scope of the content. Other respondents indicated that the scope was not clearly stated and that the lack of verbs made it difficult to understand the depth of the content.

Feedback affirming content

Feedback	Sources
The proposed content is appropriate and similar to the previous course.	Survey (x53)
Year 11 content is engaging and has been significantly improved.	Epping (CM) Survey (x4)
The draft Biology course is less prescriptive, and more flexible.	AIS
The Year 11 and Year 12 courses are a relevant mix of content and context that links well across the course.	NSWTF

Key matters and actions

Key matters	Sources	Actions
The amount of course content has increased from the current course.	AIS Canterbury (CM) Manly (CM) SCS Survey (x4)	Course content in both Years 11 and 12 has been reviewed and reduced in Modules 2, 7 and 8.
There is too much content, particularly in Year 11, which makes covering all modules within the period of a school year difficult.	AIS	
The course lacks coverage of the history and the work of scientists.	Survey (x4)	Depth studies provide opportunities for the inclusion of further historical aspects and the study of individual scientists.
The limited use and lack of verbs makes it difficult to gauge the depth of treatment of the content.	AIS Canterbury (CM) CCSOBB Gosford (CM) Manly (CM) SCS STANSW Survey (x5) Submission 1	The content has been revised and additional verbs have been added to clarify the scope of the intended learning.

Key matters	**Sources**	**Actions**
There is limited reference to and inclusion of first-hand investigations, especially in Year 12.	AIS SCS NSWTF Survey (x1)	Course content in Year 12 Modules 7 and 8 has been revised to provide more opportunity for practical investigations.
The emphasis in the content on examples of Australian plants and animals should be strengthened.	AIS Survey (x3)	The syllabus allows for the selection of Australian examples of plants and animals as appropriate to each context.

4.8 Learning across the curriculum

Summary

Respondents affirmed the Learning across the curriculum content relating to Aboriginal and Torres Strait Islander histories and cultures as authentic, and strongly supported its inclusion. Some responses questioned the relevance of the examples. The inclusion of Indigenous Culture and Intellectual Property (ICIP) was seen as a positive action.

Respondents did not comment on other Learning across the curriculum content.

Feedback affirming Learning across the curriculum

Feedback	Sources
The quality of specific references to Aboriginal and Torres Strait Islander histories and cultures content is appropriate and authentic.	Aboriginal Ed
The use of specific Aboriginal and Torres Strait Islander histories and cultures examples is authentic and relevant.	AIS Survey (x52)
The examples provide an appropriate context for Aboriginal and Torres Strait Islander histories and cultures content in the course.	AIS

Key matters and actions

Key matters	Sources	Actions
Some respondents questioned the inclusion of Aboriginal and Torres Strait Islander histories and cultures content in Stage 6, noting its strong inclusion in Stage 4 and Stage 5 Science content.	Survey (x4)	Content relating to Aboriginal and Torres Strait Islander histories and cultures has been included where appropriate.

4.9 Diversity of learners, including Life Skills

Summary

Most respondents commented that depth studies, open-ended investigations and other potential experimental work provide opportunities to cater for the diversity of learners.

Some respondents suggested that the amount of content would have a negative impact on some students.

Feedback affirming the diversity of learners, including Life Skills

Feedback	Sources
The inclusion of contemporary practical-based learning to cater for the diversity of learners is supported.	Survey (x49)
Depth studies allow for authentic learning and provide opportunities to cater for the diversity of learners.	Survey (x49)

Key matters and actions

Key matters	Sources	Actions
Content should be reduced to provide opportunities to cater for the diversity of learners, including depth of learning, flexible approaches and the promotion of practical science.	AIS Canterbury (CM) Survey (x9)	Content has been reviewed and reduced in Modules 2, 7 and 8 to promote engagement and depth of learning, to provide opportunities for the practical aspects of science, and for the diversity of learners.
This draft syllabus will require a greater knowledge of metalanguage and expression, which will disadvantage ESL students.	AIS STANSW Survey (x9)	Use of language and some terms and verbs have been adjusted as appropriate throughout the syllabus to ensure content is accessible.

4.10 Other comments

Summary

A number of respondents welcomed the changes in the draft syllabus. Many respondents supported the reduced number of school-based assessments.

