Department for Education

Reformed GCSE, AS and A level subject content

Government consultation response

January 2016

Contents

Introduction

On 16 July 2015 the Department for Education published a consultation on proposed content for GCSEs in astronomy, business, economics, engineering, geology, psychology and sociology, and AS and A levels in design and technology, environmental science, history of art, music technology and philosophy. The proposed GCSE subject content aims to provide students with more fulfilling and demanding courses of study; new A level content aims to encourage development of the knowledge and skills needed for progression to undergraduate study and employment. The consultation sought views on the following questions:

- whether the revised GCSE content in each subject is appropriate:
    - whether there is a suitable level of challenge
    - whether the content reflects what students need to know in order to progress to further academic and vocational education
- whether the revised AS and A level content in each subject is appropriate:
    - whether the content reflects what students need to know in order to progress to undergraduate study
- whether any of the proposals have the potential to have a disproportionate impact, positive or negative, on specific students, in particular those with 'relevant protected characteristics' (The relevant protected characteristics are disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex and sexual orientation.)
- whether any adverse impact be reduced and how could the subject content of GCSEs and/or A levels be altered to better advance equality of opportunity between persons who share a protected characteristic and those who do not share it

The consultation ran for ten weeks until 24 September 2015. It received 1381[1] responses from schools, further and higher education institutions, employers, subject associations, curriculum and assessment experts, and the general public. Awarding bodies also met with some subject associations to help us understand expert views in more detail.

[1] The total number of consultation responses and the numbers of respondents for each group below include responses on sociology GCSE.

Ofqual, the independent regulator, consulted in parallel on GCSE, AS and A level assessment arrangements for these subjects. Ofqual's response to its consultation will be available at: www.gov.uk/government/consultations/.

The Department has considered the evidence gathered and has worked with awarding organisations to publish final subject content for GCSEs in astronomy, business, economics, engineering, geology and psychology, and AS and A levels in design and technology, environmental science, history of art, music technology and philosophy.

We have published an equalities impact assessment alongside this consultation response. The impact assessment responds to the consultation responses on the equalities questions above, and the issues raised in these responses were considered when finalising the subject content.

Of the responses we received for the July consultation:

- 714 were submitted directly from teachers
- 127 were submitted on behalf of schools
- 123 were submitted on behalf of awarding organisations (the majority of these responses were from members of the public rather than awarding organisations)
- 112 were submitted by young people
- 106 were submitted on behalf of Academies
- 68 were submitted by parents
- 36 were submitted on behalf of colleges and further education institutions
- 34 were from employers/business sector
- 30 were submitted on behalf of subject associations
- 17 were submitted on behalf of higher education establishments
- 9 were submitted on behalf of organisations representing school teachers and lecturers
- 5 were submitted on behalf of local authorities

A full list of the organisations that have responded can be found at the annex.

Overview of reforms

The government is reforming GCSEs and A levels to make sure that they prepare students for further and higher education, and employment. We are reforming GCSEs to ensure they set expectations which match those of the highest performing countries, with rigorous assessment that provides a reliable measure of students' achievement. The new A levels will be linear qualifications that encourage the development of the knowledge and skills students need for progression to undergraduate study. The content provides for awarding organisations to develop new stand-alone AS qualifications taught over one or two years that can be co-taught with the new linear A level. Students may want to benefit from this change and only take an AS qualification to add breadth to their A level study. However, it will continue to be possible for students to take an AS in some subjects before deciding which to continue to A level.

Reforms to these qualifications are already underway. GCSE subject content in English literature, language and mathematics was published in November 2013, and the new qualifications were taught from September 2015. Specifications for these GCSEs can now be found on awarding organisations' websites. GCSE subject content in ancient languages, geography, history, modern foreign languages, biology, chemistry and physics, which will be taught from September 2016, was published in April 2014.

At AS and A level, subject content in art and design, biology, business, chemistry, computer science, economics, English language, English literature, English language and literature, history, physics, psychology and sociology was published in April 2014. These new qualifications were taught from September 2015. Specifications for these AS and A levels can be found on awarding organisations' websites.

Responsibility for reviewing AS and A level subject content for ancient languages, modern foreign languages and geography which will be taught from September 2016, and mathematics and further mathematics which will be first taught from September 2017, was remitted to a new independent body, the A level Content Advisory Board (ALCAB)[2]. AS and A level content for these subjects was published in December 2014.

In April 2014 the Secretary of State announced that a further set of GCSEs and A levels would be reformed and introduced for first teaching from 2016. We published reformed GCSE subject content for art and design, computer science, dance, music, and physical education, and AS and A level subject content for dance, music, and physical education in January 2015. In February we published reformed GCSE subject content for religious

[2] Following a request from the Department, the Russell Group of universities set up ALCAB to review subject content in these subjects, together with ancient and classical languages.

studies, citizenship studies and drama, and AS and A level subject content for drama and theatre, and religious studies. These subjects will be first taught in schools from September 2016.

The department published GCSE subject content for design and technology GCSE in November 2015, for first teaching in 2017.

Content is being and has been developed for a further set of GCSEs, AS and A levels to be taught from 2017. Development of these subjects has been led by awarding organisations, working closely with subject associations, subject experts and, for A levels in particular, representatives from higher education institutions.

This document is our response to the consultation on revised content for astronomy, business, economics, engineering, geology and psychology GCSEs and design and technology, environmental science, history of art, music technology and philosophy AS and A levels between July and September 2015, for first teaching from 2017.

The department consulted on revised content for ancient history, classical civilisation, electronics, film studies, media studies and statistics GCSEs and accounting, ancient history, archaeology, classical civilisation, electronics, film studies, law, media studies and statistics AS and A levels for first teaching from 2017 between September to November 2015. We will publish the outcomes from this consultation early this year.

The department recently consulted on revised content for physical education GCSE short course and geology and politics AS and A levels for first teaching from 2017. This consultation ended on 15 December 2015. We will publish the outcomes from this consultation early this year.

Earlier this year we confirmed that AS and A levels in general studies, creative writing and health and social care, and GCSEs, AS and A levels in IT/ICT would not be developed further.

The reforms of academic qualifications that are underway are the most significant changes since the introduction of GCSEs. These are just one part of our ambitious reform programme to give young people the knowledge and skills they need to succeed in life. The priority now is to give schools time and space to provide excellent and inspiring teaching of the new qualifications. We therefore do not intend to reform any further qualifications in 2018 beyond the lesser taught languages that we have already committed to.

Summary of responses received and the Government's response

This section sets out the views that we have heard in response to the consultation on 2017 GCSEs and A levels. It also sets out the decisions that have been taken to finalise the content in these subjects.

The written responses and the views expressed by subject experts during the consultation period and throughout the development process have been important in shaping and strengthening the content. Awarding organisations and the Department have also worked closely with Ofqual to ensure that the subject content can be regulated.

The summary of the responses for sociology GCSE has not been included below as further work was needed to address the issues raised by respondents in the consultation. The summary of responses and the Government's response to this will be published early this year.

Some respondents who provided written responses to the consultation chose only to answer a subset of the questions that were posed. Therefore, response figures for each subject differ depending on which questions people answered, for example we received 1242 responses to our question on design and technology AS and A level whereas there were 81 responses for geology GCSE. Throughout the report, percentages are expressed as a measure of those answering each question, not as a measure of all responses.

