



Biology

Stage 6

Draft Writing Brief

**Consultation Report
February 2016**

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Published by
Board of Studies, Teaching and Educational Standards NSW
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Sydney NSW 2001
Australia

www.bostes.nsw.edu.au

DSSP-27005
D2016/3321

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1. Background information

The preparation of the *Biology Stage 6 Draft Writing Brief* took into account the broad directions for the learning area, which were developed following public consultation and endorsed by BOSTES in December 2014.

BOSTES conducted consultation in Term 4, 2015 to engage stakeholders in the syllabus development process and to seek their feedback on options and proposals in the draft writing brief.

The consultation program included:

- a meeting of the Years 11–12 Board Curriculum Committee for Science on 18 November 2015
- afternoon consultation meetings at:
 - Parramatta on 26 October 2015
 - Albury on 27 October 2015
 - Port Macquarie on 29 October 2015
 - Merimbula on 2 November 2015
 - Hurstville on 4 November 2015
 - Asquith on 5 November 2015
 - Sydney on 26 November 2015
- an online survey on the BOSTES website from 19 October to 29 November 2015
- written submissions from:
 - NSW Department of Education
 - Catholic Education Office Sydney
 - Communities of Catholic Schools – Diocese of Broken Bay
 - Association of Independent Schools of NSW
 - Association of Heads of Independent Schools of Australia
 - NSW Teachers Federation
 - Science Teachers' Association of NSW
 - University of Sydney Faculty of Science
 - Blue Mountains Grammar School
 - Sydney Grammar School
 - 2 individuals.

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

Feedback from consultation was analysed and informed revisions to the draft writing brief. The final writing brief will be used to develop the draft syllabus.

2. Executive summary

The *Biology Stage 6 Draft Syllabus Writing Brief Consultation Report* provides a description of the consultation process and a summary and analysis of feedback received. The summary analysis outlines confirmation of the general directions of the draft syllabus writing brief as well as key matters raised and proposed actions and amendments.

The Consultation Report presents data and findings gathered through 176 survey responses, 12 written submissions, a Board Curriculum Committee meeting and 7 consultation meetings.

The *Biology Stage 6 Draft Writing Brief* provided three course options for analysis and feedback. Stakeholders indicated that Option 2, with a four-topic structure, no options and a focus on practical expectations, was preferred. There was support for the inclusion of depth studies and strong agreement that depth studies incorporating investigative projects could provide for deeper learning and cater for the needs of a broad range of students (Option 3). Respondents noted that further information and detail about the structures, requirements and assessment of depth studies was needed before Option 3 could be considered.

Other matters raised included the need for further refinement of the rationale, aim, objectives and outcomes, a reduction in the content to allow for depth of study, and to support students' learning about contemporary science as it is practised. Respondents also supported development of an Extension course(s) in Science. It was suggested that assessment requirements be clarified, and learning materials would be required to support implementation.

Key matters

The key matters to emerge from the consultation included:

- Option 2 is preferred. However, there is strong support for Option 3 with its depth study component
- the rationale, aim and objectives require revision to provide clarity and consistency
- a reduction in content is required to contain the scope and breadth of learning, and to enable depth of study and time for practical activities
- the concept of depth studies is supported. However, assessment for the HSC requires clarification
- the Biology syllabus should emphasise learning science as it is practised
- development of an Extension course(s) for Science should be considered
- Senior Years assessment policies, procedures and requirements require clarification.

Actions in response to key matters

- Aspects of Options 2 and 3, including depth studies, will be incorporated.
- The rationale, aim and objectives will be reviewed and amended to provide clarity and consistency.
- Content will be reduced to provide opportunities for deeper learning through review of the areas of study and practical activities.
- Depth studies will be included and details about their nature and structure will be provided.
- Where appropriate, practical investigations and activities will enhance and complement the content.
- An Extension course(s) in Science will be considered for development following draft syllabus development in the science courses.
- Senior Years assessment policies and procedures will be reviewed during draft syllabus development.

