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Dear Mr Edgar

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 11 and 12 February 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 satisfactory.

Achievement and standards

Achievement in mathematics is satisfactory. Standards are above average.

- Students arrive at the start of Year 7 with standards in mathematics that, most years, are above average overall. Most students make good progress in Key Stage 3 with over two thirds progressing by at least two levels. Nearly half attained Level 7 or 8 in National Curriculum tests in 2008. However, this progress is not sustained during Years 10 and 11. In 2008, 64% gained Grade C or better at GCSE. This was above the national figure, but well below expectations based on students' performance two years earlier in Key Stage 3 tests. The proportion that gained the highest grades A* or A was close to the national average but again below expectations. The performance of boys and girls has varied at GCSE in the last two years. While in 2007, their performance

was similar with more girls attaining the highest grades A* or A, boys significantly outperformed girls in 2008.

- Students' attitudes to mathematics vary greatly, depending on the quality of teaching they receive. Most behave very well and some display great enthusiasm. They enjoy the challenge mathematics provides and, as one student said, 'the relaxed atmosphere in lessons.' However, a few less motivated students disrupt some classes.

Quality of teaching and learning of mathematics

The quality of teaching and learning of mathematics is satisfactory.

- The mathematics department contains some very experienced teachers. However, there have been a number changes in staffing over the last year and about a third of posts are currently filled by teachers on temporary contracts. Although the department works well together as a team, the quality of teaching that students experience varies widely. A small number of teachers have yet to develop secure relationships with all their classes. This results in inadequate learning in some lessons.
- Some students are taught very well. For example, a Year 10 class worked effectively in groups to match formulae for areas, surface areas and volumes to shapes and solids. There was excellent discussion between students and challenging questioning from the teacher. However, in some other lessons, students have little opportunity to collaborate. As one student said, 'It would be good to work together and get help from each other, but we don't get the chance.' In many lessons, there is good questioning and a strong emphasis on students explaining their reasoning to the class. However, too often, teachers plan for insufficient variety in activities within a lesson. In some lessons, students complete repetitive exercises to practise mathematical routines rather than developing conceptual understanding.
- Good use is made of computer-linked whiteboards, with some teachers making very effective use of their interactive features. There is some outstanding use of other forms of information and communication technology (ICT), such as graph-plotting and geometrical software. One Year 8 student spoke with enormous pride of the geometric patterns her peers had created on laptops. However, not all students have these rich experiences regularly.
- Assessment is satisfactory. Teachers mark work regularly, but don't always give clear advice to students on what to do to improve. Assessment strategies which help identify students' misconceptions are not embedded in all lessons. For example, some teachers use mini-whiteboards very effectively to assess students' responses and understanding. One Year 8 student said, 'I love using them. You get to show others how to work things out on them.' But others indicated they didn't use them at all.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is good.

- New schemes of work are being developed collaboratively. Whilst those for Years 8 to 11 provide little more than an outline framework, the new scheme for Year 7, though yet to be completed, is an exemplar of good practice. Each unit has a section on probing questions and ideas on how to teach the topic. There are

hyperlinks to a variety of websites and encouragement for teachers to adopt a good range of learning styles. There are appropriate references to functional mathematics and regular opportunities for students to investigate and appreciate the applications of mathematics. The local authority has shared the scheme with other schools as an example of good practice.

- There is good provision for the use of ICT within the department. A set of laptops has been purchased and one of the teachers participates in the National Strategy's ICT focus group. However, whilst some classes use a variety of software regularly, others do not. Students have access to websites for revision and can purchase CD-Roms and revision packs from the department. There are good programmes of enrichment including revision classes, master classes and entry for national and local competitions.

Leadership and management of mathematics

The leadership and management of mathematics are good.

- The experienced leaders of the department have developed a cohesive team of teachers, whilst successfully encouraging initiatives such as the Year 7 curriculum and the use of ICT. Leaders provide good support to temporary and inexperienced teachers. However, difficulties in staffing this year have provided additional challenges.
- Senior and departmental leaders are aware of the strengths and weaknesses within the department. They carried out a review during the autumn term. Whilst this was thorough, and included interviews with students, observations of lessons may have taken insufficient account of the impact of any weaknesses in teaching on the quality of learning. Tracking of students' progress and analyses of examination results are rigorous.

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

- The results of your systematic programme of observations of all teachers within the school during your first year in post as headteacher, coupled with other lesson observations, have supported the production of a new development plan. The introduction of learning development meetings help spread the good practice which exists within departments.
- The department is fortunate in having a member of staff who was a leading mathematics teacher in the local authority and who, amongst many other activities, is a tutor for the Royal Institution master classes. She plays a leading role in many initiatives, particularly in the use of ICT. Consequently, the department has opportunities to trial some innovative activities and software.

Areas for improvement, which we discussed, included:

- raising achievement, particularly in Years 10 and 11, by focusing on the development of conceptual understanding in all lessons
- building upon the good practice which exists, encouraging all teachers to plan for a variety of activities within lessons with opportunities for students to work collaboratively and to assess their 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