This analysis does not include issues mentioned by respondents which were outside the scope of the GCSE and AS and A level subject content consultation – for example, issues raised on the decoupling of the AS and A level qualification, upon which a decision was taken in March 2013.

Some responses were relevant to Ofqual's parallel consultation on GCSE, AS and A level regulatory requirements and assessment arrangements. These issues will, be addressed by Ofqual in its consultation response and are therefore not reported here.

Astronomy GCSE

We received 89 responses on the suitability of the astronomy GCSE subject content, of which 27 agreed the draft content was appropriate.

Is the revised GCSE content in astronomy appropriate?	Total	Percent
Yes:	27	30%
No:	25	28%
Not Sure:	37	42%

In total, 21 respondents provided comments to explain their answers. Of those who answered ‘not sure’ or ‘no’, eight provided specific comments on the content. Of those who answered ‘yes’, ten respondents provided comments, including nine who provided specific comments explaining why they considered that the content is appropriate. Three respondents questioned the need for astronomy to be taught in schools at all.

Five respondents considered that the content is too challenging, in terms of the overall amount of requirements, and the difficulty of particular requirements (for example pressure, dark matter, distance modulus, shadow sticks). Three respondents considered it unnecessary to include the content on the different star/constellation names which are used by other cultures.

Three respondents commented on the mathematics requirements – for example that the use of logarithms goes beyond the level of the maths GCSE, that the mathematics requirements should be more consistently integrated in all parts of the content, and that the appendix should include all the mathematics skills which have been integrated in the content (for example, evaluation of data).

There were a number of other varied comments on the detail of the content. For example two respondents considered that there is too much historical content (for example, transit of Venus), and that this should be removed to allow the addition of current issues (for example, Milankovitch cycles). Two respondents suggested more content on human spaceflight and space engineering. Two respondents said the requirements on the earth’s geography (equator, tropics, latitude and longitude, etc.) are unnecessary.

One respondent considered it inappropriate to include ‘working scientifically’ in full, suggested an edited and tailored version for astronomy (recognising that astronomy students will also be studying science), and in particular highlighted that grams and miligrams are not relevant and that hypothesis-testing was not suitable for astronomy.

Another highlighted knowledge requirements which they advised are not based on established facts – for example, the moon's structure. The respondent did not question the inclusion of these areas, but did argue that the content should make clear that astronomers would consider that the knowledge is not yet certain.

Government response on astronomy GCSE

The comments received ranged across different parts of the content, and there were no areas of content which attracted a large volume of comments.

Some respondents suggested that certain requirements were too demanding. These requirements included, for example, the requirement to study two specific methods of measuring longitude, and the study of qualitative treatment of electron and neutron pressure. While these will be demanding for some students, the changes are in line with the policy aim of increasing the demand of all reformed GCSEs to set expectations that match those in the highest performing countries.

Awarding organisations therefore consider that the content on which we consulted was largely appropriate, and are making only a small number of minor changes. These changes are to recognise that particular areas of astronomical research have yet to reach firm conclusions, or that specific detailed findings and methods could quickly become outdated by new scientific developments.

There are two amendments in the section on formation processes. The requirements to study the role of condensation in creating solid ice particles beyond the ice line during the formation of gas giant planets, and the role of impacts in determining the current position and orientation of planets in our solar system, have been changed to recognise that these theories are changing rapidly. The requirement is now worded in more general terms. In the section on planetary systems, the requirement to study the Drake equation, while of limited use as a quantitative tool, has been expanded to reflect that this model is not for measurement purposes and should be included more broadly as part of the study of the question of whether there is life elsewhere in the galaxy.

In the section on cosmology, the requirement to study dark matter has been very slightly amended to recognise that there remains significant uncertainty about this area of research. There is also a small change to the requirement to study Cosmic Microwave Background Radiation, removing the specific reference to the Wilkinson Microwave Anisotropy Probe (WMAP), to allow students to cover other methods which can provide data which is more up to date. In the content on galaxies, the specific requirement to study the Hubble tuning fork diagram has been removed because it has a number of shortcomings as a model, and Hubble's ideas of classification of galaxies are covered as part of the first bullet in this section.

Awarding organisations have made small clarifications to the requirements on working scientifically, which apply to all sciences. For example, they have adapted the SI units for the specific application to astronomy. Awarding organisations considered the mathematics requirements and concluded that these should remain unchanged. While

the use of logarithms is beyond the level of the mathematics GCSE, it is essential for the study of astronomy, and should be included at an appropriate level.

Business GCSE

We received 95 responses on the suitability of the business GCSE subject content, of which 41 agreed the draft content was appropriate.

Is the revised GCSE content in business appropriate?	Total	Percent
Yes:	41	43%
No:	24	25%
Not Sure:	30	32%

In total, 25 respondents provided comments to explain their answers. Of those who answered 'not sure' or 'no', 14 (51%) provided comments on the content. Of those who answered 'yes', ten provided comments, seven of which were specific comments to explain why they considered the content appropriate, and three were limited to general support for the subject. One respondent questioned the need for the subject at GCSE.

Seven respondents suggested that the finance content should be strengthened by introducing ratio analysis and break-even. One of these respondents also commented that in their view the finance content included unnecessary requirements (for example, average rate of return). Another correspondent suggested that Net Profit is not an appropriate term, and that Operating Profit or Profit for the Year were suitable alternatives.

Three respondents commented on the quantitative skills requirements, including a suggestion for more emphasis on uncertainty and risk, and recognition of the difficulty of identifying causal relationships. Two respondents suggested that the numeracy skills should be more integrated in the knowledge requirements, to emphasise the use of data such as sales figures to make decisions, and the calculation of percentage change. Two respondents considered that the content should be made more challenging, with more depth rather than breadth, and more requirements for knowledge in certain areas – for example, how business decisions are made and how business problems are overcome, in real business contexts. One of these respondents proposed a requirement to understand how businesses deliver value to customers. Conversely, two respondents argued that the content is too detailed, and were concerned that this would lead to superficial teaching in some areas, and that some areas would be too difficult (for example cashflow forecast calculations).

There were a number of other varied comments on the detail of the content. For example, one respondent suggested more detail on technological change and its effect on cost and productivity. Two respondents proposed more focus on real world practice

and strategies for overcoming problems, including in smaller businesses. Another suggested more on entrepreneurship skills to encourage small businesses in future. A further respondent considered that the section on customer service might be too general and could lack meaning.

Government response on the business GCSE

Overall, the responses to the consultation suggested that the content was broadly appropriate. Awarding organisations have strengthened further the content with three additions to content that were suggested in the consultation.

There is now a stronger requirement for knowledge of business decision-making. A new section has been added to emphasise that students must understand that decision-making involves all business areas and functions and that these are interdependent, that decision-making is influenced by different business contexts, and that it requires the use of quantitative and qualitative data. Awarding organisations have also introduced a requirement to study break-even as part of the finance section, reflecting a suggestion from a number of consultation respondents. Third, as part of their understanding of how to use data, students should understand the possible limitations of quantitative and qualitative data. This has been included in the new section on business decision-making.

Taken together, these changes have strengthened the overall demand and challenge of the content. While other suggestions were received, these were quite varied and there were no other areas of content which attracted strong consensus for change. Some suggestions did not warrant further changes to content – for example, the content already included a requirement to understand risk and uncertainty, as part of the requirements on business activity. While it is recognised that the requirements are demanding, and in some instances will be difficult for some students (for example cashflow forecast calculations), this is consistent with our aim of increasing the demand of all GCSEs.