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

3. Summary of respondents

Consultation stakeholder and teacher meetings

1 Board Curriculum Committee (BCC), 7 teacher meetings

BCC members	8	Government sector	84	Catholic sector	32
Independent sector	55	Other	5		

Online survey respondents

176 online survey responses

Respondent:					
Academic	2	Parent	1	Pre-service teacher	1
Principal	0	School executive	11	School faculty	11
Student	5	Teacher	143	Other	2
I am:					
An Aboriginal person	0	A Torres Strait Islander person	0		
An Aboriginal and Torres Strait Islander person	0	Not an Aboriginal and/or Torres Strait Islander person	176		
Sector:					
Government	84	Catholic	32		
Independent	55	Non-school based	5		
Area of NSW:					
Metropolitan	93	Regional	83		
Number of people contributing to this survey:					
1	153	2–5	17	6 or more	6

4. Key matters

Key matters	Actions
Option 2 is preferred. However, there is strong support for Option 3 with its depth study component.	Aspects of Options 2 and 3, including depth studies, will be incorporated.
The rationale, aim and objectives require revision to provide clarity and consistency.	The rationale, aim and objectives will be reviewed to provide clarity and consistency.
A reduction in content is required to contain the scope and breadth of learning, and to enable depth of study and time for practical activities.	Content will be reduced to provide opportunities for deeper learning through review of the areas of study and practical activities.
The concept of depth studies is supported. However, assessment for the HSC requires clarification.	Depth studies will be included and details about their nature and structure will be provided.
The Biology syllabus should emphasise learning science as it is practised.	Where appropriate, practical investigations and activities will enhance and complement the content.
Development of an Extension course(s) for Science should be considered.	An Extension course(s) in Science will be considered for development following syllabus development in the science courses.
Senior Years assessment policies, procedures and requirements require clarification.	Senior Years assessment policies and procedures will be reviewed during draft syllabus development.

5. Analysis

5.1 Rationale

Summary

The majority of survey respondents agreed that the proposed rationale describes the nature of the course, explains its purpose in the curriculum and reflects a contemporary view.

Some respondents commented that the rationale requires review, reordering and further clarification.

There was support for the incorporation of technology and the focus on learning Biology as it is practised.

Feedback affirming the rationale

Feedback	Sources
The rationale is clear and correctly indicates that the course is for those with substantial achievement in Stage 5 Science. It provides a sound overview and a welcome shift to inquiry learning.	AHISA BCC DoE Hurstville (CM) STANSW Survey (x5)
The rationale correctly emphasises the practical nature of the course and its importance as preparation for tertiary studies.	AHISA BCC DoE Submission 2 Survey (x4)

Key matters and actions

Key matters	Sources	Actions
The sense that Biology is exciting, fascinating and remarkable is missing from the rationale.	USYD	The rationale will be reviewed to reference the value and importance of studying Biology.

5.2 Aim

Summary

The majority of respondents agreed that the proposed aim provides a statement of the overall purpose of the syllabus.

Some respondents commented that there was not enough information to determine whether the aim, objectives, outcomes and content of the syllabus are clearly linked.

Feedback affirming the aim

Feedback	Sources
The aim is clear, and its focus on the practice of biology is welcomed.	BCC DoE STANSW Survey (x2)

Key matters and actions

Key matters	Sources	Actions
It is uncertain how well the aim is reflected in the content.	CEOSYD Survey (x4)	The aim will be reviewed to align with the content.
The language of the aim needs to be more succinct.	Submission 3 Survey (x1)	The language of the aim will be reviewed.

5.3 Objectives

Summary

The majority of respondents agreed that the proposed objectives define, in broad terms, the knowledge, understanding, skills, values and attitudes developed through studying this course.

Several respondents commented that more detail and clarity regarding the objectives is required.

