

## Impact report – the introduction of Further Mathematics GCSE

### Overview

PPG funding was used to support the introduction of the AQA Level 2 Certificate in Further Mathematics for top-set students on a voluntary basis. 16 students chose to take the qualification in addition to their Mathematics GCSE in 2017. They achieved 2A, 11A\* and 3A<sup>^</sup> at Further, and the whole class achieved 17 grade 9s and 12 grade 8s in the new 9-1 GCSE.

### Rationale

I wanted to use the FM GCSE as a motivating enrichment option. I introduced it to the whole class at the start of Y10, and told them that most extension work in normal lessons would be from the FM course. They could therefore reach the end of their single maths course and be ready to sit both qualifications if they wanted. The Y11 mocks would be the decision point, so they did not have to commit to the course until then. Entry onto the course was not automatic but dependent on mock performance, and I believe this contributed to their excellent mock results.

### Teaching

Approximately two-thirds of the FM course content is already covered in the single maths course, although only if the students are working at grades 8 and 9. The remaining third was taught during after school sessions every Monday between March and May. There were also lunchtime sessions every Monday. It was not possible to fit the FM course into normal lessons because we were already under allocation to finish the single maths content. It is envisaged that in future years it could be possible to complete the entire Maths and FM courses within normal lessons, assuming that allocation continues to increase up to the recommendation.

### Impact

See Excel spreadsheet of results. Key points:

- Studying FM appeared to have a positive impact on single maths results for the whole class, even the students not taking FM. This is backed up by data and student feedback questionnaires.
- The class was the only one in Y11 with a positive residual against FFT for Maths. Their FFTs were already very high at twelve 9s and seventeen 8s. They actually achieved twelve 8s and seventeen 9s. The ones who took FM had a higher residual than the ones who did not. Average improvement from the mocks was 1.5 grades for this set, and again the FM students improved by slightly more than the non-FM.
- For extremely high-performing students, FM has been the “cherry on top”. For example, Holly Stevenson’s results are now “three 9s, seven A\*s and an A\* with distinction”. FM is the only subject where it is possible to achieve an A<sup>^</sup> grade.
- **Two of the 16 students were PPG. Both achieved a grade 9 in single maths and an A\* in FM.**

- There may be ongoing benefits in the 6<sup>th</sup> form. Our new Y12 FM cohort is the strongest I have ever taught, so it will be interesting to see their results in two years' time.

### Student feedback questionnaires

The questionnaire was completed in May 2017. The students who stayed at SHS then added to their answers in September. All 16 FM students said that the course had had a positive impact on their single maths GCSE. Comments included "FM has made single maths seem very easy" (most students said this), "I have now had double the practice on certain topics", "I have had extra practice of harder questions", "I have found easier and more efficient methods to use", "It has been good revision".

Students' reasons for choosing to take this qualification included "Standing out in a competitive market full of other students like me", "Improving my single maths grade", "It was interesting and fun", "To challenge myself", "To see if I wanted to do it for A level", "I felt as though I was coping easily with maths and wanted to do something that would set me apart", "So I could have an extra GCSE in case one goes wrong!", "I love maths".

All students intended to continue their study of mathematics in the 6<sup>th</sup> form, and 12 of the 16 planned to take Further Maths A level. Most students expressed gratitude and thanks for having the opportunity to take the qualification.

### Funding

PPG funding paid for textbooks, revision guides, workbooks, exam paper printing and photocopying. Of these, the textbooks, revision guides and printing can be re-used every year to offset the cost of future years. This means that future students can benefit from past funding, with the only new funding required being for workbooks and photocopying, making it a very cost-efficient subject. The grade profile is also expected to stay similarly high so it provides excellent value for money.

### Future

The introduction of FM has been extremely positive and well worth doing. Improvements that could still be made include:

- Teaching the entire course within maths lessons and not after school. This would require an increase in allocation, which has been promised.
- Giving a mock exam to students taking FM. This would not necessarily have to fit into the traditional January session, as the best time to sit a FM mock would be closer to Easter.