The other specific suggestions made by individuals in the consultation were also considered by awarding organisations who decided they would not be appropriate for inclusion in the subject content.

Economics GCSE

There were 87 responses on the suitability of this content. 38 respondents agreed that the content was appropriate.

Is the revised GCSE content in economics appropriate?	Total	Percent
Yes:	38	44%
No:	19	22%
Not Sure:	30	34%

In total, 18 respondents provided comments. Of those who answered ‘not sure’ or ‘no’, nine provided comments to explain their views on the content. Of those who answered ‘yes’, eight provided comments, five of which explained specifically why they considered that the content was appropriate, three were limited to general support for subject. One respondent questioned the need for the subject at GCSE.

Five respondents commented that in their view the content was too challenging, with excessive overlap with the AS and A level content, and that this will encourage superficial teaching. Suggested topics for omission at GCSE included elasticity, economies of scale, financial sector, unemployment and inflation, circular flow of income, and competitive and non-competitive markets.

Three respondents commented that the content placed too much emphasis on concepts and principles, encouraging ‘dry’ teaching and reducing the subject’s appeal to a range of students. Two of these respondents suggested that the content should include requirements to understand personal economics, to make the subject more appealing, as found in the current AQA specification.

Two respondents commented on the quantitative skills requirements, including a proposal for more emphasis on uncertainty and risk. These respondents also commented on the difficulty of identifying causal relationships when using data.

There were a number of comments on the detail of the content. For example, two respondents proposed content on environmental economics, or the costs and benefits of economic activity. Two commented that in their view it was not appropriate to include a specific requirement for students to read and understand articles written by leading economists. One respondent suggested a flexible opportunity for specifications to ask about ‘current economic issues’, and one that the content should require more knowledge of major episodes or developments in economic history.

Government response on the economics GCSE

In response to concerns that the content was too demanding, too theoretical, and that there is too much overlap with the AS and A level, while this qualification will be demanding for some students, the changes support our policy aim of increasing the demand of all reformed GCSEs to set expectations that match those in the highest performing countries.

Awarding organisations have considered the comments on the requirements to study theory, and are clear that it is essential to study some of the main theories in economics, including their implications for behaviour and policy. This is appropriate for a strong academic grounding in the subject. In this context, it is not appropriate for students to adopt personal or subjective approaches economics. There are, however, two small areas of theory where it was agreed that the requirements were slightly too demanding for GCSE. In the introduction to economics section, they have removed the requirement to study the circular flow of income model. In the role of markets section, they have made a small change to the requirement to understand economies of scale. Students will be required to understand the meaning of economies of scale, but not the effects.

Awarding organisations have made a small number of other minor changes to the content. In the aims and outcomes section, to clarify the types of economic issues which should be studied, they have replaced the terms ‘topical’ and ‘real’ with the term ‘current and historical’.

In the skills section, as part of the requirement to understand how to make reasoned and informed judgements using data, we have added a requirement to understand the possible limitations of data. This strengthens further the existing emphasis on the requirement to understand how to interpret data.

The other specific suggestions made by individuals in the consultation were also considered by awarding organisations who decided they would not be appropriate for inclusion in the subject content.

Engineering GCSE

We received 96 responses on the suitability of the engineering GCSE subject content, of which 40 agreed the draft content was appropriate.

Is the revised GCSE content in engineering appropriate?	Total	Percent
Yes:	40	42%
No:	21	22%
Not Sure:	35	36%

22 respondents to this question provided comments. The comments varied with very few responses that covered similar issues.

Two respondents suggested reducing some of the mathematical content, arguing that candidates must obtain excellent mathematics grades as well to be effective engineers. However, others felt the increased mathematical content was important and could in fact go further – for example, one respondent felt that the appendix should make clear that interpreting the maths skill is key (as an example, not just calculating the slope of a graph but knowing what the slope means). This respondent also felt that relevant mathematical knowledge could be included within each section of the content.

There were a small number of comments about the general focus of the qualification – but the comments varied and there was no consensus. One respondent felt that engineering would sit better within design and technology, as this would ensure greater take-up. This same respondent also felt that content around electrical control systems was not adequate. Two respondents commented that there was potential overlap with design and technology. Another respondent felt the content was too demanding – especially in comparison with design and technology GCSE – and was more suited to GCE level. One respondent felt that the content was too focused on manual, task-oriented production and manufacturing activity, which they felt was backwards-looking and uninspiring for students.

There were 13 responses with varied individual comments on the detail of the content. For example, one respondent commented that there is no mention of aerodynamics or drag forces, which would be a central aspect of any engineering project outcome that moves through a fluid. One respondent commented that the logical constructs in Pneumatic/Hydraulic systems are covered by analogous logic in electronics and, to avoid overlap, should be deleted. One respondent commented that there was no requirement for students to have knowledge and understanding of construction materials, other than

metals and timber, for example brick, aggregate (e.g. mortar) or glass. Another respondent commented that more detail on electrical programmable systems is required, and that there needs to be a greater focus on analysis and evaluation skills.

Government response on the engineering GCSE

The comments relating to the mathematical content are varied. The principles for reform are to ensure GCSEs are more rigorous and equip students with the knowledge and skills they need to progress, and to set expectations that match those in the highest performing countries. On reviewing the mathematical requirements for engineering GCSE, awarding organisations feel the detail and level of demand here is right. We have therefore not made any changes to the mathematics content.

As with mathematical content, comments on the overall focus of the content were varied, but overall there was support for the draft. On the issue of overlap with regard to the design and technology GCSE, awarding organisations and Ofqual are confident that the small amount of overlap between the two subjects is appropriate.

Awarding organisations have made a number of minor changes to include some of the suggestions made by respondents. Awarding organisations carefully considered the suggestion to cover construction materials within the content, but having reviewed this issue, we are reassured that this content is covered elsewhere in vocational/construction qualifications, and would not be an appropriate addition to GCSE content. Including construction materials in engineering content could also raise an issue around accessibility to such civil engineering materials for some schools and colleges.

On Aerodynamics/drag forces, we agree that this is important and have therefore added a requirement for students to know and understand the principles of aerodynamics and drag forces; lift, drag and thrust. Awarding organisations considered the concern raised regarding overlap with electronics content with regard to pneumatic/hydraulic systems, but believe that this is a key element of many engineering systems and processes and removing them could mean losing an aspect of the industrial relevance of the content. They have therefore retained this in the content.

Geology GCSE

We received 81 responses on the suitability of the geology GCSE subject content, of which 26 agreed the draft content was appropriate.

Is the revised GCSE content in geology appropriate?	Total	Percent
Yes:	26	32%
No:	19	23%
Not Sure:	36	44%

Of the 81 responses, there were only 18 comments provided, with a variety of issues covered. The majority (10), of these comments, were positive in their feedback; for example one respondent commented that the content represented a perfect introduction to the subject and good progression to further study. Another respondent felt the content ensured good links to science and geography.

Of those who answered ‘not sure’ or ‘no’, 7 respondents provided reasons. Four of these responses indicated that the respondents were not convinced that a geology GCSE was needed, as there would be limited career paths, the take-up was small, or that the content was already adequately covered in other subjects (for example geography/science).

