Consultation regarding a potential GCSE in Natural History: Early findings

27th July 2020

Consultation designed by Helen Hemmings, Steve Evans and Ami Jones, Product Directorate, OCR.

Analysis conducted and report prepared for OCR by Victoria Crisp, David Beauchamp and Jillian Luntz from the Assessment Research and Development Division, Cambridge Assessment.

Acknowledgement
With many thanks to the stakeholders and young people who took part in the consultation.

Contents

Consultation regarding a potential GCSE in Natural History: Early findings

Foreword

This consultation is a key part of the process of testing the proposal for a Natural History GCSE. The results are strongly in favour of the GCSE being a part of the qualifications offer in England. The consultation outcomes are extremely valuable for fine-tuning and refining the concept and developing the support around the courses and assessments. Whilst the consultation is overwhelming in support of the development of the qualification, the consultation includes very valuable comment on issues and concerns, all of which help with policy and development.

The consultation responses also endorse the draft ideas around aims, purpose and content domains which we developed as a result of discussions across education, government, educators, young people and bodies concerned with the natural world. Namely:

- Observing and understanding whole organisms in context
- Understanding the dynamic nature of environments and the challenges faced by organisms and the natural world
- Human interaction with the natural world and the way we have governed that relationship
- The way in which the natural world has been interpreted and reflected in human culture – art, literature, music – and the way in which this has affected our relationship with it

The focus on the study of whole organisms in context has been squeezed from much of our education arrangements – it was re-emphasised in the 2014 National Curriculum and would be strengthened by the provision of a GCSE in Natural History. Development of a GCSE would meet a need for young people to increase greatly their direct engagement with nature, in line with their growing concerns about environmental degradation and habitat loss.

It has been a huge pleasure to work closely with Mary Colwell on the initial proposals for the qualification and extremely gratifying to experience successive waves of support at each stage of the development. What is so important in the consultation responses is the extent to which young people are expressing a clear and well-grounded need for a Natural History GCSE and educators are stating their commitment to meeting the expressed needs of young people. Its provision would make the education system responsive to emerging needs, and quickly so.

We would like that thank the authors of this report and OCR staff who have worked so hard in difficult times to complete this consultation on schedule and have encouraged such a comprehensive and wide-ranging response to it. And of course we would like to thank all those who have devoted time to thinking through and submitting their responses, all of which are being carefully considered with the first stage of this analysis reflected in the report presented here.

Tim Oates CBE - Cambridge Assessment
Jill Duffy - OCR

Cambridge July 2020

Executive summary

OCR have been working with Mary Colwell, the Natural History Museum, The Linnean Society, Field Studies Council and others to explore the purpose and design of a possible GCSE in Natural History. In order to gather views from stakeholders, OCR ran a public consultation from 4th June to 19th July 2020 using two questionnaires: one for adult stakeholders; and one for young people. Responses were received from 3092 adult stakeholders and 209 young people (though not all respondents answered all questions[1]).

Key findings from the consultation are:

- 90% of adult stakeholders who responded to the relevant question agreed or strongly agreed with the definition of Natural History provided. Of responding young people, 89% felt that the definition told them enough about Natural History.
- 91% of responding stakeholders agreed or strongly agreed with the proposed purpose of a GCSE in Natural History.
- Most stakeholders responding to the main questionnaire felt that it was important to include local, national and international flora and fauna in a GCSE in Natural History. However, overall there was slightly greater emphasis on local and national flora and fauna, over international flora and fauna. Most responding young people also felt that it was important to study local, national and international plants and animals.
- Whilst the Department for Education will create the subject content if a GCSE in Natural History is taken forward, five possible content themes were described in the consultation: the natural shaping of the world; life in the early world; flora and fauna; human impact on the world; and our changing view of the world.
    - For each of the five themes, 79% or more adult respondents felt the theme should be included, with the most popular themes being 'flora and fauna' and 'human impact on the world'.
    - Young people were asked to record their level of interest in a range of more specific topics within each of the five potential content themes. For almost all of the specific topics, at least three quarters of responding young people reported that that they were interested or very interested in the area. Some of the most popular topics were: biodiversity; life in our oceans; the impact of humans on ecosystems/habitats; climate change; conservation methods; and species reintroduction.
- 96% of responding adults agreed or strongly agreed that an element of outdoor study should be an important part of a GCSE in Natural History. Of responding young people, 93% expected that Natural History would involve some time studying outdoors.
- Various skill types such as observation and recording, monitoring, cartographic skills and use of digital methods, data skills, research skills and qualitative skills were considered important to include in the qualification by many respondents.
- Teachers/educators tended to think that students would be interested in a GCSE in Natural History, stating reasons such as it being an engaging or interesting area, that

[1] Given that some respondents did not continue to the end of the questionnaire, and therefore a lack of response to a particular question does not necessarily indicate a neutral response or no opinion, the percentages shown have been calculated based on the total number of respondents answering the specific question.

it is valuable for society and that it offers an alternative to existing curriculum and links with other subjects.

- 94% of young respondents reported that they would like, or would have liked, the option to study such a qualification. The most common reasons given by students were that they were passionate about or interested in this area, that they feel it is an important area of study, and that it is an area not currently covered by the curriculum available to them.
- UK teachers/educators felt that a range of factors would affect their decisions regarding whether to offer a GCSE in Natural History. The factors most frequently considered 'very important' to decisions were 'engagement with/understanding of nature', 'popularity with students', and 'teaching time'.
- Possible barriers to the success of the qualification reported by teachers/educators included restrictions on curriculum time and staff, funding, negative perceptions of its value, lack of recognition (e.g. within Progress 8), and ensuring inclusivity and access (e.g. access for those with special needs, access to outdoor spaces for those living in inner cities).

The consultation shows a strong interest from young people in a GCSE in Natural History, as illustrated by the quotes below.

"I'm passionate about the natural world so this GCSE would have been amazing for me."

