SCORE
SCIENCE COMMUNITY REPRESENTING EDUCATION

Vision and purpose for the Science Diploma: SCORE's position as of July 2008 in response to SEMTA consultation

Summary

- At levels 1 and 2 the Science Diploma should aim principally to enrich the statutory curriculum and increase motivation among learners currently disengaging from science at 16. It should enable movement between levels and across different diplomas. At these levels, the Science Diploma should enable learners to keep their options open, providing a firm foundation for entry into other diplomas at level 3.
- At level 3 the Science Diploma should clearly diverge into two routes, one for learners likely to enter science-based employment or apprenticeships on completion of the diploma and the other for those likely to study a science/science-based degree in higher education. It should be a vehicle for improving the fit of qualifications to career aspirations and the second route should therefore improve post-19 progression into higher education science/science-based courses.
- The structure and content of the Science Diploma should be able to reflect the fast changing nature of science and technology. The Science Diploma has the potential to be a vehicle for developing, piloting and promoting new curricula, assessment and pedagogy, provided that the Government extends the timetable for the introduction of the Science Diploma or designates the first two years of teaching (2011-12 and 2012-13) as a pilot.

- The Science Diploma is most unlikely to succeed if it is promoted as a single progression route to all possible destinations.

Specifics

The vision needs to acknowledge and embrace the Science Diploma as an overarching qualification that encompasses two main progression routes and which will add value to existing qualifications and engage new groups of science learners. It also needs to reflect the fast changing nature of science and technology, and therefore the structure and content needs to be easy to update.

Levels 1 and 2

At levels 1 and 2 the Science Diploma should aim to enrich not reinvent the statutory (for 14-16 year-olds in maintained schools) National Curriculum and increase interest in science among learners, building on the current success of applied science routes at GCSE with their associated innovation in assessment, enabling success in functional skills, and catering to individual tastes through 'additional learning' options. Learners should enter the Science Diploma at levels 1 or 2 confident in the flexibility available to change diploma at the end of each level should they wish. It should also facilitate progression to the level 3 Science Diploma.

The Science Diploma for 14-16 year-olds at levels 1 and 2 is therefore about raising attainment and increasing engagement in science, thereby increasing participation in science post-16. New content being developed for the Science Diploma at levels 1 and 2 is likely to be aimed not at the categories of learners who currently attain highly and/or take triple science, but those who are currently being attracted into applied science GCSE or who have a strong science interest in a particular applied area and may find their way towards a level 3 diploma in engineering, construction, environment & land-based studies or other strongly science-related line of learning. Thus at these levels, the Science Diploma should be designed to enable learners to access a range of (related) future learning and career paths.

Level 3

At level 3 the Science Diploma should diverge into two clearly defined routes: (1) taking learners into employment or apprenticeships, and (2) taking learners into higher education.

(1) Development of the level 3 Science Diploma for learners aspiring to a particular science-related job or profession for which a degree is not appropriate (either for them as individuals or their potential employers) should focus on equipping learners with work-related skills, strong learning motivation and a career plan through the principal and generic learning strands, and is likely to be the choice of post-16 education providers who have good links with local employers in order to provide the work experience needed. It is likely to appeal to learners who currently take A level applied science or BTEC Nationals and/or those middle-attainers at GCSE science for whom science A levels (especially biology, chemistry, physics) are not particularly suitable, thereby increasing post-16 science participation in the maintained sector.

(2) Development of the level 3 Science Diploma for learners considering a science or science-related degree will add value to the current offering through such mechanisms as the promotion of AS or A level mathematics in the additional learning strand, the challenge of the extended project and the interpretation and delivery of 'work experience' through links with HE providers.

At level 3, the inclusion of level 3 mathematics will be of benefit to students on either route and SCORE therefore supports the recommendation of ACME on this issue.

Risk areas

- *Timescale* – at all three levels a significant amount of curriculum development and piloting will be needed in order to fulfil a challenging vision. If this development draws on lessons learnt from evaluations of existing curriculum offers and is strongly linked to the stated purposes of the different diploma levels and routes through level 3 given above, it should be possible to develop a Science Diploma that could add value to the current offer. SCORE remains of the view that the Government should extend the timetable for the introduction of the Science Diploma or designate the first two years of teaching (2011-12 and 2012-13) as a pilot.
- *Mission drift* – sticking too closely to the diploma templates established by the first three phases of the Diplomas could cause significant problems for the Science Diploma, in particular: the lack of clarity regarding the place of existing science GCSEs within the level 2 science Diploma; the difficulty in interpreting 'applied learning' and 'work experience' in the context of the routes for those intending to enter science or science-related degrees.
- *Breadth of purpose* – SCORE believes that it is extremely ambitious to envisage a single qualification straddling such a wide range of students as envisaged for the phase 4 diplomas. Any more than two routes through the level 3 Science Diploma will cause confusion, dilute impact and reduce confidence in the diploma.
- *Maintaining current supply* – the introduction of the Science Diploma should be carefully assessed for its potential to disrupt the supply of talented learners into STEM degrees. This depends a great deal on the future of A levels, but also on the deployment of specialist science teachers and other school and college resources.
- *Widening participation in science* – SCORE encourages level 3 learners who are not intending to pursue a STEM degree or career to keep their options open by including a STEM A level or other level 3 qualification. The Science Diploma, and indeed the phase 4 Diplomas more generally, should in no way limit these choices. Accordingly the opportunities to encourage participation in STEM in the 'additional learning' strand should form part of the phase 4 diploma development.
- *Strategic coherence* – the phase 4 diplomas have more in common with each other than with the diplomas in phases 1-3, and their development must proceed with significant co-ordination and coherence if they are to be meaningful and implementable by schools and colleges.