Department for Education

Consultation Response Form

Consultation closing date: 16 April 2013
Your comments must reach us by that date.

Reform of the National Curriculum in England

Consultation Response Form

THIS FORM IS NOT INTERACTIVE. If you wish to respond electronically please use the online response facility available on the Department for Education e-consultation website (http://www.education.gov.uk/consultations).

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes, primarily the Freedom of Information Act 2000 and the Data Protection Act 1998.

If you want all, or any part, of your response to be treated as confidential, please explain why you consider it to be confidential.

If a request for disclosure of the information you have provided is received, your explanation about why you consider it to be confidential will be taken into account, but no assurance can be given that confidentiality can be maintained. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

The Department will process your personal data (name and address and any other identifying material) in accordance with the Data Protection Act 1998, and in the majority of circumstances, this will mean that your personal data will not be disclosed to third parties.

Please tick if you want us to keep your response confidential. ☐

Reason for confidentiality:

Name	Susan Kay Executive Director
Organisation (if applicable)	Engineering Professors' Council (EPC)
Address:	PO Box 789 Godalming GU7 9FW

If your enquiry is related to the DfE e-consultation website or the consultation process in general, you can contact the Public Communications Unit by e-mail:

consultation.unit@education.gsi.gov.uk or by telephone: 0370 000 2288 or via the Department's 'Contact Us' page.

Please tick one category that best describes you as a respondent

[ ] Primary School	[ ] Secondary School	[ ] Special School
[ ] Organisation representing school teachers	[ ] Subject Association	[ ] Parent
[ ] Young Person	[X] Higher Education	[ ] Further Education
[ ] Academy	[ ] Employer/Business Sector	[ ] Local Authority
[ ] Teacher	[ ] Other	

The Engineering Professors' Council (EPC) exists to promote excellence in engineering in higher education.

We are a unique network of academics: all branches of engineering are represented within the membership: Aeronautical, Civil, Chemical, Electrical, Electronic, Manufacturing and Mechanical Engineering, as well as Minerals, Metallurgy and Marine Engineering and the broad areas of General engineering studies and those in which engineering is combined with a range of other topics. There are currently 78 institutional members encompassing nearly 6,000 academic staff (permanent FTE).

Together with other subject groups within higher education, we have an important stake in pre-university education to ensure that learners are equipped with the knowledge, skills and enthusiasm required to continue into higher education. However, our comments in this response are not restricted to the high-flyers but apply to the educational development of all learners regardless of ability. The subject areas to which we are responding here are mathematics, computing and design & technology as these are of special concern to EPC.

Are you answering this consultation in response to particular subjects? Please tick all those that apply.

[ ] English	[X] mathematics	[ ] science
[ ] art & design	[ ] citizenship	[X] computing
[X] design & technology	[ ] geography	[ ] history
[ ] languages	[ ] music	[ ] physical education
[ ] Not applicable		

1 **Do you have any comments on the proposed aims for the National Curriculum as a whole as set out in the framework document?**

Comments:

The proposed aims are far too narrow in that they are restricted to the acquisition of knowledge without the skills to use it. The aims should be expanded to include the development of skills to critically evaluate and analyse information and the skills to apply their acquired knowledge.

The National Curriculum should do more than *"engender an appreciation of human creativity"* by developing the abilities to contribute to human creativity.

2 **Do you agree that instead of detailed subject-level aims we should free teachers to shape their own curriculum aims based on the content in the programmes of study?**

☐ Agree	☒ Disagree	☐ Not sure

Comments:

Specific subject-level aims for each subject area should be provided to make clear to teachers and other interested parties the rationale behind the content specification. Indeed, it is difficult to understand how the programme content could be defined without having a set of target aims to achieve.

Properly constituted, these aims would not stifle the freedom of teachers to deliver the curriculum using methods best suited to the needs of their learners; rather the aims should help to encourage novel educational approaches where appropriate.

3 **Do you have any comments on the content set out in the draft programmes of study?**

Comments:

Computing:

Generally, we welcome this programme of study. It is a great improvement on the current ICT curriculum. That it was developed in an open manner with consultation with the computing and engineering community is apparent in the quality of the draft curriculum.