"I think it is really important to learn about our environment and how we got here and the world around us. It's even more important to be educating people on the effect of human life on the planet."

"If this was an option, I would have very much liked to study it, as learning about nature is very important because, as human beings we are reliant on it."

"Not only is it very interesting, but it also equips us with knowledge that we can use to help tackle future challenges."

"As a passionate conservationist this would have enormously boosted my knowledge and ability to enter and succeed in environmental work."

"I most certainly would have chosen this subject. The best way to protect the future is to educate people now. …Too many people take nature for granted, so having this subject may change people's perspectives and that's what we need to do!"

"I would have absolutely loved to do natural history at GCSE. Sad that I missed the chance but at least others get to do it."

Introduction

In 2019, naturalist Mary Colwell approached OCR to discuss her campaign to address the gap in education content relating to Natural History. OCR have subsequently been working with Mary, the Natural History Museum, The Linnean Society, Field Studies Council and others to explore the purpose and design of such a qualification. In order to gather views from stakeholders about the value of a potential GCSE in Natural History and about what such a qualification should contain, OCR ran a public consultation from 4th June to 19th July 2020. The consultation was accessible from OCR's website. It was publicised through an online launch event with key speakers that reached 260 attendees and then through social media.

Consultation questionnaires

Two online questionnaire surveys were used: a main questionnaire for adult stakeholders; and a shorter questionnaire for young people (aimed at those aged 18 years or younger and who are in school or other education). The main questionnaire contained questions regarding: the definition, purposes and scope of Natural History; subject content and skills; interest in such a qualification; and delivery in schools and colleges. The latter section on delivery was designed to be completed only by UK teachers and educators. The questionnaire for young people contained questions regarding definition, scope, subject content and whether respondents would be interested in a GCSE in Natural History (or would have been interested if it had been available at the time they took their GCSEs). A mixture of closed-and open-response questions was used in both questionnaires. A number of reactions to the consultation have also been received outside of the questionnaires, such as by letter or email.

This report includes analysis of all closed responses and a small number of key open-response questions from the questionnaires. Further analysis of the responses to open questions within the questionnaires and from other reactions to the consultation is ongoing.

Respondents

Before analysis began the datasets were cleaned in the following way. Respondents were excluded if they started one of the surveys but did not give a response to at least one question about Natural History. The datasets were checked for duplicate responses using IP addresses as a guide. Where the responses for duplicate IP addresses suggested that a respondent had not completed the questionnaire on their first visit and then had started again (with responses being similar between attempts), the more complete set of responses was retained. The dates and times at which responses were started and finished were also used in these judgements. If responses from the same IP addresses showed complete or close to complete sets of responses, these were compared. If responses were very similar throughout, for example open responses making very similar points or using the same vocabulary, then one set of responses was deleted on the grounds that it was likely to be the same respondent. If there were no such indications that the responses might be from the same person then both (or all) sets of responses were retained, on the grounds that it was

plausible that two or more respondents with an interest in Natural History might live in the same household or work in the same organisation. Respondents who completed some or all of the young people's questionnaire were excluded if responses clearly indicated that they were in employment rather than in education or training.

After cleaning, the dataset for the main questionnaire contained responses from 3092 stakeholders. However, it should be noted that some participants skipped questions or failed to reach the end of the questionnaire. Nonetheless, most closed-response questions were answered by at least 2200 respondents. Stakeholders included teachers and educators, parents and carers, organisations and trusts, and others with an interest in the field. Most respondents were based in the UK. The section of the questionnaire about interest in the course and about delivery issues was intended to be answered only by teachers and educators in UK schools and colleges. A small number of respondents who gave answers in this section were excluded from the analysis of the questions in this section because they indicated elsewhere in the questionnaire that they were not based in the UK. This left 621 UK teachers/educators who answered some or all questions in this section.

For the young people's questionnaire, there were 209 respondents, with again some responses being incomplete. These respondents varied in terms of whether they were yet to choose GCSE options, were currently studying for their GCSEs or had completed their GCSEs but were still in full or part time education or training. All except two of the responding young people lived in the UK. There was a range of subjects amongst those that these young people were studying, had studied, or were interested in.

It should be noted that the samples of respondents were self-selecting.

Analysis

For closed-response questions, frequency tables have been created. These can be found in Appendix B (main questionnaire) or C (young people's questionnaire) if they are not presented in the text. Given that some respondents did not continue to the end of the questionnaire, non-response to a question does not necessarily indicate a neutral response or no opinion. Therefore, the percentages shown in tables have been calculated based on the total number of respondents answering that particular question.

For the open-response questions that have been analysed, common themes were identified in order to create a coding frame to categorise responses.

Findings

Definition

Both questionnaires showed respondents a proposed definition of 'Natural History'.

Definition given in main questionnaire:
'Natural History focuses on understanding the rich and diverse natural world. Through observational study (generating systematic records of direct and indirect observations, often made over long periods of time) and investigation, natural history seeks to understand the diversity, complexities, and interconnectedness of life on Earth in contrasting habitats. Natural history explores how our natural world has been shaped, and how it continues to change, both by natural processes and through human intervention'

Definition given in young people's questionnaire:
'Natural history focuses on understanding the rich and diverse natural world. Through observational study and investigation, natural history seeks to understand the variety and the complexities of life on Earth. It looks at how plants, animals and humans are linked, and the contrasting places where plants and animals live. Natural history explores how our natural world has been shaped, and how it continues to change, both by natural processes and through actions by humans.'

In the main questionnaire, 90% of those responding to the question either agreed or strongly agreed with the definition. Around 5% disagreed or strongly disagreed. Of responding young people, 89% felt that the definition told them enough about what Natural History is whilst 5% felt that it did not.

Purpose

The main questionnaire asked stakeholders for their opinion on the proposed purpose of studying a GCSE in Natural History.