There were a number of varied individual comments on the detail of the content. Specific comments/suggested amendments including, for example, that the mineral resources section should also include bulk minerals (e.g. aggregates, clays etc.) and ore minerals; that 'the type of magmatism and seismic activity associated with different plate boundaries' should be extended to include ‘deformation and topographic features’; that references to natural hazards should clarify that they ‘can be forecast but not predicted'; and that it is important to include reference to the importance of, groundwater as a water resource as well as a fundamental part of aquatic and water-dependent ecosystems.

Government response on the geology GCSE

Awarding organisations have reviewed the content in relation to comments received from the consultation and from discussions with stakeholders and agreed a number of changes and additions. On the need for more coverage in the minerals section, the final statement in the 'Minerals' section has been amended to ensure a balanced coverage of mineral uses.

On the suggestion to extend the section setting out detail on ‘magmatism and seismic activity’ to include ‘deformation and topographic features’, we agree and have made that change. We have however, retained the original wording for the statement relating to natural hazards as the content is clear that predictions have limited accuracy.

Specific reference to groundwater has been removed to avoid overlap with other GCSE subjects including geography, however, related knowledge and understanding is implicit across the content.

With regard to comments about the purpose of geology GCSE, last year Ofqual conducted a consultation on the reform of GCSEs, AS and A levels for first teaching in 2017, the results of which were published in December 2014. In this Ofqual confirmed a set of principles, which they would apply to existing and new subjects alike, to determine whether it would be appropriate to develop core content in any particular subject. They then invited awarding organisations to submit proposals for subjects they wanted to reform for 2017.

In May 2015 Ofqual completed their review of these proposals, and decided that geology GCSE would go forward to the next stage of content development. The department and Ofqual are content that the final content developed by awarding organisations meets Ofqual’s principles for reformed GCSEs and the department’s guidance for rigorous GCSE content.

Psychology GCSE

We received 86 responses on the suitability of the psychology GCSE subject content, of which 33 people agreed the draft content was appropriate.

Is the revised GCSE content in psychology appropriate?	Total	Percent
Yes:	33	38%
No:	19	22%
Not Sure:	34	40%

17 respondents provided comments to explain their answers to this question. Of those who answered 'not sure' or 'no', ten provided comments on the content. One commented that in their view the subject was unnecessary at GCSE. Of those who answered 'yes', six provided comments. Five provided comments to explain specifically why they considered that the content was appropriate.

Four respondents commented that the overlap with the AS and A level content is excessive, and that the content is too demanding overall - with too much content and too many challenging topics. Two of these respondents commented specifically that important topics would be studied without enough depth, or would be taught only superficially.

Aside from the issue of overlap with AS and A level, five respondents questioned the appropriateness of the some of the core and optional topics, specifically criminal psychology, language and thought, sleep and dreaming. One of these respondents suggested including environmental psychology, crowd behaviour and positive psychology instead; another suggested attachment theory.

Three respondents considered that the abnormal psychology content, in particular clinical depression and schizophrenia, is inappropriate for the age range of GCSE students, and that some teachers will not be equipped to teach these topics with sensitivity.

Two respondents raised concerns that the size and demand of the optional content areas would not be comparable, as certain areas (for example perception, and sleep and dreaming) were larger and more demanding than the other areas. One respondent commented that the core content areas were not of comparable size; in particular that Child Development was too large. In addition, two respondents commented that the specific requirements under each topic heading, for example memory and perception, were not appropriate or logically structured.

While respondents seemed to agree that the research skills requirements were appropriate overall, there were varied specific comments. For example, one respondent

commented that students should not only plan a research project, but also conduct it; another said that the requirements should be explicit about variability and reliability of data, including as a result of small samples.

Government response on the psychology GCSE

In response to some significant concerns about the suitability of the content for the psychology GCSE, awarding organisations have revised and strengthened the detail of particular requirements, and adjusted the balance between compulsory and optional topics, while retaining the overall demand of the content.

In line with the policy aim of increasing the demand of all reformed GCSEs to set expectations that match those in the highest performing countries, the demand of the psychology GCSE will be higher than for the existing qualification, with much greater clarity about the core topics which should be studied at this level and a stronger grounding in scientific approaches. Awarding organisations have worked with leading stakeholder organisations to ensure that the qualification is underpinned by an understanding of the full range of expert perspectives on key aspects of psychology.

Awarding organisations have reduced the number of optional topics from six to five, by incorporating non-verbal communication into an expanded topic on language, thought and communication. Non-verbal communication was considered too small as a separate topic, when compared to the size of the other topics, and five optional topics is considered sufficient from which awarding organisations will choose two topics for specifications.

In addition, criminal psychology has been moved from the compulsory topics to the optional topics, while social influence has moved from optional to compulsory. Subject experts and stakeholders were clear that while criminal psychology is popular among students, social influence is a more essential topic at this level. Taken together, the five compulsory topics represent a strong grounding in the essential subject knowledge for GCSE students, along with two topics chosen from the optional list. In response to strong concerns that abnormal psychology was inappropriate, this topic has been significantly revised. The topic heading has been changed to psychological problems and the requirement to study abnormal behaviour has been replaced by an introduction to mental health.

It is important that content for all subjects supports valid assessment, and this includes ensuring that all options are equally demanding. To address concerns that specific phobias would be less demanding than the other three options in psychological problems, the option to study specific phobias has been removed. It has been replaced by addiction, which has clearer diagnostic criteria and will represent a suitable level of demand at a comparable level to the other options. Clinical depression and schizophrenia have been retained, as awarding organisations consider that it is possible for these disorders to be taught sensitively.

The topic of child development has been changed to development, to require a broader approach which recognises that development continues into adulthood. Students will cover three theories, including Dweck's mindset theory which replaces Eisenberg's theory of moral development. The three theories have been selected to represent a suitable balance of the theoretical approaches which are accepted by a range of subject experts.

The topic of social influence has been rewritten to cover a more suitable balance of currently accepted approaches. While the requirement to study conformity and obedience has been retained, the two theories for this area of knowledge have been removed. This follows expert advice that social influence incorporates a very large number of relevant theories and is not appropriate for GCSE students to focus exclusively on theories of conformity. There is now a requirement to study collective behaviour, with an appropriate balance between social and dispositional factors.

Awarding organisations have made minor changes to the topic of neuropsychology to ensure suitable breadth at GCSE. The topic title has been expanded to reflect the detailed requirements, and the requirement to study biochemistry and neurotransmitters has been replaced by an introduction to neuropsychology. In addition, the topic of sleep and dreaming remains unchanged apart from the addition of activation synthesis theory, replacing restoration theory. Activation theory is a more recent theory, and is more suitable to study alongside Freud's theory of dreaming.

One of the debates specified in the requirement to study two debates in psychology, 'psychology as a science', has been replaced by 'reductionism/holism'. This change responds to concerns that psychology as a science would not be a suitable issue for debate in view of the professional consensus around the acceptance that psychology is a science. In comparison, 'reductionism/holism' is an issue which continues to attract substantive debate in the professional community.

While most respondents seemed happy with the research methods section, two minor issues were raised in the consultation. On the first point, awarding organisations, advised by experts, are clear that for ethical reasons it would not be appropriate for students to be required to carry out investigations at GCSE level. On the second, awarding organisations are clear that the content does require students to understand the validity and reliability of the data – for example the requirement to consider the reliability and validity of sampling methods – and have therefore not made changes to add this.

Design and technology AS and A level

We received 1239 responses on the suitability of the design and technology AS/A level subject content, of which 275 agreed the draft content was appropriate.

