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Dear Mr Fisher

Ofsted 2009-10 subject survey inspection programme: mathematics

Thank you for your hospitality and co-operation, and that of your staff, during my visit on 10 and 11 June 2009 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 and standards are above average.

- Students arrive at the start of Year 7 with standards which are a little below average overall. Standards at GCSE and in National Curriculum tests have risen significantly over the last three years and are now above average. In 2008, 64% attained Level 6 in Key Stage 3 tests and 62% Grade C or better at GCSE. Overall, students make good progress, particularly in Key Stage 4. However, the achievement of the most able is only satisfactory, with the proportion attaining the highest grades A* or A at 13%.
- Students generally enjoy mathematics, with some indicating that it is their favourite subject. As one Year 10 student said, 'It is interesting. There are so many different ways to solve problems.' Most behave very well, although a few less motivated students disrupt some classes, particularly in Key Stage 3.

Quality of teaching and learning of mathematics

The quality of teaching and learning of mathematics is good.

- The mathematics department contains well qualified teachers with a range of experience, who work well together. Teachers' subject knowledge is good. Teachers engage students in a variety of mathematical activities and plan well structured lessons. The chosen textbooks that include investigative activities within each unit of work, although students indicate that some teachers leave these activities out.
- Teachers' explanations are clear and their questioning is good, with the expectation that students explain their reasoning fully. However, whilst some place an appropriate emphasis on developing students' conceptual understanding, too much weight is given to learning routines. Students like activities that enable them to discuss their work in pairs and groups, but some have insufficient opportunities to do so. As one Year 8 student said, 'If you are not sure, you can explain to each other. It helps you understand.' A very good lesson with Year 9 encouraged students to use a variety of strategies to calculate percentages of various quantities. However, whilst most teachers take care to address misconceptions and avoid uncritical use of rules such as adding two zeros when multiplying by 100, not all do so sufficiently.
- Computer-linked whiteboards are used very effectively to improve teaching. Students appreciate opportunities to come to the front of the class and work through examples on them. Very good use is made of some other aspects of information and communication technology (ICT), particularly for homework and to aid revision, with students accessing appropriate websites through the school's learning platform.
- Much assessment is rigorous with students' progress tracked carefully. Participation in the Assessing Pupil Progress (APP) project is supporting the development of good self-assessment by students. However, assessment strategies that help identify students' misconceptions are not embedded in all lessons. For example, Year 8 students recalled enjoying using mini-whiteboards when in primary school. One said, 'They were really helpful when discussing together and doing rough work,' as well as enabling the teacher to assess students' responses and understanding effectively.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is good.

- New schemes of work are being developed. As yet, they provide little more than an outline framework linked to the department's chosen textbooks and National Strategy materials. However, hyperlinks are being included and good use is being made of websites and other software, particularly for interactive homework.
- Teachers are encouraged to provide students with opportunities to investigate and to appreciate the applications of mathematics. For example, Year 7 students undertook a cross-curricular project in science, physical education and mathematics on 'healthy lifestyles.' In mathematics lessons, they used statistical techniques to analyse the data collected in the other subjects, with some making use of statistical software. But, as with other aspects of ICT such as graph-plotting packages, use by students is infrequent.
- The curriculum at Key Stage 4 is being broadened with the introduction of statistics alongside a modular mathematics course at GCSE. The most able

students are provided with opportunities to attend masterclasses and in some years have been offered an additional mathematics GCSE. All students are prepared for entry for assessments in functional skills.

Leadership and management of mathematics

The leadership and management of mathematics are good.

- Leadership within the department is strong and has brought about significant improvement in results in recent years. The head of department is a very good manager and, with the support of her deputy, has built an effective team who have embraced successfully a variety of initiatives. Senior and departmental leaders are aware of the strengths and areas for improvement within the department despite the tendency for self-evaluation to be descriptive rather than evaluative. In lesson observations, there is scope to increase the emphasis on the impact of teaching on students' learning.

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

- The school is involved in a variety of local and national initiatives, including APP, the Making Good Progress pilot and partnership with independent schools. Within the department, appropriate support has been provided on behaviour management and the development of the virtual learning environment has been encouraged. These initiatives have improved the tracking of students' progress and development of intervention strategies to address any underachievement, but have not yet had significant impact on the quality of students' learning.
- Students are well aware of the department's strengths and weaknesses but have limited opportunity to contribute constructively to identifying development areas.

Areas for improvement, which we discussed, included:

- raise achievement further, particularly for those who arrive in school with attainment which is above average
- build upon the good practice which exists, to encourage all teachers to broaden their repertoire of teaching strategies, including discussion and collaborative activities, to raise the quality of learning and enhance students' conceptual understanding.

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