Respondents indicated that the draft syllabus has a structure that is logical, comprehensive and relevant.

Feedback affirming the draft syllabus

No additional comments were made.

Key matters and actions

Key matters raised	Sources	Actions
Clear guidance about the required depth of knowledge is needed.	AIS SCS Campbelltown (CM) Canterbury (CM) Manly (CM)	Sample programs will be provided in the support materials to indicate depth of learning when the syllabus is released in 2017.
Extensive support materials, including programming advice and samples, need to be made available when the syllabus is released.	AIS Epping (CM) Gosford (CM) SCS STANSW Survey (x4)	Support materials will be developed to support initial implementation of the syllabus.

4.11 Student voice

Targeted consultation meetings with students were held to gather feedback about Science. These meetings focused on a discussion of courses within the Years 11 and 12 Science learning areas, including: aspects of Science that students liked most and least; how the course could be improved; and the value of and interest in a Science Extension course.

Summary

Student comments focused on the study of Stage 5 and Stage 6 Science. The majority of students supported a more flexible approach to studying Science, including opportunities to research and move away from learning prescribed content.

Feedback from student voice on Science

Feedback	Sources
Students enjoy the open-ended nature of tasks.	Armidale (SV) Wagga Wagga (SV)
Students dislike learning extensive content for an examination and preferred the application of knowledge.	Armidale (SV) Wagga Wagga (SV)
Students indicate that there was much more content in the Stage 6 course compared to Stage 5.	Armidale (SV) Wagga Wagga (SV)
Students support the inclusion of more independent research tasks and having time dedicated to exploring Science in depth.	Armidale (SV) Wagga Wagga (SV)
Students strongly endorsed the development of a Science Extension course.	Armidale (SV) Wagga Wagga (SV)

5 Quantitative analysis of survey responses

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

Survey item	Number of responses	Strongly agree	Agree	Disagree	Strongly disagree
Rationale 1. The rationale describes the nature and purpose of the course in the curriculum.	140	24%	74%	2%	1%
Aim 2. The aim provides a succinct statement of the overall purpose of the course.	140	26%	70%	3%	1%
Objectives 3. The objectives define the intended learning and the knowledge, understanding, skills, values and attitudes to be developed through study of the course.	135	24%	68%	7%	1%
Outcomes 4. The outcomes and content describe what students are expected to achieve in relation to what they know, understand and can do from studying the course.	134	20%	63%	14%	2%
5. The outcomes provide an appropriate continuum of learning from Stage 5 to Stage 6.	135	22%	61%	14%	2%
Course structure 6. The course structure and requirements are clear, manageable and appropriate.	124	15%	50%	27%	8%
7. The requirements for the programming of a depth study are clear.	125	14%	42%	34%	10%

Survey item	Number of responses	Strongly agree	Agree	Disagree	Strongly disagree
School-based assessment 8. The school-based assessment requirements are manageable.	123	20%	58%	19%	4%
9. The school-based assessment requirements provide opportunities for students to develop and demonstrate their learning.	124	17%	61%	16%	6%
10. The requirements for the assessment of a depth study are clear.	122	10%	38%	37%	16%
HSC assessment 11. Please comment on the HSC examination specifications.	90	7%	47%	34%	12%
Content 12. The content describes the scope and depth of learning.	119	9%	51%	29%	10%
13. The course content is appropriate.	121	17%	58%	18%	7%
Learning across the curriculum 14. The Learning across the curriculum content, including opportunities for students to develop their understanding and appreciation of Aboriginal and Torres Strait Islander histories and cultures, is authentic and appropriate.	113	9%	63%	22%	6%
Modules 15. The modules provide a clear progression and development of concepts.	117	14%	70%	15%	2%
16. Sufficient time has been allocated to cover the course outcomes and content for each module.	118	5%	47%	35%	14%

Survey item	Number of responses	Strongly agree	Agree	Disagree	Strongly disagree
17. Working Scientifically is appropriately incorporated in the content.	118	21%	65%	8%	5%
18. There is sufficient scope for a variety of practical experiences.	117	18%	68%	12%	3%
19. There are sufficient opportunities to apply quantitative and analytical skills in the course.	117	16%	72%	11%	1%
Diversity of learners 20. The course meets the needs of the diversity of learners.	116	4%	65%	26%	5%