Is the revised AS and A level content in design and technology appropriate?	Total	Percent
Yes:	275	22%
No:	897	72%
Not Sure:	67	6%

Of the 1239 responses to this question, 1049 (85%) commented on the decision not to develop a separate food AS and A level, following the removal of food technology from the design and technology suite. These responses varied in terms of answering either 'yes or 'no' to the question.

The respondents who commented on the decision not to develop a separate food AS and A level made very similar arguments for maintaining a food-related AS and A level. The main comments made were that:

- the removal of food technology AS and A level would mean there is now no academic-based food route available at key stage 5
- the A level is needed to support students to progress to food-related courses in higher education, arguing that food-related vocational qualifications are not appropriate for progression to higher education, and that food related qualifications at key stage 5 encourage students to continue the subject to higher education by, alongside science A levels, adding breadth and the practical understanding of working with food
- the vocational offer is not adequate for progression to higher education food-related courses, as the qualifications (e.g. butchery and confectionary) are too specific and practical
- this will lead to a severe shortage of food teachers in a few years; and
- with the rise in obesity, there is a greater need for practitioners in health and dietetics, and that the A level provides students with preparation for degrees and then careers in this area.

Four respondents answered in relation to the GCSE rather than the A level.

55 (4.4%) respondents commented specifically on the detail of the design and technology AS and A level content. A few of these commented specifically on the content as well as

expressing concern at the lack of food AS and A level, but most focused just on the design and technology content itself.

Of the 55 responses, 21 agreed the content was appropriate, and 24 felt the content wasn't appropriate with the remainder unsure. However, of the 'no' responses, three felt the content was appropriate and gave positive text answers, but also commented that they disagreed with the removal of food A level.

Nine respondents explicitly wrote supporting the content; comments included that the content was excellent and is suitable for supporting students to progress to undergraduate study.

Four respondents wrote in support of the specialist pathways at AS and A level, as they felt this would ensure better progression to higher education. While three felt that more consideration needed to be given to the distinction between the three categories whilst acknowledging possible crossovers. Some respondents seemed to think that all three pathways were part of the core content that all students must take, and were therefore concerned about the breadth.

Three respondents felt the draft was lacking in 'academic' content, which may make it difficult for students to progress to higher education. Only one of these gave a detailed response on this issue, and felt that the missing elements to prepare for undergraduate study were, for example, early 21st century methodologies behind design thinking, user-centred design, and architectural and communication design.

Four respondents raised concerns around the 'fashion design and development' specialist area, feeling that it would not offer progression to purely textile-based courses (e.g. textile manufacture rather than fashion design). Although, one of these felt that the course provided would still enable pupils to progress to a variety of further and higher education courses. The respondents felt this would be limiting and suggested this section should be renamed 'textile design and development' or similar. However, three respondents commented to explicitly support the textile content specified.

Three respondents felt that the draft did not ensure good progression from the GCSE, with some suggestions that more was needed to build on GCSE content – for example, further critical evaluation of new and emerging technologies, and a continuation of 'contextual challenges' to place design development in a real-world context.

The remainder of the comments were very varied. For example one respondent commented that there needed to be more of a focus on manufacturing techniques, as well as the design process; and another respondent commented that in the engineering content, students should be able to create virtual products as their project outcome.

Government response on the design and technology AS and A level

Unlike other subjects in this consultation which have been led by awarding organisations, the department led on developing content for design and technology AS/A level, in line with the GCSE, and working closely with Higher Education representatives, subject experts, awarding organisations and Ofqual.

As many respondents to this consultation have not commented directly in relation to the proposed design and technology content, it has been difficult to gain a clear picture of responses. However, for those who have made written comments on the draft, these have been largely positive.

Of the specific comments made, we have made a number of changes to address these. Some respondents thought that all three pathways were part of the core content that all students must take, and were therefore concerned about the breadth. We have made changes to ensure that the content is clear that students can choose the route they take, and are not required to study all three. On the concerns regarding potential overlap between the routes, additional detail added to the fashion and textiles section (set out below), and to the design engineering route have ensured greater clarity between the routes.

We have added the requirement to study design theory, its history, and key figures in design – to address the concern raised that the qualification was lacking in some of the content that would provide progression to higher education.

In response to the comments on the title and content of the specialist fashion route, a number of additions have been made, one of which is to change the title to 'fashion and textiles' to enable a greater range of progression routes (for example textile manufacture). Greater detail has been added following discussion with key stakeholders and representatives from higher education institutes.

Changes have been made to set out in more detail the nature of the non-examined assessment task at AS level, to ensure differentiation between the AS and A level.

Additions including a greater emphasis on new and emerging technologies, and emphasising the importance of setting design within real-world contexts will ensure greater progression from the GCSE.

Food technology

Food technology was removed from the design and technology suite at AS and A level, in line with the changes made at GCSE. This decision was made on the advice of stakeholders, who have indicated that it did not fit comfortably within the subject, and especially now that the content has an increased focus on design. A number of

responses to the consultation, whilst commenting on the need for a food A level, agreed that food does not fit comfortably within design and technology.

In the consultation document we announced our decision not to develop a separate food A level, as we have at GCSE, for a number of reasons. There are already a number of high-quality vocational qualifications available post-16 in food-related subjects. Although many of these are industry specific, there are applied general qualifications that have a focus on food nutrition and food science, which have been endorsed by universities and have associated UCAS points.

A high proportion of universities offering food science and nutrition related courses are looking for students with science qualifications for entry to their courses – whilst some do view food technology as an acceptable entrance qualification, many either do not accept it or do not require it. This, coupled with the low numbers currently taking the subject, has helped to inform our decision.

Environmental science AS and A level

We received 75 responses on the suitability of the environmental science AS/A level subject content, of which 26 agreed the draft content was appropriate.

Is the revised AS/A level content in environmental science appropriate?	Total	Percent
Yes:	26	35%
No:	22	29%
Not Sure:	27	36%

Two respondents explicitly supported the changes commenting that they increased the rigour of the qualification. Three respondents welcomed the focus in the content on understanding human interactions with the environment which they felt was important in preparing students for higher education (HE) and encouraging sustainable lifestyles.

Four respondents also welcomed the inclusion and prescription of mathematical and scientific skills which, along with the name change to Environmental Science, they felt would support progression to HE and bring the subject into line with the other sciences. One respondent, however, felt that that it would be helpful for the content to distinguish between mathematics and statistics requirements so that these skills/knowledge are followed up appropriately in the assessment approaches and guidance.

Six respondents expressed concern that the content does not include practical skills/ activities to be directly assessed. This they felt was inconsistent with the approach taken in other science subjects, which have included an endorsement of students' practical abilities, and feared it could lead to environmental science being viewed as a less rigorous science subject. They were also concerned that this would be detrimental to students who would not be able to prove their competency in practical skills/activities.

Six respondents thought there were specific gaps or key areas of content missing. Two respondents thought it would be helpful to include more detail on practical skills/ activities and relevant apparatus to ensure consistency between exam boards and for different students, and two respondents felt that any practical activities should include fieldwork. Other comments included that the content was too focused on ecology and more geological content should be included; that the role of technology should be given greater emphasis; that it would be good to recognise the issue of restoration/ regeneration of sites following extraction of resources; that the section on mineral resources is strongly biased towards ore minerals; and that peat bogs should be included in the section on habitat conservation because of their importance in terms of carbon storage, flood prevention and biodiversity.