One reservation that we do have is that it does not cover embedded systems and real-time computing. (Embedded systems are computers hidden inside everyday objects from washing machines to aircraft, robots and mobile phones.) This used to be covered in the Design and Technology curriculum and still could be so. Indeed, the ubiquitous nature of embedded systems is such that we recommend that it would be best located within D&T. However, there is no reason why the real-time programming of embedded systems should not be an exciting part of the Computing curriculum also. It should definitely go somewhere.

Design and Technology (D&T):

Sadly, the draft programme of study for D&T is grossly unsatisfactory and should be completely rewritten. In comparison with the current D&T curriculum, it represents a retrograde step with the academic content and aspirational challenge virtually eliminated.

We endorse the detailed recommendations made by Education for Engineering (E4E) in their report, *"New Principles for Design & Technology in the National Curriculum"* and in the proposals made by the Design & Technology Association. Consequently we do not repeat them here. However, we highlight some of the major concerns that EPC has with the draft programme of study:

- It downgrades D&T to a set of non-intellectual craft-based life skills. It should be a whole lot more than that, providing an academic as well as a practical challenge.
- It places an emphasis on maintenance and repair over innovate, design, build and test. Partially due to the health and safety issues around the repair of electrical apparatus and motor vehicles, this is likely to end up as a set of routine and uninspiring tasks. Greater emphasis should be placed on the creative aspects of design, tempered by the constraints of the physical world and the marketplace.
- It does not provide an adequate foundation facilitating progression to the study of engineering at Key Stage 4. The D&T programme of study at Key Stage 3 should be developed in the light of the needs of the D&T GCSEs and the engineering GCSEs currently being developed. If this results in a delay in the introduction of the new programme of study then so be it. It is important to get the curriculum right rather than rush through a poorly designed curriculum unfit for purpose.
- D&T is a subject which challenges the learner to develop solutions to real-life problems for which there is no one right answer. This should be included in the subject aims and embedded in the programme of study.
- D&T tends to be the window through which learners up to Key Stage 3, view the world of engineering. The draft proposals present it as an undemanding craft-based subject with no links to mathematics, English or science. It should be presenting technology and engineering as an exciting and intellectually challenging academic subject to learners in their formative years.

We strongly, recommend that, in the required major revision of this programme of study, the D&T Association and the Royal Academy for Engineering are closely involved.

Mathematics:

We endorse the detailed recommendations made in the response from Mathematics in Education and Industry (MEI) and consequently do not repeat them here.

4 **Does the content set out in the draft programmes of study represent a sufficiently ambitious level of challenge for pupils at each key stage?**

☐	Sufficiently ambitious	☒	Not sufficiently ambitious	☐	Not sure

Comments:

Our response to this question depends upon the subject area.

Computing:

The draft programme of study for computing is ambitious. Considerable professional development for those teaching the new curriculum will be required to realise its potential.

Design and Technology (D&T):

This draft programme of study is not at all ambitious. It presents very little academic challenge. Vagueness in the content description means that even the challenge of developing practical skills is lacking.

Mathematics:

Perhaps more than in any other subject, there is a very wide range of ability among learners studying mathematics. Consequently, there is a real danger that one set of targets would not be sufficiently ambitious for some learners and wildly over ambitious for others. For the less mathematically able students it is important that they grasp the basics rather than have a poor grasp of more advanced mathematical concepts. On the other hand, challenge must be maintained to retain enthusiasm and interest for the more able. For this reason different levels of attainment target should be retained for mathematics, if not for all subjects. It is important to distinguish between mathematics and basic numeracy. Each should have their own separate attainment targets.

5 **Do you have any comments on the proposed wording of the attainment targets?**

Comments:

We can only assume that the attainment targets for each subject have yet to be developed.

In the draft programmes of study the repeated generic targets need to be replaced with specific attainment targets for each subject.

We advocate the retention of multiple levels of achievement, especially for mathematics.

6 **Do you agree that the draft programmes of study provide for effective progression between the key stages?**

☐ Agree	☒ Disagree	☐ Not sure

Comments:

This comment applies specifically to the **Design and Technology (D&T)** programme of study. We do not feel that the unambitious D&T curriculum provides sufficient progression through the stages. This is especially true at the transition between Key Stage 3 and GCSE study of engineering and technology subjects at Key Stage 4.

In contrast, the **Computing** programme of study provides a well thought through progression of skills and content.