Purpose:
'Natural history offers a unique opportunity to observe and engage with the natural world to develop a deeper understanding of the flora and fauna (life on Earth) within it. It is a study of how the natural world has been shaped and has evolved as well as how humans (as part of that natural world) influence, conserve and protect it. It is vital that we continue to develop our understanding of the natural world in order to safeguard the future.

To fully appreciate the complexities of the natural world it is important to study it closely and interact with it through field research and measurement. Natural history provides opportunities to develop skills out in the field as well as in a classroom and/or laboratory. Studying natural history makes an important contribution to understanding the relationship between the natural world and culture, policy decisions, scientific research and technology.

Study of science, geography, history and the arts at key stages 3 and 4 provides a variety of complementary skills and knowledge which support the study of Natural history. This subject supports the development of unique skills and knowledge which give a sharper focus and depth to the complexities of the natural world. The progression pathway for this subject at key stage 5 and beyond could be scientific, geographical, environmental, ecological or natural history itself.'

Some 91% of responding stakeholders agreed or strongly agreed with the purpose described, whilst 5% disagreed or strongly disagreed.

Scope

Both questionnaires sought views on the scope of flora and fauna that should be studied. As shown in Table 1, most stakeholders responding to the main questionnaire felt that it was important to include local, national and international flora and fauna in a GCSE in Natural History. However, overall there was greater emphasis on local and national flora and fauna, over international flora and fauna.

Table 1. Extent to which stakeholders agreed that it was important for a GCSE in Natural History to include local, national and international flora and fauna

	Strongly agree		Agree		Neither agree nor disagree		Disagree		Strongly disagree		Total	
It is important that a GCSE Natural History qualification covers: local flora/fauna	1797	68.6%	648	24.7%	114	4.4%	23	0.9%	38	1.5%	2620	100.0%
It is important that a GCSE Natural History qualification covers: national flora/fauna	1748	66.7%	762	29.1%	54	2.1%	17	0.6%	41	1.6%	2622	100.0%
It is important that a GCSE Natural History qualification covers: international flora/fauna	1150	43.8%	1136	43.2%	234	8.9%	67	2.6%	40	1.5%	2627	100.0%

Most responding young people also felt that it was important to study local, national and international plants and animals; similar percentages of respondents felt that studying local, national and international flora and fauna was important.

Table 2. Extent to which young people reported that it was important to study plants and animals that are local, are in the UK and around the world

	Very important		Important		Not sure		Not important		Not important at all		Total	
How important is it to study plants and animals: local to you	129	65.8%	54	27.6%	11	5.6%	1	0.5%	1	0.5%	196	100.0%
How important is it to study plants and animals: in the UK	128	65.3%	62	31.6%	5	2.6%	1	0.5%	0	0.0%	196	100.0%
How important is it to study plants and animals: around the world	126	64.3%	61	31.1%	7	3.6%	2	1.0%	0	0.0%	196	100.0%

Content

The questionnaires asked for views on five possible content themes (see Appendix A for detail). For each of the five themes, 79% or more adult respondents felt the theme should be included, with the most popular themes being ‘flora and fauna’ and ‘human impact on the world’.

Table 3. Extent to which stakeholders agreed that each of five possible content themes should be included in a GCSE in Natural History

	Strongly agree		Agree		Neither agree nor disagree		Disagree		Strongly disagree		Total	
Theme 1: The natural shaping of the world	883	34.9%	1122	44.3%	324	12.8%	150	5.9%	51	2.0%	2530	100.0%
Theme 2: Life in the early world	1072	43.5%	1036	42.1%	237	9.6%	84	3.4%	34	1.4%	2463	100.0%
Theme 3: Flora and fauna	1729	71.6%	612	25.4%	43	1.8%	11	0.5%	19	0.8%	2414	100.0%
Theme 4: Human impact on the world	1765	74.3%	509	21.4%	51	2.1%	25	1.1%	26	1.1%	2376	100.0%
Theme 5: Our changing view of the world	1066	45.3%	874	37.2%	267	11.4%	103	4.4%	41	1.7%	2351	100.0%

When asked to prioritise the five themes by ranking them, a similar pattern was seen with ‘flora and fauna’ and the ‘human impact on the world’ more frequently seen as more important. However, it should be noted that responses varied widely with all themes being the most important to some and the least important to others.

Table 4. Stakeholders’ rankings of possible content themes by importance for inclusion in a GCSE in Natural History

	1. Most important		2		3		4		5. Least important		Total	
Theme 1: The natural shaping of the world	330	15.3%	445	20.6%	429	19.8%	502	23.2%	457	21.1%	2163	100.0%
Theme 2: Life in the early world	295	13.3%	366	16.5%	398	18.0%	585	26.4%	573	25.8%	2217	100.0%
Theme 3: Flora and fauna	800	36.7%	379	17.4%	397	18.2%	263	12.1%	341	15.6%	2180	100.0%
Theme 4: Human impact on the world	539	24.3%	669	30.2%	296	13.4%	418	18.9%	293	13.2%	2215	100.0%
Theme 5: Our changing view of the world	263	11.5%	349	15.2%	697	30.4%	433	18.9%	554	24.1%	2296	100.0%

When asked, 31% of responding stakeholders felt that there was an additional content theme that they would expect to be included in Natural History. (Open responses describing possible additional themes were collected and will be analysed in due course.)

The young people were asked to record their level of interest in a range of more specific topics within each of the five potential content themes. Their responses can be found in

Tables C4 to C8 in Appendix C. For almost all of the specific topics at least three quarters of responding young people reported that that they were interested or very interested in the area. Some of the most popular topics were: biodiversity; life in our oceans; the impact of humans on ecosystems/habitats; climate change; conservation methods; and species reintroduction.

Skills

Both questionnaires included a question about outdoor study. Of those responding to this question on the main questionnaire, 96% agreed or strongly agreed that an element of outdoor study should be an important part of a GCSE in Natural History, whilst 2% disagreed or strongly disagreed. Of responding young people, 93% expected that Natural History would involve some time studying outdoors, whilst 1% did not expect that it would.