Government response on the environmental science AS and A level

In response to the main issue raised in the consultation, regarding including directly assessed practical skills in the content, the assessment of qualifications is the responsibility of Ofqual and their consultation response document will explain its decision on how the content will be assessed.

Awarding organisations have, however, made changes to the content to ensure practical activities are integrated into the subject knowledge and understanding so that students have the opportunity to develop and improve the required practical skills throughout the AS and A level course.

The content now states that students will still be expected to carry out a variety of investigative activities appropriate to the study of a range of environmental systems. It explicitly requires students at AS to carry out two days of fieldwork at AS and four days at A level (or at AS one day of fieldwork plus six lab-based activities, and at A level two days of fieldwork and twelve lab-based activities). The content also sets out the skills students should have first-hand experience of; for example at least three sampling methods at AS and six at A level.

Awarding organisations also made minor additions to strengthen the practical skills section; for example adding a new requirement to analyse and evaluate existing scientific knowledge. In response to comments in the consultation awarding organisations also added further detail to the instruments and equipment section of the content – for example requiring students to use apparatus/instruments to record quantitative measurements (for example temperature).

On the specific comments raised in the consultation, awarding organisations have made additions to the minerals section to include construction and industrial minerals, and have added site restoration to the ‘control of environmental effects of mineral exploitation’ section, and technologies to design new products and improve system effectiveness to the section on circular economy.

Awarding organisations have not added new content on peat bogs, as it is not clear that studying an additional ecosystem will further develop students’ abilities beyond the coverage of the ecosystems already included. They have also not added additional content on the importance of carbon stores, as this is covered under global climate change. Awarding organisations have also carefully considered the suggestion to distinguish between the mathematics and statistics requirements within the content. However, following review, it has been decided not to make further changes to ensure consistency with other sciences. The other specific suggestions made by individuals in the consultation were also considered by awarding organisations who decided they would not be appropriate for inclusion in the subject content.

History of Art AS and A level

We received 67 responses on the suitability of the history of art AS/A level subject content, of which 17 people agreed the draft content was appropriate.

Is the revised AS and A level content in history of art appropriate?	Total	Percent
Yes:	17	25%
No:	17	25%
Not Sure:	33	49%

Of those who responded 'no' or 'not sure' only 8 provided commentary to explain their response.

Three responses expressed concern that the minimum number of artists/works to be studied was too low, only one of these suggested an alternative minimum which was that at least three artists should be studied per period/movement.

Four respondents commented that amendments were needed to the date parameters of art historical periods/movements and questioned whether all periods/ movements listed were inclusive of all art forms and comparable in terms of volume of subject content. There was not strong agreement about what changes were needed. One respondent was concerned about the comparable size of the periods specified, commenting whether it was appropriate for the 20th century to be split into 10 areas of study while the 17th century is covered in one. Another respondent questioned whether 21st century work could be included.

Three respondents stated that they were keen that some kind of visual/photograph skills component is retained – as in the current qualification - and liked the requirement for students to respond to unseen images (i.e. ones that have not necessarily been studied prior to exam).

Four respondents explicitly stated they thought the content provided the right breadth and depth, and approved of the requirement for students to engage with critical texts.

Further minor amendments were suggested by three respondents. Two respondents suggested adding religion and economics respectively in paragraph four and five so that students understand the impact of religion and economics on art and artists alongside society, culture, technology and politics. Another suggested emphasising further in the

skills section the importance of clear communication and presentation, adapting and applying understanding to different contexts, and personal interpretation.

Government response on the history of art AS and A level

One of the key issues raised in the consultation was in relation to whether the minimum number of artists and works was too low. Awarding organisations have made a number of changes to the content so that students study a wide range of artists and art in each of the areas of study.

Awarding organisations have added a new requirement for students to know and understand how the work of influential artists typifies the key movement, period and types. They have amended the requirements for each area of study so that, as well as understanding in detail works from at least two/three artists, students also need to study additional works of art, including for period/movement studies understanding how the artists studied influenced or were influenced by the works of at least two other artists (and their works) from the period/movement. They have amended the requirement to ensure that students study at least two types of art for each period/movement and three for each theme studied. The total number of artists and works of art that students must study have also been amended to reflect these changes. These requirements for greater breadth will ensure that students have a fuller understanding of the art periods/movement and themes studied.

Awarding organisations have not made significant changes to the art historical periods/movements outlined in appendix one. Awarding organisations will ensure comparability across the periods/movements set out in the specification. Furthermore, the content is clear that the lists of periods and types in the annex are not exhaustive, and awarding organisations can include further types, periods and movements if they are of comparable breadth and depth. Awarding organisations have however, added Art Deco as a new movement/period – as this was felt to be a key omission, and made other minor amendments to ensure that all periods/movements can include two types of art.

Awarding organisations agreed with respondents that students should be required to respond to unseen images, and have added this requirement to the content. Awarding organisations felt that this requirement would encourage students to study works of art and artists beyond those required in specifications, and would be in line with other A levels such as English literature and music.

In response to the comment that religion and economics should be added to the list of factors influencing artists, awarding organisations felt that the current requirement (‘cultural, social, political and technological factors’) was broad enough to include these issues as appropriate to the period/movement or theme studied. They were also concerned that adding religion and economics as individual factors could require students to study these in periods where these issues were less relevant.

In response to the final suggestion, to further emphasise the importance of clear communication and presentation, awarding organisations felt this was already required in paragraph 20 and any further emphasis could be provided in specifications.

Music technology AS and A level

We received 89 responses on the suitability of the music technology AS/A level subject content, of which 33 people agreed the draft content was appropriate.

Is the revised GCSE content in music technology appropriate?	Total	Percent
Yes:	33	37%
No:	25	28%
Not Sure:	31	35%

30 respondents commented when responding to this question. Of those who responded 'not sure' or 'no', 16 provided comments.

Nine respondents explicitly commented that they supported the increased emphasis on theoretical, technical and scientific understanding in the content which was thought would increase the academic rigour of the subject and better prepare students for higher education and five respondents stated the content provided suitable demand and coverage of topics. Two respondents however thought there should be an even greater emphasis on the mathematics and technical content.

Two respondents thought that the changes, particularly the increased maths and technology content could make the subject a little too broad and demanding, and less accessible for students who either do not have strong levels of mathematical competency or did not have any prior knowledge/ background/ experience of the subject. Conversely another respondent while thinking the content was quite broad felt this was manageable.

Five respondents explicitly stated they supported the removal of the content which overlapped with AS and A level music as this created a rigorous subject with its own distinct knowledge and understanding. Two respondents also stated that they thought there was a good balance between theoretical and creative aspects of the course. However eleven respondents felt that there should be a greater focus on creative application and engaging practically in the course for example performing and composing.

Nine respondents thought there were specific gaps or key areas of content missing; four of these respondents wanted a greater emphasis on recording as both a technical and creative skill, while three wanted a greater emphasis on digital technology and modern production techniques. There was however no consensus on the other additional areas that needed to be included. For example the following are examples of suggested

additions each mentioned by one respondent: a specific module looking at signal flow; further detail on the range of equipment and tools; a more academic/detailed approach needed to sound, acoustic, analogue/digital signals; and additional content on synchronisation, working with picture, pre or post production techniques, and job role changes over the decades.

