

# Changes to GCSEs in Science from 2006 – your questions answered

## Why is GCSE science changing?

Following the 14-19 green paper from the Government in 2003, the Qualifications and Curriculum Authority (QCA) was asked by the Department for Education and Skills (DfES) to revise the Key Stage 4 programme of study for science. The result will be a new range of science GCSEs from 2006, aiming to ensure that:

- pupils will be studying science that is relevant and up-to-date; and
- there is choice in the courses which pupils take to prepare them for different career routes post-16.

## Has the 14-19 White Paper changed this?

No – in fact it has strengthened science by providing an entitlement to all students to study two science GCSEs.

## What is the main change?

The new programme of study for science – i.e. what is legally required from science teachers at Key Stage 4 – sets out a smaller core of content that is relevant to all pupils, and specifies curriculum requirements for the equivalent of a single GCSE.

## Has a lot of the content of science GCSE been removed?

Although content has been removed from the programme of study, the specifications being developed by the awarding bodies will have an equal but different content to current qualifications. Some illustrative examples of these have been provided in the criteria that QCA sets out for science GCSEs and these are available on QCA's website. Awarding Bodies have to meet the criteria for GCSE qualifications before QCA can accredit them to the National Qualifications Framework. This common core of content on topics that must be covered has allowed awarding bodies to come up with more innovative approaches that will engage pupils.

## Does it mean most pupils will only take one single science GCSE?

No, the expectation that most pupils will study at least two GCSEs in science has been reinforced in the 14-19 White Paper and strengthened by an entitlement to do so. The sciences cannot be adequately taught to any Key Stage 4 pupil in less than two GCSEs i.e. 20% of curriculum time, particularly if pupils are considering further study in science. There are new science GCSE criteria which outline the content of a range of additional science subjects developed by the awarding bodies to provide the equivalent of double and triple awards in science.

## Will I be able to continue offering a double award qualification?

The idea is that the GCSE science (double award) qualification will be replaced by two single awards: GCSE science and GCSE additional science. These are intended to provide pupils with greater flexibility in their choice of science qualifications and will be separately graded. Although the double award qualification has not been prohibited by QCA, it is anticipated that the awarding bodies will discontinue it in favour of single awards from 2006 onwards.

## Have the changes to the programme of study been trialled?

A set of 3 GCSEs called 21st Century Science have been developed by the University of York Science Education Group and the Nuffield Curriculum Centre, in partnership with awarding body OCR. The pilot course started teaching in September 2003 and will continue until Summer 2006. QCA has carried out an interim evaluation of the first year, so that the experience can inform the current work of the awarding bodies. The report of this will be published on the QCA website. There are additional evaluations taking place of the whole course, which will be reported next year. Changes to other specifications to be offered from 2006 are not considered by QCA to be extensive enough to need piloting.

## Will I have to teach 21st Century Science then?

No, there are a variety of specifications on offer, some of which will look closer to what we have now than others.

## Will the needs of those progressing to A levels in the sciences still be met by these changes?

One of the main reasons for the change is to encourage more pupils to choose further science study post-16. Progression routes will be clearly indicated in each specification and it will be important that you are aware of the impacts on further opportunities and career choices of your pupils when you are thinking which specifications to offer.

### What about applied science courses?

There will be new GCSE Applied Science (Double Award) courses similar to the present courses. There will also be single award GCSEs with a choice of assessment weightings that allow for an Applied Science route and a traditional science route. These are intended to provide alternative progression routes post-16, e.g. to Advanced Vocational Certificates of Education and other vocationally-oriented level 2 or level 3 courses.

### What about Entry Level Science, or BTEC National qualifications in science – will they be changing?

All courses will have to cover the programme of study so courses will have to be revised for 2006. New Entry Level specifications were accredited towards the end of Autumn 2005.

### Are there changes to assessment?

Yes, it is hoped that your assessment burden should be decreased, and QCA have ensured that the awarding bodies offer a much greater range of assessment techniques. Some external assessments will consist of objective tests, others will be short-answer questions and some will be open-book assessments. Exams may be taken at the end of year 10, at the end of year 11, or at stages throughout the course. From 2006, there will be no requirement for a terminal, externally set assessment.

Internal assessments are also varied, examples including work-related reports, 'can-do' tasks, investigations, e-assessment and assessment of presentations. Summary information about each of the awarding body's assessment models can be found on the QCA specification summary webpage.

### What's happening now?

The awarding bodies had their specifications for the new GCSE science qualifications approved and accredited in Autumn 2005. Schools have received information and guidance from QCA and the awarding bodies regarding what is on offer from 2006 (check the QCA website [www.qca.org.uk/science](http://www.qca.org.uk/science) or the details on the ASE website if you have not seen documents such as "Science: Changes to the Curriculum from 2006 for Key Stage 4").

Schools have made decisions on the specifications that they will offer their Year 10s for September 2006 and are at the stage of implementing these changes by planning schemes of work, identifying resources and ensuring all relevant groups are suitably informed.

### What other forms of support are available?

Briefing events and CPD opportunities from the Secondary National Strategy, ASE, some regional Science Learning Centres and the awarding bodies may help in implementing your choices and developing a greater understanding of 'How Science Works'. An overview of such courses is on the ASE website. QCA have also set up a forum allowing you to raise questions and share ideas which can be accessed on line at [www.qca.org.uk/science/forum](http://www.qca.org.uk/science/forum) Other groups are identifying resources which support the new approaches and within the ASE some are looking at existing materials (such as Science UPD8 and SATIS) to see how these can be matched to the new specifications. Further details (including the electronic version of these FAQs) can be found at: [http://www.ase.org.uk/html/homepage/notes\\_news/new\\_gcse/gcse\\_info.php](http://www.ase.org.uk/html/homepage/notes_news/new_gcse/gcse_info.php)

### How can I find out more?

If you would like to receive more information when it is ready, or ask any questions, please email [mariannecutler@ase.org.uk](mailto:mariannecutler@ase.org.uk)

### Useful web links

Association for Science Education	<a href="http://www.ase.org.uk">www.ase.org.uk</a>
The Royal Society	<a href="http://www.royalsoc.ac.uk/education">www.royalsoc.ac.uk/education</a>
Institute of Physics	<a href="http://teachingphysics.iop.org/">http://teachingphysics.iop.org/</a>
Royal Society of Chemistry	<a href="http://www.rsc.org/lap/educatio/rsedhome.htm">http://www.rsc.org/lap/educatio/rsedhome.htm</a>
Institute of Biology	<a href="http://www.iob.org/">http://www.iob.org/</a>
<i>Educational bodies</i>	
Qualifications and Curriculum Authority	<a href="http://www.qca.org.uk/science">www.qca.org.uk/science</a>
21 <sup>st</sup> century science project	<a href="http://www.21stcenturyscience.org/home/">http://www.21stcenturyscience.org/home/</a>
OCR	<a href="http://www.ocr.org.uk">www.ocr.org.uk</a>
AQA	<a href="http://www.aqa.org.uk">http://www.aqa.org.uk</a>
Edexcel	<a href="http://www.edexcel.org.uk">http://www.edexcel.org.uk</a>
WJEC	<a href="http://www.wjec.org.uk">www.wjec.org.uk</a>
CCEA	<a href="http://www.ccea.org.uk">www.ccea.org.uk</a>