In the main questionnaire stakeholders were asked about the importance of a number of specific skills. (Additional detail about each skill was given, as reproduced in Appendix A.) Each skill type was considered important or very important by most respondents, see Table 5. Cartographic skills and use of digital methods seemed to be considered important by slightly fewer respondents than the other skills listed.

Table 5. Extent to which stakeholders reported different skills to be important as part of a GCSE in Natural History

	Very important		Important		Not sure		Not important		Not at all important		Total	
How important are observation and recording skills as part of a GCSE in Natural History?	1471	63.1%	725	31.1%	97	4.2%	30	1.3%	9	0.4%	2332	100.0%
How important are monitoring skills as part of a GCSE in Natural History?	1249	53.5%	882	37.8%	155	6.6%	36	1.5%	13	0.6%	2335	100.0%
How important are cartographic skills and use of digital methods as part of a GCSE in Natural History?	592	25.4%	1187	50.9%	412	17.7%	130	5.6%	10	0.4%	2331	100.0%
How important are data skills as part of a GCSE in Natural History?	923	39.6%	1122	48.1%	218	9.3%	61	2.6%	9	0.4%	2333	100.0%
How important are research skills as part of a GCSE in Natural History?	1006	43.3%	1032	44.4%	208	9.0%	70	3.0%	7	0.3%	2323	100.0%
How important are qualitative skills as part of a GCSE in Natural History?	761	32.6%	1145	49.1%	329	14.1%	93	4.0%	6	0.3%	2334	100.0%

Level of interest

In the section of the main questionnaire that was targeted at teachers and educators working in the UK, respondents were asked to judge how interested they felt students were likely to be in a Natural History GCSE using a sliding scale response where the left end indicated 'very interested', the midpoint indicated 'some interest' and the right end indicated 'not interested'. The positions of responses on the scale were converted to values from 0 ('very interested') to 100 ('not interested'). For those responding to this question, the mean value was 31 suggesting that school/college staff tend to think that students would be interested in the qualification. However, views did vary and responses spanned the full range of the scale (see Figure 1).

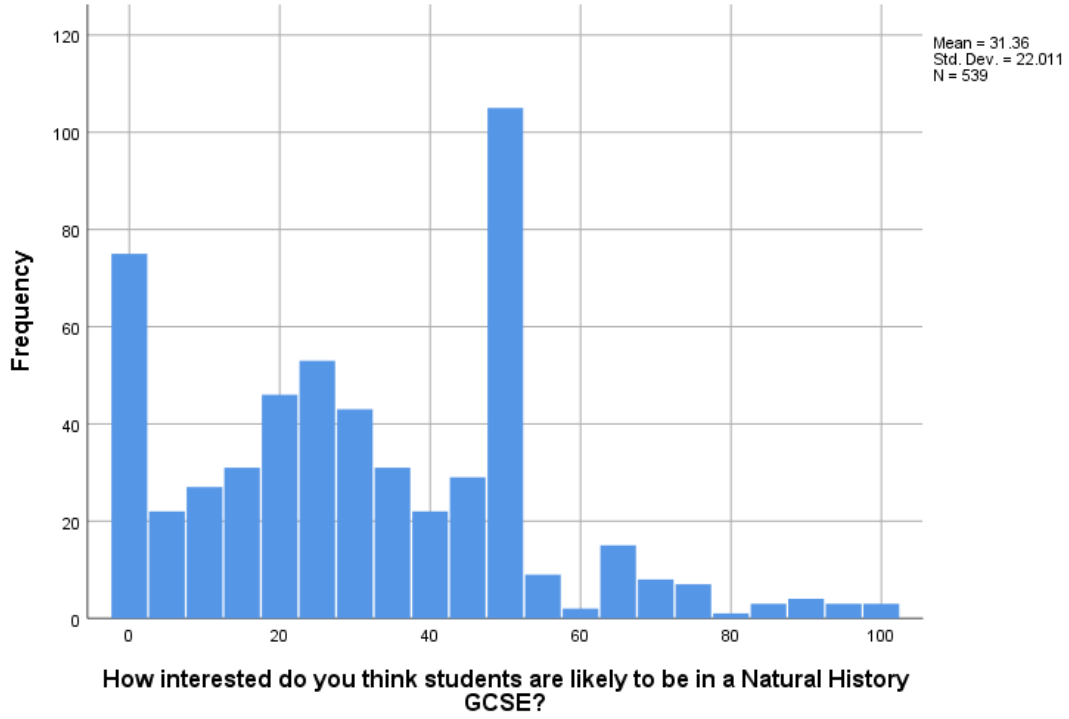

Figure 1. UK teacher/educator expectations of student interest in Natural History GCSE

Teachers/educators were asked to provide reasons for their responses regarding likely student interest. The majority of comments could be categorised as either positive or expressing concerns, as shown in Table 6. Most comments were positive, with approximately one third believing students would find the subject engaging, as well as those recognising its broader social value. For example:

> *"I think children are crying out for subjects that are relevant to the times we live in and especially related to environmental concerns."*
>
> *"So much appetite for this!"*
>
> *"Fits perfectly into our futures"*

Further positive comments pointed out the usefulness of a subject that would 'bridge the gap' between other subjects such as Geography and Biology, particularly with regards to the

potential for outdoor activities. A smaller number of comments also noted its value for further study at agricultural colleges, and career paths in areas such as animal husbandry, horticulture and conservation.

Some of these positive aspects were also reasons for caution. The potential for areas of overlap between Natural History and other subjects led some to express concern that a lack of distinction might discourage students from taking the qualification. Likewise, the novelty of the subject led to concern that there might be a risk of it being seen as a 'lesser' alternative to sciences. Additionally, whereas the idea of a course with a strong field work component was viewed favourably, the practicality of making that aspect accessible to students from a wide range of backgrounds gave cause for concern.