Feedback affirming the objectives

Feedback	Sources
The objectives are appropriate and the emphasis on the skills of biology is supported.	BCC DoE Submission 3 Survey (x3)

Key matters and actions

Key matters	Sources	Actions
The objectives do not clearly identify a continuum of learning.	AIS Hurstville (CM)	The objectives will be reviewed to relate to the continuum of learning.
The statement of objectives is too broad.	AIS CEOSYD Survey (x5) USYD	The objectives will be reviewed for clarity and purpose. However, the outcomes provide further detail of objectives.

5.4 Outcomes

Summary

The majority of the respondents agreed that the sample of outcomes indicates the knowledge, understanding and skills expected and that they are derived from the objectives of the syllabus.

Several respondents commented that the outcomes are too broad and that there is not enough information in the small sample available to make an informed comment.

Feedback affirming the outcomes

Feedback	Sources
The sample outcomes are supported. There is an appropriate progression between the Year 11 and Year 12 courses in the description of the outcomes.	AHISA AIS BCC DoE Merimbula (CM) Port Macquarie (CM) STANSW Survey (x5)

Key matters and actions

Key matters	Sources	Actions
The sample of outcomes lacks clarity and does not reference Science as a Human Endeavour.	AIS CEOSYD Hurstville (CM) NSWTF Submission 3 Survey (x4) USYD	The outcomes will be further developed and refined for clarity of purpose and Science as a Human Endeavour will be incorporated.

5.5 Diversity of learners

Summary

Most respondents indicated that depth studies incorporating investigative projects offered scope to cater for the diversity of learners.

Several respondents indicated that current prescribed contexts hindered the ability of teachers to provide for the diversity of learners.

Some respondents suggested that an Extension course and/or Life Skills outcomes and content be developed to better cater for the diversity of learners.

Feedback about the diversity of learners and Life Skills outcomes and content

Feedback	Sources
The inclusion of depth studies incorporating investigative projects and more practical-based learning will cater for student diversity.	BCC CEOSYD DoE STANSW Survey (x24) Sydney (CM)

Key matters and actions

Key matters	Sources	Actions
Reduce the content to allow for flexibility of delivery to cater for the diversity of learners.	AIS DoE Hurstville (CM) NSWTF Submission 3 Survey (x25) Sydney (CM)	Content will be reduced through review of the modules and the scope learning in each area of study.
An Extension course should be developed in each science discipline.	BCC DoE STANSW Submission 2	An Extension course(s) in Science will be considered for development following syllabus development in the Science courses.
Life Skills outcomes and content are not appropriate for the Biology course. Life Skills outcomes and content should be aligned with the Senior Science course.	AIS BCC Hurstville (CM) Survey (x18)	Life Skills outcomes and content will be developed to align with the Senior Science course.

5.6 Course structure and options

Summary

Preferred option

The majority of survey respondents preferred Option 2. The next preference was Option 3 and then Option 1.

It was suggested that Option 3 should be considered for the Year 11 Course and Option 2 for the Year 12 Course.

Course content

The majority of survey respondents agreed that the sequence of content and areas of study presented in Options 2 and 3 are logical, appropriate and contemporary and provide learning opportunities to prepare students to undertake further study.

A common multidisciplinary unit

The majority of survey respondents indicated that a multidisciplinary unit was not required as this was well catered for in Stage 4 and Stage 5 Science.

Depth studies

The majority of survey respondents agreed that depth studies incorporating investigative projects allow for teaching flexibility and cater for the diversity of learners by promoting learning science as it is practised. However, concerns about logistics, equity and structure were raised.

Additional quantitative aspects for consideration

A small number of survey respondents indicated that additional quantitative analytical aspects should be considered for inclusion in this course.

An Extension course

Most respondents supported provision of flexible, rigorous Extension courses across all Science disciplines.

Respondents also indicated that the nature of the proposed Extension course(s) required greater clarification

Other structures and options

The majority of respondents indicated that the course structures and options provided were appropriate.

