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Dear Mr Seager

Ofsted 2008-09 subject survey inspection programme: mathematics

Thank you for your hospitality and co-operation, and that of your staff, during my visit on 20 and 21 January 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 seven lessons.

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

Achievement and standards

Achievement in mathematics is good. Standards are average.

- Students arrive at the start of Year 7 with standards which are a little below average overall, but many others also arrive in later years. Standards at GCSE and in National Curriculum tests have fluctuated in recent years. Over a fifth of students, for example, attained the highest grades A* or A at GCSE in 2007, well above the national average. However, in 2008, less than a tenth attained these highest grades, but the proportion who gained grade C or better rose to 62%, which is above the national average. About half also attained Grade A* to C in statistics, which was offered as an enrichment activity after school.
- The school carefully analyses the progress of different groups and addresses any concerns. Consequently, for example, the proportion who attained above average

levels in National Curriculum tests in Year 9 rose in 2008, with nearly a third gaining Level 7. Although girls form less than a third of each year group, their achievement is similar to that of boys.

- Most students enjoy mathematics. They are very enthusiastic and are keen to do well. As one said, 'It's fun. I like solving problems.' Others agreed. Behaviour in lessons is generally excellent.

Quality of teaching and learning of mathematics

The quality of teaching and learning of mathematics is good.

- The mathematics department contains a good mix of well qualified teachers, who bring a variety of different strengths to the team. Teaching is generally good and occasionally outstanding. Most teachers plan effectively for a variety of activities. Some excellent use is made of challenging questions, with good emphasis placed on students explaining their reasoning to the class or in groups. In a lower ability Year 8 class, for example, students matched algebraic expressions hung on a 'washing line' with others on the board, explaining why they were equivalent. They then played a lively game which required them to define key words, before using mini-whiteboards to display their attempts to expand brackets. Throughout, the teacher addressed common misconceptions, and praised students' use of mathematical terminology. Students were attentive, learning from each other's responses.
- A review of the department last summer found, that whilst teaching was good, teachers dominated the talk and students generally worked individually. Greater use of paired and group work is now encouraged. As one student said, 'It is better to work together. You see different ways of working.' However, in some lessons too much emphasis is still placed on completing tasks rather than developing understanding. One Year 11 student suggested, and others agreed, that 'Students should be more actively involved every lesson.'
- Whilst, in some classes, students enjoy using computer-linked whiteboards to help explain their reasoning, the potential of these and other forms of information and communication technology (ICT) is not exploited fully. Good use is made of software for revision, including diagnostic tests, but opportunities, to demonstrate the applications of mathematics, for example, are underdeveloped.
- Assessment is rigorous. Recent training has encouraged teachers to plan for a range of assessment strategies in each lesson. In one Year 9 class, for example, students worked in groups analysing responses to examination questions. They then made presentations to the class, highlighting common errors. In another class, students used an electronic voting system to give immediate responses to questions. Teachers' marking is thorough, with some giving clear guidance on what to do to improve.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is satisfactory.

- Schemes of work are sound and provide a framework for what should be covered each lesson. However, they contain insufficient guidance on teaching methods, using and applying mathematics or on the uses of ICT. They contain no exemplar lesson plans and have yet to become an interactive aid to teachers' planning.

- A good start has been made in preparing students for new assessments in functional mathematics, particularly with Year 9. Students also undertake a range of investigative and practical projects across all years, including an enterprise week in Year 10. But, overall, opportunities to use and appreciate the applications of mathematics are insufficiently embedded across the curriculum.
- The school is a specialist mathematics and computing college. The mathematics department has effectively led outreach work with feeder primary schools and a mental health unit. In addition, statistics was offered initially as an enrichment activity and has now been integrated into the option scheme.

Leadership and management of mathematics

The leadership and management of mathematics are good.

- For the last eighteen months there has been no head of mathematics. Attempts to fill the post, now designated as co-director of specialism, have been unsuccessful. Leadership of the department has been undertaken by an assistant headteacher, who has a science background, alongside his other responsibilities. Together with two new seconds in department and a numeracy co-ordinator, they have provided effective leadership.
- Senior and departmental leaders have an accurate view of the strengths and weaknesses of the department as a result of regular monitoring of teaching and students' work. Weaknesses are addressed effectively, supported by a comprehensive programme of staff training. Tracking of students' progress is good, with a very effective programme of intervention, including revision classes and individual tutoring, to address any potential underachievement.

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

- Within the school and the department there is a collaborative approach to improving the quality of teaching and learning. The department has a weekly team meeting scheduled within a school day in addition to any after-school meetings. Whilst some meetings have had to be used to address organisational issues, increasingly they are used to share good practice and develop initiatives. The success of the school's emphasis on 'assessment for learning' over the last year is apparent in the variety of assessment strategies in use.
- Whilst most teaching is good, senior leaders recognise more could be outstanding. There is provision for the appointment of an advanced skills teacher (AST) within the department's structure, once a head of department is in place.

Areas for improvement, which we discussed, included:

- recruit an effective subject leader and an AST to further promote good practice
- continue to encourage all teachers to broaden their repertoire of teaching strategies and the use of stimulating activities that further develop students' understanding
- review the curriculum to ensure all students receive sufficient opportunities to use ICT and to appreciate the applications of their mathematics.

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