7 **Do you agree that we should change the subject information and communication technology to computing, to reflect the content of the new programmes of study?**

☒ Agree	☐ Disagree	☐ Not sure

Comments:

We support the change which reflects the change in the nature of the programme of study.

8 **Does the new National Curriculum embody an expectation of higher standards for all children?**

☐ Yes	☒ No	☐ Not sure

Comments:

In brief:

- Enthusiastically Yes for **Computing**.
- Emphatically No for **Design and Technology (D&T)**; quite the opposite: the draft programme of study proposes a diminution of standards.

9 **What impact - either positive or negative - will our proposals have on the 'protected characteristic' groups?**

Comments:

Girls are progressively switched off from STEM subjects from Key Stage 3 onwards. We have not seen any attempt in these proposals to counter this lamentable state of affairs.

10 **To what extent will the new National Curriculum make clear to parents what their children should be learning at each stage of their education?**

Comments:

Plain but unambiguous language should be used throughout. Technical terms should be explained in a glossary for all STEM subjects as they are in the English programme of study. This would be of value to all stakeholders.

11 **What key factors will affect schools' ability to implement the new National Curriculum successfully from September 2014?**

Comments:

It is vitally important for a well-managed change in curricula that teaching staff are well prepared through relevant CPD and that resources are in place. Schools and colleges will require special support so as not to compromise the pupils' learning experience during the transition. If this cannot be guaranteed, then the changes should be delayed for a further year.

This is especially true for **Computing** where there is a step change in content and degree of challenge.

Given the amount of work required to make the **Design and Technology (D&T)** programme of study fit for purpose, great efforts will be required to make the new version ready for introduction in 2014. We urge the Department for Education to initiate dialogue with the relevant professional bodies and subject associations including the Design & Technology Association and the Royal Academy for Engineering without delay.

12 **Who is best placed to support schools and/or develop resources that schools will need to teach the new National Curriculum?**

Comments:

There are a number of well-known subject associations and professional bodies that could provide support and CPD. However, it is important that the Department must recognise that this development has a significant transitory cost and make provision accordingly.

13 **Do you agree that we should amend the legislation to disapply the National Curriculum programmes of study, attainment targets and statutory assessment arrangements, as set out in section 12 of the consultation document?**

☐ Agree	☐ Disagree	☒ Not sure

Comments:

14 **Do you have any other comments you would like to make about the proposals in this consultation?**

Comments:

15 **Please let us have your views on responding to this consultation (e.g. the number and type of questions, whether it was easy to find, understand, complete etc.)**

Comments:
Questions 4, 6 and 8 needed separate question boxes for each subject area that is being commented on by the respondent. Boxes which can be ticked by double clicking on them would be more convenient rather than the “un-tickable” boxes used.

Thank you for taking the time to let us have your views. We do not intend to acknowledge individual responses unless you place an 'X' in the box below.

Please acknowledge this reply [X]

E-mail address for acknowledgement: s.kay@epc.ac.uk

Here at the Department for Education we carry out our research on many different topics and consultations. As your views are valuable to us, would it be alright if we were to contact you again from time to time either for research or to send through consultation documents?

[X] Yes	[ ] No

All DfE public consultations are required to meet the Cabinet Office Principles on Consultation

The key Consultation Principles are:

- departments will follow a range of timescales rather than defaulting to a 12-week period, particularly where extensive engagement has occurred before

- departments will need to give more thought to how they engage with and consult with those who are affected
- consultation should be ‘digital by default', but other forms should be used where these are needed to reach the groups affected by a policy; and
- the principles of the Compact between government and the voluntary and community sector will continue to be respected.

Responses should be completed on-line or emailed to the relevant consultation email box. However, if you have any comments on how DfE consultations are conducted, please contact Carole Edge, DfE Consultation Coordinator, tel: 0370 000 2288 / email: carole.edge@education.gsi.gov.uk

Thank you for taking time to respond to this consultation.

Completed questionnaires and other responses should be sent to the address shown below by 16 April 2013

Send by post to:

Consultation Unit,
Area 1c,
Castle View House,
East Lane,
Runcorn,
Cheshire,
WA7 2GJ.

Send by e-mail to: NationalCurriculum.CONSULTATION@education.gsi.gov.uk