Feedback affirming the course structure and options

Feedback	Sources
Course content The content is appropriate and contemporary.	AHISA Albury (CM) Asquith (CM) BCC Hurstville (CM) Merimbula (CM) Parramatta (CM) Port Macquarie (CM) Survey (x33)
A common multidisciplinary unit A multidisciplinary unit, containing ‘big concepts’ such as historical developments in science or focusing on technologies used in scientific investigations is supported.	AIS Hurstville (CM) Parramatta (CM) Survey (x5)
Depth studies Depth studies incorporating investigative projects are supported.	AIS Albury (CM) Asquith (CM) BCC CEOSYD Hurstville (CM) Merimbula (CM) Parramatta (CM) STANSW Survey (x29) USYD

Key matters and actions

Key matters	Sources	Actions
Course content The course content needs to be reduced and made less prescriptive and address the continuum of learning.	AIS Asquith (CM) BCC CEOSYD DoE Hurstville (CM) NSWTF Parramatta (CM) Port Macquarie (CM) Survey (x25) Sydney (CM) USYD	Course content will be reduced and the continuum of learning addressed.
Depth studies The nature, implementation, logistics and assessment requirements of the proposed depth studies are not clear and in some cases not supported.	AIS Asquith (CM) BCC DoE Hurstville (CM) Merimbula (CM) NSWTF Parramatta (CM) Port Macquarie (CM) STANSW Submissions 2, 3, 4 Survey (x37) Sydney (CM)	Details about the nature and structure of depth studies incorporating investigative projects will be provided.
Other structures for consideration An Extension course should be developed in each Science discipline.	AHISA AIS BCC CCSOBB NSWTF Parramatta (CM) Port Macquarie (CM) STANSW Submissions 2, 3, 4 Survey (x12)	An Extension course(s) in Science will be considered for development following syllabus development in the Science courses.
Option 2 should be considered as the structure for the Year 12 course and Option 3 for the Year 11 course.	AIS BCC Submission 2	Course structures and options will be reviewed during syllabus development.

5.7 Assessment and reporting

Summary

A number of respondents requested additional support and guidance in the development of school-based assessments, particularly for depth studies incorporating investigative projects.

Some respondents indicated that a single 3-hour examination for the HSC was no longer an appropriate form of external assessment, and that the use of online assessment technologies should be investigated.

A number of respondents suggested that the Year 11 course either be externally assessed or contribute to the HSC mark.

Many respondents commented that the focus of external assessment should be on skills and understanding, rather than on factual recall.

Feedback affirming the information on assessment and reporting

Feedback	Sources
School-based and external assessment must remain part of the HSC assessment process.	BCC Survey (x11) Sydney (CM)
School-based assessment advice should be provided to support the syllabus	Survey (x20)

Key matters and actions

Key matters	Sources	Actions
HSC assessment policies, procedures and requirements need to be reviewed.	Albury (CM) Asquith (CM) BCC CEOSYD DoE Hurstville (CM) Merimbula (CM) NSWTF Parramatta (CM) Submission 2 Survey (x12) Sydney (CM)	HSC course assessment policies, procedures and specifications will be reviewed.
The use of technology in assessing students should be investigated.	BCC Submissions 1, 2 Survey (x8) Sydney (CM)	The use of technology in assessment will be considered.
The importance of the assessment of the practical components of biology should be enhanced.	AIS	HSC course assessment policies, procedures and specifications will be reviewed.

5.8 Other comments

Summary

The majority of respondents agreed that the draft writing brief provides a sound basis for developing the course.

Feedback affirming the draft writing brief

Feedback	Sources
The draft writing brief provides a sound basis for developing the course.	BCC DoE Survey (x5)

Key matters and actions

Key matters	Sources	Actions
Assessment procedures require clarification during draft syllabus development.	BCC CEOSYD DoE Hurstville (CM) NSWTF Parramatta (CM) STANSW	HSC assessment policies, procedures and specifications will be reviewed during syllabus development.