Finally, a significant number of respondents noted the importance of clarity around the subject – defining what it is and what it is not – and the importance of communicating this message when marketing it to stakeholders.

Table 6. Reasons for UK teacher/educator views on how interested students are likely to be in GCSE Natural History

Comment	Frequency
Positive: Engaging/interesting (e.g. interest in protecting planet, outdoor learning is engaging)	175
Positive: Links with other subjects/fills a gap/offers an alternative	73
Positive: Valuable for society/relevant to current issues	48
Positive: Useful for skills/career/further education	17
Caution: Lack of student interest (e.g. not enough content of interest, live in city)	49
Caution: Negative perception of value/use (e.g. could be seen as a 'soft option')	43
Caution: Practical implementation (time, curriculum, staff, etc.)	35
Caution: Need for accurate marketing/presentation	22
Caution: Similarity to other qualifications	17
Caution: Time and effort needed to build awareness	16
Other	30
Total (from the 404 respondents who answered this question)	**525**

The young people tended to be interested in a GCSE in Natural History, with 94% of respondents reporting that they would like, or would have liked, the option to study such a qualification. When asked for the reasons for their responses, a range of points arose (see Table 7). The most common responses from students were that they are passionate about or interested in this area, that they feel it is an important area of study, and that it is an area not currently covered by the curriculum available to them. The following quotes, illustrate these three themes:

> *"I'm passionate about the natural world so this GCSE would have been amazing for me."*

> *"I think it is really important to learn about our environment and how we got here and the world around us. It's even more important to be educating people on the effect of human life on the planet."*

"The biology course only covered one topic on ecology and geography didn't mention much about biodiversity at all."

Most comments were positive, however, there were a few areas of caution in young people's comments, for example, in relation to ensuring that the qualification is sufficiently distinct from other subjects and ensuring that the course can be inclusive of those with special needs.

Table 7. Reasons for young people's responses about whether they would like (or would have liked) the option to study GCSE Natural History

Comment	Frequency
Positive: Student is passionate about/interested in this area (e.g. interest in natural world/plants and animals/conservation)	50
Positive: Learn something not currently covered by curriculum (e.g. expands on Biology/Geography, gain understanding of our relationship with natural world)	24
Positive: Important area of study (e.g. important that young people learn about environment/world around us/human effect on planet)	23
Positive: Useful for further study/career/life	13
Positive: It sounds fun/cool	5
Caution: Needs to be distinct from other qualifications	8
Caution: Interesting but not 'my kind of subject'	1
Caution: Need to ensure inclusivity (e.g. field studies inclusive of those with special needs)	1
Caution: Would study parts of it in free time rather than as a GCSE	1
Total (from the 90 respondents who answered this question)	**126**

Delivery in schools/colleges

UK teachers/educators were asked how important different factors would be in contributing to their decision about whether to offer a Natural History GCSE at their school/college. Table 8 shows their responses. Almost all factors were considered 'very important' by at least 45% of respondents. The factors most frequently considered to be 'very important' to decisions were 'engagement with/understanding of nature', 'popularity with students', and 'teaching time'. 'Progression routes' was least frequently considered a very important factor.

Table 8. UK teacher/educator views on how important certain factors would be to their decision about offering a GCSE in Natural History in their school/college

	Very important		Somewhat important		Not important		Total	
Curriculum space	303	54.4%	210	37.7%	44	7.9%	557	100.0%
Curriculum breadth	270	48.9%	252	45.7%	30	5.4%	552	100.0%
Teaching time	339	61.4%	187	33.9%	26	4.7%	552	100.0%
Teaching specialism	264	47.8%	259	46.9%	29	5.3%	552	100.0%
Funding	255	46.1%	225	40.7%	73	13.2%	553	100.0%
Progression routes	175	31.6%	298	53.9%	80	14.5%	553	100.0%
Popularity with students	355	63.8%	189	34.0%	12	2.2%	556	100.0%
Support available	276	49.9%	249	45.0%	28	5.1%	553	100.0%
Engagement with/understanding of nature	402	72.4%	144	25.9%	9	1.6%	555	100.0%
Experiential learning	319	57.7%	206	37.3%	28	5.1%	553	100.0%
Build observation and inquiry skills	315	56.9%	218	39.4%	21	3.8%	554	100.0%
Mental health/well being	316	57.1%	202	36.5%	35	6.3%	553	100.0%

Whilst the availability of progression routes appeared to be the least important factor in decisions regarding delivery, when specifically asked over half of respondents (59%) reported that there was a need for a level 3 qualification in Natural History. A further 29% were unsure if there was such a need.

Respondents were asked to describe any other factors that they would consider when deciding whether to offer a GCSE in Natural History (Table 9). Previously mentioned areas such as the importance of differentiating from other GCSEs (e.g. Geography and Biology) and issues of available resources and funding were common. However, other major issues raised were related to ‘design, categorisation and content’; respondents had queries about the proposed depth and breadth of the course content, its classification as a science or humanities subject, whether assessment would be by exams or coursework, and how it would fit with any pre- and post-GCSE courses in Natural History.

Many respondents commented on the potential for measures such as Progress 8 and the English Baccalaureate to hinder uptake. There were also concerns about access and inclusivity: primarily the ability of all students to be able to access outdoor areas for fieldwork, but also the possibility that students from some backgrounds would lack the linguistic skills and IT access needed to study the course. The need was also stressed for the GCSE to be effective in preparing students for A Levels, further education and careers.

Finally, there were some respondents from Wales and Scotland who questioned whether it would be available and deliverable in their nations.

Table 9. Any other factors that UK teachers/educators feel would affect their decision to offer a GCSE in Natural History

Comment	Frequency
Relation to other courses	51
Design, categorisation and content	46
Resources, staff, curriculum, timetable etc	41
Recognition issues (e.g. EBacc, Progress 8)	25
Inclusivity and access issues	24
School/Student interest	22
Perception of value (e.g. parents, employers, FE etc)	20
Funding	15
Broader social value	6
Other	21
Total (from the 195 respondents who answered this question)	**271**

Respondents were asked to describe any barriers to the success of the qualification that they perceived (see Table 10). The most common barriers were related to funding, time, curriculum space and appropriate teacher expertise. Issues of inclusivity were also mentioned, with questions over the possibility of making parts of the course, such as field work, accessible to students from all backgrounds.

