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Mrs S Parker
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Dear Mrs Parker

Ofsted 2007-08 subject survey inspection programme: mathematics

Thank you for your hospitality and co-operation, and that of your staff, during my visit on 17 and 18 March 2008 to look at work in mathematics.

As outlined in our initial letter, as well as looking at key areas of the subject, the visit had a particular focus on the effectiveness of the school's approaches to improving the quality of teaching and learning in mathematics.

The visit provided valuable information which will contribute to our national evaluation and reporting. Published reports are likely to list the names of the contributing institutions but individual institutions will not be identified in the main text. All feedback letters will be published on the Ofsted website at the end of each half-term.

The evidence used to inform the judgements made included interviews with staff and students, scrutiny of relevant documentation, analysis of students' work and observation of eight lessons.

The overall effectiveness of the subject, mathematics, was judged to be good.

Achievement and standards

Achievement in mathematics is satisfactory. Standards are above average.

- Students arrive at the school with standards which are above average, overall. Although standards at GCSE and in National Curriculum tests are also above average, students' progress has varied in recent years. Girls, in particular, have made insufficient progress in Years 10 and 11. Progress has been affected by some turbulence in staffing and by early entry for GCSE, which resulted in too many giving up on mathematics in Year 11. Higher attaining students now enter GCSE statistics in Year 10 and mathematics in Year 11. This is raising achievement. That of the most able is now good. In 2007, nearly three-fifths of those entered for statistics in Year 10 attained grades A* or A.

- Achievement post-16 is good, with over half entered attaining the highest grades, A or B, at A-level in 2007.
- Most students enjoy mathematics. As one Year 9 student said, 'Maths is great. It's fun.' They particularly like practical activities and opportunities to work collaboratively. Many enjoy the challenge and satisfaction, as one said, 'When something clicks.' Another expressed the sense of achievement felt when they are able to say, 'Wow, I understand this.'

Quality of teaching and learning of mathematics

The quality of teaching and learning of mathematics is good.

- The mathematics faculty contains a good mix of experience, including two former heads of faculty, one of whom provides support to other schools in the local authority as an advanced skills teacher. Under enthusiastic leadership staff work well as a team and are effectively broadening their repertoire of teaching strategies. Whilst some lessons are over teacher-directed, with too long spent on repetitive exercises, most engage students in a wide variety of activities at a good pace. Good use is made of paired and group activities with the emphasis on developing students' understanding. As one said, 'Working together helps understanding a lot.'
- Some teaching is inspirational. One teacher was observed dressed as 'a spy' in a lesson where students learnt the order of mathematical operations and solved equations to decode messages. Another provided a student with a microphone to call out 180, as in darts, every time students gave a correct mathematical fact related to that number. In a Year 10 lesson, work on statistics coursework was enhanced by a range of other activities. For example students were given a set of coloured answer cards and had to circulate the room tackling colour-coded questions. They then had to describe each answer to a partner, without using the words contained in it, for them to guess what the answer was.
- Most teachers use skilful questioning to encourage students to explain their reasoning and good use is made of computer-linked whiteboards. Students are enthusiastic about the increasing use of practical activities. One said, 'You are more likely to remember if you are actively involved.'
- Assessment is rigorous. Most marking gives clear advice on what to do to improve. Students appreciate opportunities for peer and self-assessment, including online tests.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is good.

- Good schemes of work are in place. They, and the faculty handbook, contain good advice on ways to enhance teaching through varied learning styles. To address over-reliance on textbooks and repetitive exercises, a new thematic scheme, with greater emphasis on the uses of mathematics, is being trialled with some classes in Key Stage 3. Increasingly good use is being made of information and communication technology, including websites. Graph plotting software is used effectively post-16, but insufficiently in earlier years.
- The breadth of the curriculum is good. Higher attaining students enter statistics in Year 10 and further mathematics and financial studies are offered post-16. Linked to Hatfield University and a local company, the faculty supported a group

of students to participate in the Royal Society Engineering Scheme. This has led to an engineering A-level being introduced in technology.
- There are good programmes of enrichment, with gifted and talented students entered for national and local competitions where they achieve well; one Year 11 student gained a distinction in the most recent Mathematics Olympiad.

Leadership and management of mathematics

The leadership and management of mathematics are outstanding.

- Leadership of the faculty is enthusiastic and innovative, and gives a clear direction for development. This is raising attainment, improving the quality of teaching and stimulating students' interest in mathematics. The faculty's self-evaluation and tracking of students' progress are extremely rigorous.

Subject issue: the effectiveness of the school's approaches to improving the quality of teaching and learning in mathematics

- The school's senior leadership team have introduced two successful initiatives, 'Learning Trios' and 'Students as Learning Partners,' alongside more formal reviews and management strategies. The former links teachers in threes for focussed peer-observations, whilst in the latter students observe lessons and provide feedback to teachers. Both systems help develop students' and teachers' understanding of different styles of learning.
- Good practice is being shared effectively across the mathematics faculty. The head of faculty has worked alongside teachers, modelling successful strategies. Teachers are responding very positively and adjusting their teaching.

Inclusion

Inclusion in mathematics is good.

- Good support in lessons and targeted intervention is raising standards. Grouping students by ability has become more effective with mathematics now taught in two parallel cohorts in most years.
- The faculty team is adopting approaches to teaching that are beginning to address girls' underachievement, with more opportunities for discussion and investigative activities.

Areas for improvement, which we discussed, included:

- raise achievement further, particularly that of girls in Years 10 and 11
- continue to develop teaching and curricular initiatives which make learning more enjoyable and increase students' understanding and confidence.

I hope these observations are useful as you continue to develop mathematics in the school.

As explained in our previous letter, a copy of this letter will be sent to your local authority and will be published on the Ofsted website. It will also be available to the team for your next institutional inspection.

Yours sincerely

David Bain
Additional Inspector