



Briefing Note – Future of GCSE Mathematics

Background – why two GCSEs?

Recommendation 4.2 of Professor Adrian Smith's 2004 report *Making Mathematics Count* proposed re-designating GCSE Mathematics as a double award. The thinking behind this recommendation was that the single GCSE did not:

- Appropriately reward for the level of difficulty and the amount of work that goes in to the subject;
- Generate excitement and enthusiasm for mathematics among talented students
- Effectively challenge those at the upper end of the ability range;
- Fairly reward those at the lower end;
- Meet the national mathematical skills needs of the nation;
- Effectively prepare students for Level 3.

The Path to a Second GCSE

Between 2004 and 2008, considerable time and money has been spent on attempts to find a model which would satisfy Recommendation 4.2. On occasions, this has proven to be very problematic, and has operated against a backdrop of shifting policy decisions, some of which have undermined progress in satisfying this critical recommendation.

Although Professor Smith's report recommended a double award, a ministerial decision was taken to create two separate GCSEs. Therefore, the discussion moved on to looking at alternative ways of creating a structure with two mathematics GCSEs which would address the same concerns as those raised by Professor Smith's report.

ACME's Pair of GCSEs

Since summer 2008, ACME has concentrated on developing a set of subject criteria for a pair of new mathematics GCSEs. Strict rules govern the creation of new qualifications. New qualifications have to be sufficiently distinct from existing qualifications in order to be accredited. However, the measure of 'distinctiveness' is not an exact science. Creation of a second GCSE for mathematics has found this hurdle particularly difficult to negotiate.

Nevertheless, by the autumn, ACME had developed a set of subject criteria for a pair of GCSEs. Our proposals are designed with the following points in mind:

- Emphasise the process used in applying mathematics in one of the GCSEs – can you engage with a problem (typically from real life) and work it out?
- And emphasise the process skills of reasoning in mathematics in the other qualification – can you express the solution of a problem (typically from mathematics) using accurate reasoning?
- The demarcation, however, is not exclusive as mathematics demands integration of appropriate skills;
- And the qualifications will have different, but overlapping content;
- Each GCSE is a worthwhile qualification in its own right;
- Neither of them should be regarded as a lesser qualification;
- Students who obtain both qualifications will be well equipped for further study at Level 3 or above.

How the Pair will Operate

It is the intention that mathematics will continue to be taught as a single subject, with two examinations. It is expected that by far the majority of students will sit both examinations, and with minimal additional content there will be little pressure on teaching nor the amount of space in the timetable. ACME believes this pair will address the concerns of the current single GCSE by:

- More appropriately rewarding the level of difficulty and the amount of work involved in the subject;
- Developing and assessing skills not at present adequately developed;
- More fairly reward those at the lower end of the ability range and more effectively challenge those at the upper end.
- Improving the mathematical skills base of young people in the UK;

Developments

After a strong and unified stance across the mathematics community led by ACME, Sarah McCarthy-Fry MP (Parliamentary Under-Secretary of State, DCSF) gave approval on 12 December 2008 for the pair of mathematics GCES to be piloted. ACME welcomed the decision but raised a number of questions over the roll-out.

FAQ

How will ACME's pair relate to the new single GCSE?

A new revised single GCSE in mathematics will be introduced from 2010, reflecting the new programme of study in Key Stage 4. The Minister has stated that no decision has yet been taken about which model will be adopted at the end of the piloting of the pair in 2015. ACME believes any model which gives schools the alternative of studying the pair will undermine the success of the pair. Moreover, we do not believe that a single GCSE will ever deliver students with as deep an understanding of mathematics and its processes as would studying the pair. We will be arguing strongly that only the pair should be retained beyond 2015.

What is the timetable for piloting and roll-out?

The current government timetable is for piloting to begin in 2010, with full roll out of the pair in 2015 at the latest, with first awards in 2017. ACME believes that this timescale is too protracted, and casts doubt over the government's commitment to the pair of GCSEs. Further effort is ongoing to provide evidence of alternative methods by which the piloting might be speeded up without damaging its integrity. In addition, ACME is currently working closely with QCA and will be represented on a GCSE Mathematics Pilot Steering Group.

Which GCSE is the gatekeeper qualification and how will the pair affect progression?

ACME believes that progression to Level 3 will be enhanced by having undertaken both GCSEs. It is our view that the majority of students will study both anyway.

How will attainment in functional skills relate to the pair of GCSEs?

The pair of GCSEs, if properly designed, could act as a better assessment of functionality in mathematics than the proposed functional skills qualification. This would negate the need for a separate functional skills qualification for schools. A bespoke functional skills qualification could then be created for post 16 learners.

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