There were fewer concerns about the qualification itself; however, common themes which emerged included: 1) the potential for it to be seen as a low-value option with no clear career or further education path; 2) its problematic similarity in content to Geography and Biology and; 3) its potential lack of recognition within Progress 8 and/or the English Baccalaureate. There were also questions raised about its status as either a humanities or science subject, and exactly what the content would include.

Comparatively few respondents thought that a lack of interest on the part of schools and students would be problematic, and this aligns with responses to several other questions, which have suggested a keen interest in this academic area. There were some comments about the need for cooperation between various stakeholders such as the government, Ofqual and the exam boards.

Table 10. Perceived barriers to a GCSE in Natural History being successful, according to UK teachers/educators

Comment	Frequency
Time/staffing/curriculum restrictions	133
Funding	64
Negative perceptions of value/use (e.g. could be seen as a 'soft option')	60
Similarities to other qualifications	52
Inclusivity and access issues (e.g. access for those with special needs, those living in inner cities)	40
Lack of recognition (Progress 8, EBacc, etc)	37
Content/classification issues	32
Lack of student interest	26
Lack of school interest	19
Other	45
Total (from the 336 respondents who answered this question)	**508**

Conclusion and next steps

Responses tended to be positive about the proposed definition of Natural History and purpose of a GCSE in Natural History. In terms of scope of the qualification, most adult stakeholders felt it was important to include local, national and international flora and fauna, though international flora and fauna was of slightly less importance to some. Most responding young people also felt that it was important to study local, national and international plants and animals. In terms of content, the five proposed content themes were all considered important by many respondents. Outdoor study was felt to be important by a high proportion of respondents. Various skill types such as observation and recording, monitoring, cartographic skills and use of digital methods, data skills, research skills and qualitative skills were considered important to include in the qualification by many respondents.

A high proportion of young people reported that they would like (or would have liked) the option to study such a qualification. Various factors were reported by teachers/educators as likely to affect their decisions about delivering the qualification, including popularity with students and teaching time. Possible barriers to the success of the qualification reported by teachers/educators included restrictions on curriculum time and staff, funding, negative perceptions of its value, lack of recognition (e.g. within the English Baccalaureate), and ensuring inclusivity and access (e.g. access for those with special needs, access to outdoor spaces for those living in inner cities).

This consultation has confirmed a high level of interest in a GCSE in Natural History and provides various insights that could inform its development. OCR plans to submit a proposal for a GCSE in Natural History to the Department for Education (DfE) and if the DfE decide to take this proposal forward, they would then conduct their own consultation. If based on their consultation the DfE agree to a GCSE in Natural History, the DfE and Ofqual would consult again to agree the subject content and requirements. OCR would then develop a GCSE Natural History specification and sample assessment materials, which would be submitted to Ofqual for accreditation. All being well, OCR would subsequently launch the accredited documentation along with a package of teacher support materials. These would be made available one year before first teaching. It is the aim that first teaching would begin in September 2022 or 2023 depending on previous steps in the process.

Appendix A – Additional detail on suggested content and skills, reproduced from the questionnaire

Figure A1. Additional details of the five possible content themes set out in the main questionnaire

Theme 1: The natural shaping of the world

Potential content areas for this theme (non-exhaustive):

- Why are landscapes as they are?
- Pangea
- Plate tectonics (vertical as well as lateral movement, e.g. giving rise to marine fossils at high altitude)
- Island formation by volcanic activity
- Ice ages/glaciation
- Distinctive landscapes (e.g. limestone pavements, glacial valleys)
- Natural changes over time and the impact on flora and fauna.

Theme 2: Life in the early world

Potential content areas for this theme (non-exhaustive):

- Evidence of the early world in modern landscapes
- Dinosaurs
- The rise of mammals
- Fossil records (the Jurassic coast)
- Fossil plants and piecing ecologies together
- Evolution

Theme 3: Flora and fauna

Potential content areas for this theme (non-exhaustive)

- Inter-relationships; understanding of biodiversity
- Humans being part of the natural world and reliant upon it
- Habitats (world versus local, urban versus rural)
- Basic knowledge of terrestrial/aquatic organisms (animals, plants, fungi etc.)
- Taxonomies/classification
- Organisms of the British Isles
- Practical uses of flora/fauna - past and present (e.g. medicine, manufacturing)
- Ecology

Theme 4: Human impact on the world

Potential content areas for this theme (non-exhaustive):

- Impact of humans on ecosystems/habitats
- Climate change (e.g. impact on flora/fauna)
- Land management practices (impact on flora and fauna)
- Effects of introducing non-native species (e.g. harlequin ladybirds, Rhododendron)
- How different communities around the world (especially indigenous peoples) have developed sustainable ways to live
- Farming methods
- Impact of diet choices for land usage and environmental impact
- Conservation methods/measures
- Methods of tracking/monitoring organisms
- Controlling invasive species
- Nature reserves/marine reserves
- Introduction of grazing to encourage biodiversity (e.g. in woodland)
- Species reintroduction (e.g. wolves, beavers, red kites)
- Impacts of losing our natural history (past and present)

Theme 5: Our changing view of the world

Potential content areas for this theme (non-exhaustive):

- Description, interpretation and classification of the natural world over time (from cave paintings to natural history documentaries)
- Land usage conflict
- How the natural world is depicted

- Changing cultural views on the natural world over time (e.g. whale hunting versus whale watching holidays)
- Natural history and culture (influence and aspiration drawn from the environment)
- Representation in art and literature (e.g. poetry).

