

Focus of the Month February 2017

Girls' participation in Advanced Mathematics

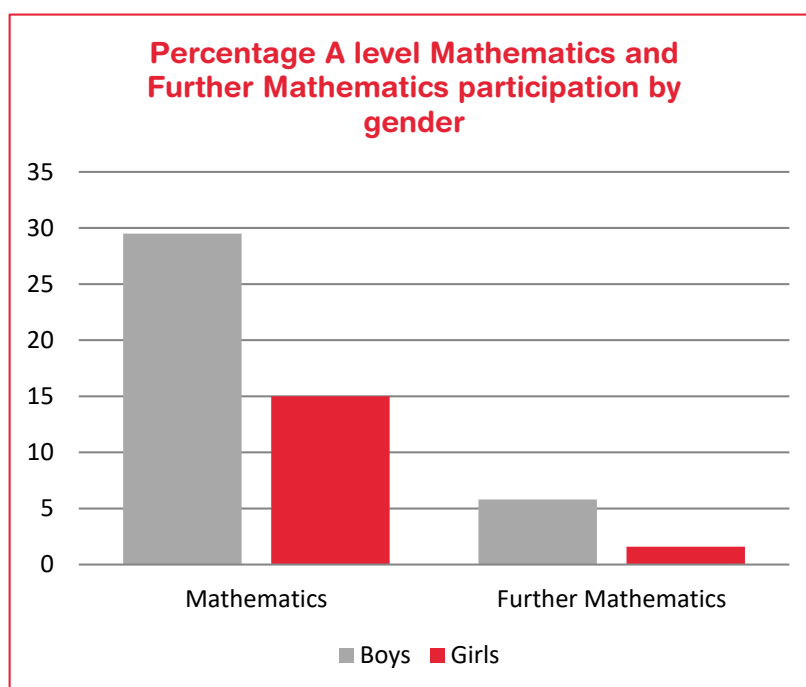
Our focus for this month is the information and guidance that the FMSP provides relating to girls' participation in AS/A level Mathematics and Further Mathematics. The FMSP believes that it is important to alert schools, colleges, girls and parents to the wide range of skills developed through the study of mathematics and the utility of the subject across a wide range of careers.

What is the current picture?

The number of girls studying mathematics has continued to rise in recent years, with a total of just under 36,000 girls in the UK completing a course in A level Mathematics in summer 2016, of which over 4,000 also completed A Level Further Mathematics. At AS level, there were 64,000 entries for Mathematics and almost 8,000 entries for Further Mathematics by girls.

The numbers of girls participating in Mathematics and Further Mathematics in the UK has grown substantially in recent years, the proportion of A level Mathematics students that are girls is 39% and for A level Further Mathematics the figure is 28%.

Data published by the Department for Education shows that in 2015/16, for state school students who had chosen to do A levels, 29.5% of boys took Mathematics, compared to only 15.0% of girls; for Further Mathematics the figures were 5.8% and 1.6% respectively. Using the data tables, schools and colleges can compare the proportion of girls participating in A levels in Mathematics and Further Mathematics with other institutions and against regional and national rates of participation.



What factors affect girls' participation in Advanced Mathematics?

The FMSP has been working with the UCL Institute of Education (IoE) to research the factors affecting girls' decision making relating to Advanced level Mathematics, resulting in the publication of two reports:

- [Gender literature review](#) - a report summarising the outcomes of previous research studies. This identifies a range of issues that affect girls' decision making, including: their enjoyment of mathematics; the effective use of role models; mathematical anxiety; and the importance of teacher encouragement and informal support.
- [Gender case studies](#) - a report summarising five case studies of schools and colleges with relatively high levels of girls' participation in A level Mathematics. Some of the key findings include: the importance of having a culture which encourages girls to aspire to continue with mathematics post-16; promoting mathematics as a subject with wide applicability; the importance of support by senior leadership in promoting mathematics; and families and teachers instilling a belief in girls that they can succeed in A level Mathematics / Further Mathematics.

Both of these reports are available via the [FMSP website](#).

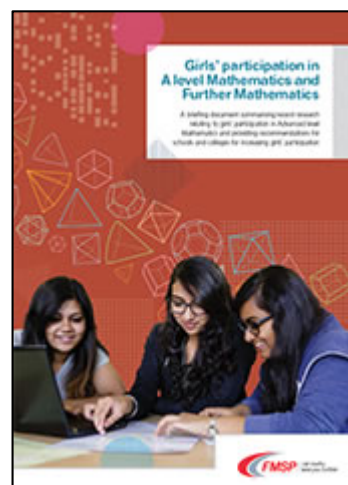
Promoting girls' participation in Advanced Mathematics

The FMSP has published the [Girls participation in A level Mathematics and Further Mathematics](#) briefing document, which was sent to all FMSP registered schools and colleges. The document summarises:

- the current picture relating to girls' participation
- the findings of the FMSP/IoE research
- recommended strategies for schools and colleges to promote greater gender balance in A level Mathematics

The FMSP has also developed resources to encourage girls to study A level Mathematics. These include:

- [teacher resources](#) for enrichment sessions which highlight applications of mathematics in a wide range of contexts, for example *Decision Trees*, which is designed to show how mathematical techniques can be used to make business and other decisions
- [Why Study Mathematics?](#) – A presentation and set of accompanying notes for teachers to use at open evenings and promotion events;
- [student resources](#) providing information on careers; profiles of female mathematics students; information about the mathematics in other subjects and society; and recommended reading and useful website links.



During 2016-17 the FMSP is working with a small number of schools to trial a range of strategies intended to increase girls' participation in A level Mathematics. The outcomes of these projects will be shared with all schools and colleges during the coming months.