Government response on the music technology AS and A level

Whilst two respondents raised concerns that the increased mathematical content for this subject would make it difficult to access for those students without strong mathematical competency, the majority of respondents who commented supported the increased emphasis on theoretical, technical and scientific understanding in the content. Awarding organisations have reviewed the mathematical content and agree with many respondents who felt the changes would increase the academic rigour of the subject

On the issue of creative application and engaging practically in the course, awarding organisations have considered the comments raised and have amended content to strengthen and clarify references to creativity without creating overlap with Music, and to make clear that creativity is involved in and important to the subject. The assessment of qualifications, including the percentage of practical assessment, is the responsibility of Ofqual and their consultation response document will explain its decision on how the content will be assessed.

Awarding organisations have also carefully considered the individual comments that were raised on specific gaps in the content, and have made additions including to the lists of recording and production techniques and principles of sound and audio technology, where stakeholders had highlighted omissions they felt were important to include. A small number of other minor changes have also been made to clarify content requirements and reflect stakeholders' suggested changes. Other specific amendments suggested by stakeholders were not considered by awarding organisations as appropriate for the subject content; for example there was concern that naming very specific technology and equipment to be used/understood in the subject content could make the content and specifications date quickly and might cause problems for schools that did not have access to everything specified.

Philosophy AS and A level

We received 79 responses on the suitability of the philosophy AS and A level subject content, of which nineteen agreed the draft content was appropriate.

Is the revised AS/A level content in philosophy appropriate?	Total	Percent
Yes:	19	26%
No:	26	31%
Not Sure:	34	43%

Of those who provided comments (16 respondents), four respondents stated that they thought the content was appropriate for AS and A level and three respondents questioned whether there a general need for this qualification.

The main concern raised by nine respondents was that there was too much overlap with religious studies AS and A level. They argued that this would make it too easy for someone to study both religious studies and philosophy without putting in extra work.

Six respondents were concerned at the loss of optionality with one respondent suggesting that students should be able to select two topics to allow for more in-depth study. Six respondents were keen to see political philosophy reinstated as an option, which they regarded as more engaging and interesting to students.

Six respondents thought that the content was too difficult and two specifically mentioned that it resembled content more appropriate to first year university course, with one respondent commenting that students would not be able to read all of the texts both because of length and their accessibility. Three respondents thought there were too many texts. Two respondents thought there was too much focus on it just being a test of memory and not enough on students actively participating and doing their own research.

Eight respondents made suggestions for amendments to the content. For example one respondent suggested that students should not just be taught that there are three main forms of Utilitarianism. Another thought there should be some clarification around reliabilism.

Government response on the philosophy AS and A level

Awarding organisations have carefully considered the responses particularly in relation to the potential for overlap with similar subjects and considerations for optionality and the inclusion of political philosophy.

Addressing the main concern raised which was any possible overlap with religious studies (RS) AS and A level, awarding organisations are clear that the philosophy AS and A level have a very different purpose from qualifications in religious studies. In developing the content for consultation, awarding organisations were always clear that there should be minimal overlap with RS. For example, in AS and A level philosophy students do not study the God/Gods of particular religious traditions, the section in the content on the Metaphysics of God is concerned with the concept of God within classical theism and not with the particular understanding of God/gods/ultimate reality within any particular religious tradition (which is the focus for AS/A level RS, as set out in the subject content). Where there are similarities, the skills used when students engage in the content are very different when compared to RS. The study of philosophy is concerned with conceptual coherence of any being having a particular set of attributes (who we call God); the validity/soundness of arguments relating to a being having that set of attributes and the meaningfulness of the language which is used to articulate those conceptions and arguments. It does not require students to analyse the arguments as a way of providing a rational foundation for religious belief. Finally, the study of the metaphysics of God is a central part of philosophy and therefore should be included in the content. Awarding organisations have considered any overlaps or perceived overlaps in detail and believe that the extent and nature of overlap (particularly when concerned with an appropriate level of demand) is suitable.

Although some respondents raised the possibility of having optionality within the AS and A level particularly with regard to including a political philosophy strand, no stakeholders believed that political philosophy should be compulsory. Awarding organisations were concerned about ensuring the validity and reliability of assessments for optional content and did not plan to develop specifications which would include political philosophy content. Furthermore, the content cannot feasibly cover the wide range of topics represented across this discipline. Given this they decided it would not be appropriate to develop content for additional options including political philosophy.

In order to ensure that AS students have a more representative exposure to philosophy, awarding organisations made changes at the suggestion of the British Philosophy Association (BPA) that moral philosophy should be offered at AS and the metaphysics of God at A level.

Awarding organisations do not agree with respondents who said that the content is too demanding. They believe that the content is appropriate for AS and A level philosophy; it

will ensure that the study of philosophy in schools and colleges requires students to develop the skills, knowledge and understanding that will prepare them for further undergraduate study of philosophy. To address some minor concerns that the inclusion of all the texts listed were too demanding we will amend the wording of the content to ensure that awarding organisations, in developing specifications, should be clear where it is necessary to read whole texts or excerpts.

Awarding organisations agreed with respondents that the philosophy reading list should be more inclusive, asked the BPA to review the list and have added several female philosophers/texts to reflect this diversity. The texts themselves are not exclusive and the awarding organisations can use their specifications to include a range of philosophers both traditional and contemporary.

Next steps

Awarding Organisations will now begin the process to develop specifications in these subjects, ready to submit to Ofqual for accreditation and to enable schools to prepare for first teaching in 2017.

Annex: list of respondents to the consultation

Abraham Moss Community School
Acady School
Acuity Education
Adeyfield School
Admiral Lord Nelson School
Alcester Grammar School
Alderbrook School
Alderley Edge School for Girls
All Saints Catholic Academy
All Saints Educational Trust
All Saints RC School Mansfield
Altrincham College of Arts
Ansford Academy
AQA
Archbishop Blanch School
Archbishop Tenison's CE High school
Arnold Hill Academy
Association for Nutrition
Association of Art Historians
Association of School and College Leaders
Attleborough Academy Norfolk
Avonbourne college
Axe Valley Community College
Badminton School
Bakkavor
Balcarras School
Bath Spa University
Batley Grammar school
BDA Obesity Group
Beauchamp College
Beaufort Co-operative Academy
Beaumont Leys school
Bedlingtonshire Community High School
Beechen Cliff School
Beechwood Sacred Heart School
Belper School
Belvoir High School
Benton Park School
Bethany School
Birkdale School
Blatchington Mill School and Sixth Form
Board of Deputies of British Jews
County Upper School
Cowes Enterprise College
Bourne Grammar School
Boston High School
Bradford Girls Grammar School
Bradley Stoke Community School
Brentwood School
British Nutrition Foundation
British Philosophical Association
British Psychological Society
British School Al Khubairat
Brockenhurst College
Bryn Hafren Comprehensive
BSAK
BSN
Buckinghamshire County Council
Bulwell Academy
Cambridge International School
Canford School
Cantell School
Carshalton High School for Girls
Castell Alun High School
Catholic Education Service
Central Lancaster High School
Chancellors School
Charlton School, Telford
Charters School
Cheadle Hulme School
Cheam High School
Cheshunt School
Chetham’s School of Music
Chichester High School for Girls
Chipping Campden School
Churchill Community College
Claremont Fan Court School
Clifton College
College of Richard Collyer
Comberton Village College
Coombeshead Academy
Cooper School Bicester Oxon
Copleston High School
Corbridge Middle School
Cornwall Council
Coundon Court
Cracking Good Food
Crawshaw Academy