Figure A2. Details of skills set out in the main questionnaire

Observation and recording skills

Examples include:

- Use and understand classification systems
- Identify and describe diversity at different levels of scale to understand complexity and change
- Document and record evidence collected in the field, e.g. through use of illustration, photographic/film portfolios, field notebooks
- Preservation/recording/cataloguing/curation of specimens

Monitoring skills

Examples include:

- Safe use of techniques for monitoring/detecting organisms. For example: Longworth traps, moth traps, camera traps, satellite tags, methods for monitoring reptiles, using photographs, bat detectors, bird ringing, etc.
- Use of indirect evidence (e.g. signs, tracks, landscape analysis)
- Use of Identification charts

Cartographic skills and use of digital methods

Examples include:

- Use and understand Geographical Information Systems (GIS)
- Use and understand digital data collection methods
- Interpretation and analysis of mapped data/information

Data skills

Examples include:

- Methods of tabulating and manipulating data
- Methods of representing data graphically
- Interpreting and analysing data
- Validity and reliability of results
- Understand appropriate sample sizes
- Use of approximation
- Interpretation and analysis of visual imagery (art, photographs, diagrams)
- Understanding of bias in written and visual representations of the natural world
- Critical thinking, ability to be critical about data/statistics on the natural world

Research skills

Examples include:

- Understand the selection and justification of a research topic
- Explore and understand the process of research
- Use of primary and secondary sources of information
- Presentation methods of research findings
- Recording sources used e.g. bibliography
- Ethical consideration of the approaches for capturing/recording impact on the environments being studied

Qualitative skills

Examples include:

- Interpretation and analysis of visual imagery (art, photographs, diagrams)
- Understanding of bias in written and visual representations of the natural world

Appendix B – Tabulated data from main questionnaire

Table B1. Whether responding stakeholders are based in the UK

	Yes		No		No response		Total	
Are you based in the UK?	2184	70.6%	60	1.9%	848	27.4%	3092	100.0%

Table B2. Extent to which stakeholders agreed with the definition provided

	Strongly agree		Agree		Neither agree nor disagree		Disagree		Strongly disagree		Total	
To what extent do you agree or disagree with the definition we have provided above?	1241	40.4%	1535	50.0%	129	4.2%	60	2.0%	106	3.5%	3071	100.0%

Table B3. Extent to which stakeholders agreed with the purpose described

	Strongly agree		Agree		Neither agree nor disagree		Disagree		Strongly disagree		Total	
To what extent do you agree with the purpose described above?	1173	44.1%	1246	46.9%	98	3.7%	63	2.4%	79	3.0%	2659	100.0%

Table B4. Whether stakeholders feel there are any additional content themes that they would expect to be included in GCSE Natural History

	Yes		No		Total	
In this section we have shared some ideas for possible content themes. Is there a theme that you would expect to be included in GCSE Natural History that we didn't list?	681	30.8%	1530	69.2%	2211	100.0%

Table B5. Extent to which stakeholders agreed that a GCSE in Natural History should include an element of outdoor study

	Strongly agree		Agree		Neither agree nor disagree		Disagree		Strongly disagree		Total	
To what extent do you agree that an element of outdoor study should be an important part of a GCSE in Natural History?	1989	84.3%	276	11.7%	56	2.4%	10	0.4%	29	1.2%	2360	100.0%

Table B6. UK teacher/educator views on whether there is a need for a Level 3 qualification in Natural History

	Yes		Unsure		No		Total	
Do you perceive there to be a need for a Level 3 (e.g. A Level) qualification in this area?	334	58.9%	162	28.6%	71	12.5%	567	100.0%

Appendix C – Tabulated data from young people's questionnaire

Table C1. Current educational experience of young people responding to questionnaire

		Count	Column N %
Which of the options below best describes you?	Not yet chosen my GCSE options	49	23.4%
	Currently studying for my GCSEs	43	20.6%
	Completed my GCSEs and in full time education	98	46.9%
	Completed my GCSEs and in part time education	5	2.4%
	Completed my GCSEs and an apprentice or trainee	4	1.9%
	Other	10	4.8%
	Total	209	100.0%

Table C2. Subjects that responding young people were taking for GCSE, had already taken as a GCSE or have an interest in

Subject	Count
Art	61
Computer Science	34
Design and Technology	47
English	170
Geography	123
History	95
Maths	173
Media	14
Modern Foreign Languages	114
Music	36
Physical Education	30
Religious Studies	71
Science	172
Other	69
Total number of students giving a response	**189**

Table C3. Young people's views on whether the definition tells them enough about what Natural History is

	Yes		Not sure		No		Total	
Does this definition tell you enough about what natural history is?	185	89.4%	11	5.3%	11	5.3%	207	100.0%

Table C4. Young people's level of interest in topics within Theme 1: The natural shaping of our world

	Very interested		Interested		Not sure		Not interested		Not at all interested		Total	
The natural shaping of our world: Volcanic activity	67	33.7%	93	46.7%	23	11.6%	15	7.5%	1	0.5%	199	100.0%
The natural shaping of our world: Ice-age	87	43.7%	88	44.2%	18	9.0%	6	3.0%	0	0.0%	199	100.0%
The natural shaping of our world: Changing landscapes over time	85	42.7%	84	42.2%	22	11.1%	8	4.0%	0	0.0%	199	100.0%

Table C5. Young people's level of interest in topics within Theme 2: Life in the early world

	Very interested		Interested		Not sure		Not interested		Not at all interested		Total	
Life in the early world: Dinosaurs	102	51.3%	67	33.7%	16	8.0%	13	6.5%	1	0.5%	199	100.0%
Life in the early world: Fossils	81	40.7%	86	43.2%	15	7.5%	16	8.0%	1	0.5%	199	100.0%
Life in the early world: Evolution	123	61.8%	56	28.1%	14	7.0%	4	2.0%	2	1.0%	199	100.0%

Table C6. Young people's level of interest in topics within Theme 3: Flora and fauna

