

## **SCORE position on the Science Diploma as of May 2008**

### **Summary statements**

1. SCORE strongly supports the Government's desire to improve the quality, reputation and impact of qualifications aimed at providing young people with the knowledge and skills relevant to the science-based workplace.
2. The Science Diploma should be developed in consultation with the full range of subject specialists, industrial sectors and HEIs.
3. The Science Diploma differs significantly from the Diplomas in the first three phases and this will have an impact on the time needed to develop and pilot new content, and the timetable over which this work should proceed.
4. SCORE strongly recommends the Government extend the timetable for the introduction of the Science Diploma or designates the first two years of teaching (2011-2013) as a pilot.
5. The history of educational reform is not kind to qualifications variously perceived as 'vocational,' 'applied' or 'work-related'. If the development of the Science Diploma does not take account of the lessons from history, mistakes are bound to be repeated, and the qualification destined to be unpopular or of low status.
6. It is extremely ambitious to envisage a single qualification straddling such a wide range of students as is envisaged for the Phase 4 Diplomas. This mitigates against the success of the Science Diploma, particularly at level 3.
7. If the Government is prepared to give adequate development time, to invest generously in supporting teachers and to communicate honestly with stakeholders about purpose and intent, the Science Diploma could add value to 14-19 education for young people.

**SCORE strongly supports the Government's desire to improve the quality, reputation and impact of qualifications aimed at providing young people with the knowledge and skills relevant to the science-based workplace.**

In its 2008 survey the CBI found that 59% of employers said they were having difficulty recruiting STEM-skilled individuals, with both technicians and graduates in short supply. The survey also revealed that many different sectors valued STEM skills, including financial, management and service sectors. At the same time, the appetite for applied science in schools is increasing. Since its introduction in 2002 the total number of entries in GCSE double award applied science has risen rapidly from 8,619 entries in 2004 to 29,594 entries in 2007. Providing a more engaging, relevant and possibly direct route through 14-19 education for young people interested in working in jobs where scientific skills are valued is of paramount importance, and at no point should that route be seen as being of any less value to the individual or the economy compared to any other.

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The Government's 14-19 Expert Advisory Group has recommended that the Science Diploma Development Partnership will have up to 19 members drawn from a variety of backgrounds. SCORE supports this recommendation and calls explicitly for experts in biology, physics and chemistry to be represented on the Diploma Development Partnership and consulted throughout the Diploma development process. It is not surprising that there are many different views among stakeholders on what the Science Diploma is, and could be. As its purpose becomes clearer, some sectors and organisations will have a larger part to play in the development of the Science Diploma than others.

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The Government's decision to retain, at least for the time being, GCSEs and A levels and to develop the first three phases of diplomas in explicitly occupational sectors of the economy made the October 2007 announcement of Diplomas in Science, Languages and Humanities a surprise to many. These 'Phase 4 diplomas' do not have such a direct link to one sector of the economy as their predecessors nor do they have such a strong history of industry-linked qualifications on which to draw. It might therefore be expected that the development of the Phase 4 diplomas would need more time, more teacher and lecturer support and a more consistent communication strategy in order to ensure success. Unlike the other Diplomas, science is a high status core subject at 14-16 with a long-established history in the 14-19 curriculum. It is of course possible that some HEIs will see the Science Diploma as creating a new market for undergraduates and develop new degree courses accordingly. It is debatable as to whether this is a desirable outcome for the Science Diploma.

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The entire secondary science curriculum is currently undergoing major changes, with new programmes of study at Key Stage 3 and 4, and revisions to A levels. It is possible that these changes, which have been broadly supported by the science community, will bring about some of the benefits that the Government envisages for a Science Diploma, particularly if allowed to bed down properly. During its development phase, the Science Diploma will face direct competition from well-known and generally respected qualifications, notably GCSEs and A levels. In delaying the 2008 review of A levels to

2013, and introducing the Science Diploma in 2011 leading to an entitlement for all 16-18 year olds in 2013, the Government has prevented the Science Diploma from having the chance to prove itself in the eyes of young people and parents before choices have to be made. SCORE therefore recommends that either the timetable for introducing the Science Diploma is extended to enable development to proceed based on the evaluation of recent curriculum change, or the first two years of teaching the Science Diploma from 2011 to 2013 constitute a pilot phase and are rigorously evaluated in order for the results to be considered alongside the review of A levels.

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In March 2008, the DCSF set out its strategy for 14-19 qualifications in the document *Promoting Achievement, Valuing Success: A Strategy for 14-19 qualifications* and stated that "as Diplomas become a national entitlement, public funding should be directed to just four routes: the general (GCSEs and A levels), the new Diplomas, Apprenticeships and the Foundation Learning Tier". This clear statement of separation between traditional qualifications and the Diplomas creates a significant risk that the Science Diploma will be seen as a course for 'less able' students. History shows that once such a perception takes hold, it becomes entrenched, as long as alternative courses exist with which it can be compared.

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The extent to which the science community can help shape and support the Science Diploma depends very much on the Diploma's purpose and relationship to existing qualifications and on the extent to which it functions as a loose envelope within which certain existing qualifications can sit. The idea of the Diploma as an overarching framework was convincingly articulated in the 2004 Tomlinson report which recommended the dissolution of existing, traditional qualifications to make way for a new and more coherent system of 14-19 qualifications. At the time of that report the science community broadly supported these recommendations so long as science remained central to 14-19 education.

The Advanced and Extended Diplomas are not the only innovations in the field of university-entry qualifications, and as yet appear to offer little advantage over A levels in this regard without a burden of time and resource that many young people and teachers will struggle to manage. The requirement for 50% of the Principal Learning to be 'applied' presents many challenges whether the Science Diploma is to progress students to university or the workplace. These challenges can only be overcome with the involvement

and support of the science community, including the full range of HEIs and employers. While many employers welcome a Science Diploma in principle, it is possible that their support is based mainly on dissatisfaction with the current system rather than confidence in the advantages a Science Diploma would bring.

**If the Government is prepared to give adequate development time, to invest generously in supporting teachers and to communicate honestly with stakeholders about purpose and intent, the Science Diploma could add value to 14-19 education for young people.**

The structure of the Science Diploma does have the potential to address some longstanding concerns about the lack of certain skills and attributes in otherwise excellent 'three A level' students. This includes the inclusion of advanced level mathematics alongside the sciences for those considering studying a science at university, as well as the development of skills in independent problem-solving and the ability to work positively with others. If it can be made to work in practice, the Science Diploma could prove to be a better model of education for the 21<sup>st</sup> century than the existing offer, but the Government must be prepared to provide the time needed for development and the resource to be invested in science teachers. Otherwise stakeholders may see the ever-changing rhetoric associated with Diplomas as an indication of political expedience rather than educational necessity.

## **About SCORE**

SCORE is a partnership between the Association for Science Education, the Biosciences Federation, the Institute of Biology, the Institute of Physics, the Royal Society, the Royal Society of Chemistry and the Science Council. SCORE aims to improve science education in UK schools and colleges by harnessing the expertise, influence and resources of key independent organisations to support the development and implementation of effective education policy and projects.

SCORE's position on the science diploma is drawn from SCORE members' significant experience of curriculum development, and wide consultation among the science and education communities. This position will continue to evolve – see [www.score-education.org](http://www.score-education.org) for more information or e-mail [score@score-education.org](mailto:score@score-education.org).