6. Quantitative analysis of survey responses

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

Survey Item	Number of responses	Strongly agree	Agree	Disagree	Strongly disagree	Yes	No
Rationale							
1. The proposed rationale describes the nature of the course in broad terms and explains its purpose in the curriculum.	140	16%	81%	2%	1%		
2. The proposed rationale reflects a contemporary view of the course.	139	12%	80%	8%	0%		
Aim							
3. The proposed aim provides a statement of the overall purpose of the syllabus.	134	19%	80%	1%	0%		
Objectives							
4. The proposed objectives define in broad terms the knowledge, understanding, skills, values and attitudes to be developed through study in this course.	130	15%	80%	5%	0%		
Outcomes							
5. The sample of outcomes is appropriate.	129	16%	79%	5%	0%		
Course structure and options							
6. Option 1 is preferred.	10					9%	
7. Option 2 is preferred.	59					55%	
8. Option 3 is preferred.	38					36%	
9. The sequence of content and areas of study presented in the options are logical and appropriate.	107	19%	69%	11%	1%		
10. The content and areas of study in the options are contemporary.	104	15%	69%	14%	1%		
11. The content and areas of study provide learning opportunities to prepare students to undertake further study.	103	24%	70%	5%	1%		
12. The structure and content provides flexibility to meet the needs and interests	105	16%	66%	16%	2%		

Survey Item	Number of responses	Strongly agree	Agree	Disagree	Strongly disagree	Yes	No
of the range of students.							
13. A common multidisciplinary unit to commence the study of Stage 6 Science courses would focus students on the disciplines, and further develop common skills to assist students to choose appropriate discipline pathways.	100	12%	57%	23%	8%		
14. Depth studies incorporating investigative projects provide opportunities for students to apply their scientific knowledge, understanding and skills.	103	35%	45%	16%	5%		
15. Are there additional quantitative analytical aspects that should be considered for inclusion in this course?	90					19%	81%
16. Is there another structure or option for Biology that BOSTES should consider?	93					32%	68%
General							
17. The draft writing brief provides a sound basis for developing the final writing brief, which is the blueprint for the development of the draft syllabus.	100	10%	81%	9%	0%		

7. Respondents

7.1 Consultation meetings

Afternoon consultation meetings (code: CM)

Location	Date (2015)	Total
Parramatta	26 October	73
Albury	27 October	8
Port Macquarie	29 October	14
Merimbula	2 November	5
Hurstville	4 November	60
Asquith	5 November	39
Sydney	26 November	26

Board Curriculum Committee consultation meeting at the BOSTES on 18 November 2015 (code: BCC)

Name	Organisation
Dr Timothy Wright	Chair
Mr Vatche Ansourian	NSW Department of Education
Ms Olivia Belshaw	Science Teachers' Association of NSW
Mr Robert Farr	Association of Independent Schools of NSW
Ms Regina Menz	Catholic Education Commission NSW
Mr Mike Morgan	NSW Teachers Federation
Mr Paul Reilly	NSW Department of Industry – TAFE NSW
Mr Tim Spencer	Federation of Parents and Citizens' Association NSW

7.2 Written submissions

Organisations, groups and individuals	Code
Association of Heads of Independent Schools of Australia	AHISA
Association of Independent Schools of NSW	AIS
Blue Mountains Grammar School Science Faculty	Submission 4
Catholic Education Office Sydney	CEOSYD
Communities of Catholic Schools – Diocese of Broken Bay	CCSOBB
NSW Department of Education	DoE
NSW Teachers Federation	NSWTF
Science Teachers' Association of NSW	STANSW
Sydney Grammar School Science Faculty	Submission 2
University of Sydney Faculty of Science	USYD
Individual Respondent	Submission 1
Individual Respondent	Submission 3