Creative Skillset
CrOwn Hills Community College
Dane Court Grammar School
Darlington School of Maths and Science
Dartford Grammar School for Girls
Dawlish Community College
De Warenne Academy
Derbt College
Derby High School
Desborough College
Design Council
DHFS
Dormston School
Dorothy Stringer School
Dowdales School
Dronfield Henry Fanshawe school
Duchess's High School
Dyson Perrins CE Academy
Earls High School, Halesowen
Earth Science Teachers' Association
Eastbury Comprehensive School
Eastlea Community School
EBEA
Edgbaston High School
Edge Hill University
Education for Engineering
EGS
English Martyrs School
Eton School
Fairfield High School, Peterchurch, Herefordshire
Falmouth School
Farnham Heath End School
Field Studies Council
Firth Park Academy
Flintshire County Council
Flixton Girls School
Food Teachers Centre
Forest School
Francis Holland School
Fulford School
Gable Hall School
George Abbot School
Godolphin School
Golden Hillock School
Gosforth Academy
Grasp Business Development Ltd
Greencore
Grove Academy
Guildford High School
Guiseley School
Gumley House Convent School
Hall Mead School
Harper Adams University
Harris Academy Bromley
Harris Academy Chafford Hundred
Hartismere School
Hasland Hall School
Hasmonean High School
Hatch End High School
Hathaway Academy
Haughton Academy
Haybridge High School
Haybridge High School & 6th Form
Headington School
Health Equalities Group
Helsby High School
High Peak School
Highfields School
Hills Road Sixth Form College
Hind Leys College
Hindley High School
Hitchin Boys School
Hitchin Girls School
Holly Hall Academy
Holy Cross School
HSFC
HSLC
Huntington School
Incorporated Society of Musicians
Independent Schools Council
Institute of Education
Institute of Food Science and Technology
International Institute of Business Analysis
Irlam and Cadishead College
James Allen’s Girls’ School
Jo Richardson Community School
John Summers High School
Kennet school
King Edwards School Witley
King Henry VIII school
Kingdown School
King's High School

Kings International College
Kings School Peterborough
Kinrade
Ladybridge High School
Langley Park School for Girls
Launceston College
Lea Manor High School, Luton
Leeds Beckett University
Leeds City Council
Leeds University
Les Quennevais School, Jersey
Lewes Old Grammar School
Lingfield School
Little Heath School
Lodge Park Academy
London Metropolitan University
Lord Williams's School
Loreto High School
Loughborough High School
Luton Sixth Form College
Lutterworth High School
Magdalen College School
Malmesbury School
Manchester Communication Academy
Maricourt High School
Mary Webb School and Science College
Meadow Park School
Mid Cheshire Hospital NHS Trust
Morriston Comprehensive
Music Mark
Nailsea School
National Association for Music in Higher Education
National Federation of Women's Institutes
Neale Wade Academy
Netherwood Advanced Learning Centre
Newark Academy
Newton Abbot College
Nidderdale High Shool
Nonsuch High School for Girls
North Bromsgrove High School
North Bromsgrove High School
Northgate High School
Northwood College
Nottingham High School
Nova Hreod Academy
Nunthorpe Academy
Oakbank Secondary Free School
Oaklands Catholic School
OCR
Okehampton College
Open Futures
Orchards Academy
Oriel High School
Ormiston Sir Stanley Matthews Academy
Ounsdale High School
Our Lady Queen of Peace
Our Lady's Abingdon
Our Lady's Catholic College
Ousedale School
Outwood Academy Valley
Park House Scool
Parkside School Cullingworth
Parmiter's School
Parrenthorn High School
Pearson
Pershore High School
Petroc College
Philip Morant School
Philips High School, Bury
Pipers Corner School
Pleckgate High School
Poole Grammar School
Poole High School
Porthcawl Comprehensive
Prince Henry's Grammar School Otley
Prior Park College
Prior's Field School
Priory School
Pub is the Hub
Queen Elizabeth High School
Queens' School
Queensferry Community High
Queensmead School
Read School
Redcar Academy
Redland Green School & North Bristol Post 16 Centre
Repton School
Ribston Hall High School
Richard Challoner School
Richard Hale School

Ridgewood High School
Ridgwell Press
Ringwood School
Ripon Centre Women's Institute
Rivington & Blackrod High School
Rodillian Academy
Roll Masonic School for Girls
Rosebery School
Royal Astronomical Society
Royal Economic Society
Royal High School Bath GDST
Royal Masonic School for Girls
Royal Observatory, Greenwich
Royal Society of Biology
Ruskin High School
Ryde School
Rye St Antony School
Sacred Heart College
Sacred Heart of Mary Girls' School
Saint Benedict Catholic Voluntary Academy
Sandbach School
Save Food tech
School Food Trust
Service Sound Ltd.
Sharnbrook Upper School
Shrewsbury Sixth Form College
SHSSFC
Sir George Monoux College
Sir Henry Floyd Grammar School
South Hunsley School
South Wilts Grammar School
Spalding High School
SSFC
St Aidan's High School
St Albans Girls' School
St Anne's Catholic school
St Anthonys Girls Catholic Academy
St Bedes
St Benedict CVA
St Bernadette Catholic Secondary School
St Christopher's CE High School
St Clement Danes School
St Cyres School
St Edward's School, Cheltenham
St Francis' College
St George's Church of England Foundation School
St Ivo school
St Joseph's College
St Mary's School
St Paul's School
St Philomena's School
St Thomas More Catholic School
St Wilfrids Catholic High School
St. Augustine's Priory
St. Peter's High School
St. Wilfrid's School, Exeter
STAC school
Staffordshire County Council
Star Learner
STM Denton
Stockport Grammar School
Stroud High School
Stuart Langworthy Training
Sutton Community Academy
Sutton SCITT
Swanwick Hall School
Tanfield School
Tapton school
Tasker Milward VC School
Teesside High School
Tendring Technology College
Tesco
Textile Teachers Skills Academy
The Abbey school
The Astley Cooper School
The Beauchamp College
The Becket School
The Bridge Academy Hackney
The Broxbourne School
The Cooper School
The Cooperative Academy of Leeds
The Cotswold School
The Design and Technology Association
The Elmgreen School
The Farnborough Academy
The Heath School
The James Hornsby School
The John Hery Newman School
The King John School
The King's School Canterbury

The Kingsway School
The Knole Academy
The Long Eaton School
The Making Project
The Marthew Arnold School
The Maynard School
The Samworth Enterprise Academy
The Sutton Academy
The Taunton Academy
The Textile Institute
The Warren School
The Whitby High School, Ellesmere Port
Thomas Adams School
Thomas Deacon Academy
Thomas Hardye School, Dorchester
Thurston Community College
Tiverton High School
Townley Grammar School
Townsend School
Tring School
Trinity High School
Tytherington School
Uckfield Community Technology College
UK Groundwater Forum
United Kingdom Minerals Forum
University of Nottingham
University of Roehampton
University of Surrey
Valentine's high school
Victoria College
Wakefield Girls High School
Walbottle Campus
Wales High School
Wallingford School
Walton High
Wapping High school
Warden Park Academy
Weald of Kent Grammar School
Welland Park Academy
Wellington School
Westhaven School
Wexham School
WGSG
Whitefield School
Wigston College
Wilmington Grammar School for Girls
Winchester College
Wisbech grammar school
Witchford VC
WJEC
Wodensborough Ormiston Academy
Wolgarston High School
Wootton Academy
Wootton Upper School
York St John University

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Reference: DFE-00317-2015

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