	Very interested		Interested		Not sure		Not interested		Not at all interested		Total	
Flora and fauna (all life on Earth): Biodiversity (the variety of plant and animal life)	141	71.6%	48	24.4%	8	4.1%	0	0.0%	0	0.0%	197	100.0%
Flora and fauna (all life on Earth): Life on land	120	60.3%	66	33.2%	8	4.0%	4	2.0%	1	0.5%	199	100.0%
Flora and fauna (all life on Earth): Life in our oceans	141	71.2%	53	26.8%	3	1.5%	1	0.5%	0	0.0%	198	100.0%
Flora and fauna (all life on Earth): Habitats (world scale through to local scale)	118	59.3%	63	31.7%	12	6.0%	6	3.0%	0	0.0%	199	100.0%
Flora and fauna (all life on Earth): Habitats (rural and urban)	101	50.8%	76	38.2%	14	7.0%	6	3.0%	2	1.0%	199	100.0%
Flora and fauna (all life on Earth): Humans being part of the natural world and reliant upon it	115	57.8%	58	29.1%	14	7.0%	11	5.5%	1	0.5%	199	100.0%

	Very interested		Interested		Not sure		Not interested		Not at all interested		Total	
Flora and fauna (all life on Earth): How we use plants and animals (e.g. in medicine or manufacturing)	100	50.3%	61	30.7%	16	8.0%	20	10.1%	2	1.0%	199	100.0%

Table C7. Young people's level of interest in topics within Theme 4: Human impact on the world

	Very interested		Interested		Not sure		Not interested		Not at all interested		Total	
Human impact on the world: Impact of humans on ecosystems/habitats	147	73.9%	38	19.1%	9	4.5%	5	2.5%	0	0.0%	199	100.0%
Human impact on the world: Climate change	149	74.9%	40	20.1%	5	2.5%	5	2.5%	0	0.0%	199	100.0%
Human impact on the world: Land management practices (e.g. woodland planting, tree felling, farming)	109	54.8%	59	29.6%	13	6.5%	16	8.0%	2	1.0%	199	100.0%
Human impact on the world: Effects of introducing non-native species (e.g. the grey squirrel has led to declining numbers of the red squirrel in the UK)	122	61.6%	65	32.8%	5	2.5%	6	3.0%	0	0.0%	198	100.0%
Human impact on the world: How different communities around the world (especially indigenous peoples) have developed sustainable ways to live	125	62.8%	48	24.1%	9	4.5%	14	7.0%	3	1.5%	199	100.0%
Human impact on the world: Farming methods (e.g. removal of hedgerows)	77	38.9%	62	31.3%	22	11.1%	29	14.6%	8	4.0%	198	100.0%
Human impact on the world: Impact of diet choices for land usage and environmental impact	81	40.7%	77	38.7%	21	10.6%	16	8.0%	4	2.0%	199	100.0%
Human impact on the world: Conservation methods (ways to protect nature)	155	77.9%	35	17.6%	6	3.0%	2	1.0%	1	0.5%	199	100.0%

	Very interested		Interested		Not sure		Not interested		Not at all interested		Total	
Human impact on the world: Methods of tracking/monitoring organisms	94	47.5%	79	39.9%	17	8.6%	8	4.0%	0	0.0%	198	100.0%
Human impact on the world: Controlling invasive species (e.g. against UK law to allow Japanese knotweed to spread in the wild)	84	42.2%	76	38.2%	27	13.6%	12	6.0%	0	0.0%	199	100.0%
Human impact on the world: Nature and marine (ocean) reserves	138	69.7%	48	24.2%	9	4.5%	3	1.5%	0	0.0%	198	100.0%
Human impact on the world: Introduction of grazing to encourage biodiversity (e.g. in woodland)	93	47.0%	72	36.4%	22	11.1%	10	5.1%	1	0.5%	198	100.0%
Human impact on the world: Species reintroduction (e.g. wolves, beavers, red kites)	147	73.9%	47	23.6%	4	2.0%	1	0.5%	0	0.0%	199	100.0%
Human impact on the world: Impacts of losing our natural history (past and present)	131	65.8%	49	24.6%	13	6.5%	5	2.5%	1	0.5%	199	100.0%

Table C8. Young people's level of interest in topics within Theme 5: Our changing view of the world

	Very interested		Interested		Not sure		Not interested		Not at all interested		Total	
Our changing view of the world: Description, interpretation and classification of the natural world over time (from cave paintings to natural history documentaries)	83	41.7%	79	39.7%	24	12.1%	11	5.5%	2	1.0%	199	100.0%
Our changing view of the world: Land usage conflict	65	32.8%	86	43.4%	24	12.1%	18	9.1%	5	2.5%	198	100.0%
Our changing view of the world: How the natural world is shown (e.g. in drawings and paintings, television and films, poems and writing)	66	33.2%	61	30.7%	38	19.1%	25	12.6%	9	4.5%	199	100.0%

	Very interested		Interested		Not sure		Not interested		Not at all interested		Total	
Our changing view of the world: Changing cultural views on the natural world over time (e.g. a shift from whale hunting to whale watching holidays)	85	42.7%	71	35.7%	23	11.6%	15	7.5%	5	2.5%	199	100.0%
Our changing view of the world: Natural history and culture (influence and aspiration drawn from the environment)	80	40.4%	69	34.8%	26	13.1%	17	8.6%	6	3.0%	198	100.0%

Table C9. Young people's expectations of whether Natural History would involve some outdoor study

	Yes		Not sure		No		Total	
Based on what you know about natural history, would you expect to spend some time studying outdoors?	182	93.3%	11	5.6%	2	1.0%	195	100.0%

Table C10. Interest expressed by young people in studying a GCSE in Natural History

	Yes		Not sure		No		Total	
Would you like, or would you have liked, the option to study for a GCSE in natural history?	182	93.8%	10	5.2%	2	1.0%	194	100.0%