6 Respondents

6.1 Consultation meetings

Board Curriculum Committee consultation meeting at NESA on 24 August 2016 (code: BCC)

16 members

Name	**Organisation**
Dr Timothy Wright	Chair
Mr Vatche Ansourian	NSW Department of Education
Dr Alison Beavis	NSW/Territories Committee of Chairs of Academic Boards/Senates
Ms Olivia Belshaw	Professional Teachers' Council NSW
Mr John Cairns	Australian Association of Special Education NSW Chapter
Ms Karen Daffy	NSW Teachers Federation
Ms Fiona Davies	NSW Parents' Council
Mr Robert Farr	Association of Independent Schools of NSW
Ms Catherine Garrett-Jones	Council of Catholic School Parents NSW
Mr Peter Harold	Independent Education Union NSW/ACT
Ms Alice Leung	NSW Department of Education
Mr Mike Morgan	NSW Teachers Federation
Mr Paul Reilly	TAFE NSW
Mr Timothy Spencer	Federation of Parents and Citizens Associations of NSW
Mr Paul Stenning	Catholic Education Commission NSW
Dr Louise Sutherland	NSW/Territories Committee of Chairs of Academic Boards/ Senates

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

480 attendees

Location	**Date (2016)**	**Number of attendees**
Campbelltown	28 July	65
Canterbury	2 August	82
Gosford	4 August	44
Manly	9 August	59
Epping	11 August	174
Armidale	18 August	35
Wagga Wagga	23 August	21

Targeted consultation meetings

Aboriginal education *(code: Aboriginal Ed)*

15 attendees

Location	**Date (2016)**	**Number of attendees**
Sydney (am)	28 July	7
Sydney (pm)	28 July	8

Special education *(code: Special Ed)*

57 attendees

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

Industry *(code: Industry)*

28 attendees

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

Student voice meetings *(code: SV)*

30 attendees

Location	**Date (2016)**	**Number of attendees**
Armidale	18 August	19
Wagga Wagga	23 August	11

Consultation meeting attendees

Attendees	Number of attendees
Academic	11
Parent	0
Pre-service teacher	5
School executive	62
Teacher	326
Student	1
Other	14

Attendees identified as	Number of attendees
An Aboriginal person	2
A Torres Strait Islander person	0
An Aboriginal and Torres Strait Islander person	0
Not an Aboriginal and/or Torres Strait Islander person	417

Sector	Number of attendees
Government	218
Catholic	62
Independent	173
Non-school based	27

Area of NSW	Number of attendees
Metropolitan	380
Regional	100

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

6.2 Online survey respondents

167 responses

Respondents	**Number of respondents**
Academic	2
Parent	0
Pre-service teacher	0
Principal	1
School executive	16
School faculty/department	9
Teacher	146
Student	4
Other	5

Respondents identified as	**Number of respondents**
An Aboriginal person	4
A Torres Strait Islander person	2
An Aboriginal and Torres Strait Islander person	1
Not an Aboriginal and/or Torres Strait Islander person	160

Sector	**Number of respondents**
Government	81
Catholic	21
Independent	62
Non-school based	3

Area of NSW	**Number of respondents**
Metropolitan	113
Regional	54

Number of people contributing to the survey	**Number of respondents**
1	135
2–5	25
6 or more	7

6.3 Written submissions

Organisations, groups and individuals	**Code**
Association of Heads of Independent Schools of Australia	AHISA
Association of Independent Schools NSW	AIS
Catholic Schools Office Armidale	CSOArm
Catholic Schools Office Diocese of Lismore	CSOLism
Community of Catholic Schools Diocese of Broken Bay	CCSOBB
NSW Department of Education	DoE
NSW Teachers Federation	NSWTF
Science Teachers' Association of NSW Inc	STANSW
Sydney Catholic Schools, Archdiocese of Sydney	SCS
St Catherine's School	Submission 1
Sydney Grammar School	Submission 2
St Xavier's College	Submission 3
Collective submission Southern Cross Baptist Christian College	Submission 4
Individual respondent	Submission 5
Individual respondent	Submission 6