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Mr I Harrison
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Dear Mr Harrison

Ofsted survey inspection programme – mathematics

Thank you for your hospitality and cooperation, and that of your staff, during my visit on 5 and 6 October 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 11 lessons.

The overall effectiveness of mathematics is outstanding.

Achievement in mathematics

Achievement in mathematics is outstanding.

- Students consistently attain very high standards at the age of 16. In the last three years, more than 90% of students have obtained a grade C or better in mathematics. The proportion gaining the highest A* and A grades has risen to more than a half.
- Students play an active role in lessons, asking intelligent questions and making effective and often independent notes. The evidence from scrutiny

of their books confirms that progress and learning are outstanding over time.

- Students show very good attitudes to learning. For example, before one observed lesson, students had engaged in independent research on tree diagrams that enabled them to make outstanding progress in the lesson. A group of students from the same class had been responsible for presenting the previous topic to the class, for which they prepared their own high-quality teaching resources.

Quality of teaching of mathematics

The quality of teaching of mathematics is good.

- Nine of the 11 lessons observed were good or better, but there is still scope for further improvement as several of the good lessons were closer to satisfactory than outstanding. This is not altogether surprising, since two of the teachers are in their first month of teaching.
- There is a strong drive within the department to teach mathematics through a spirit of enquiry, where students are encouraged to use what they already know to tackle new areas of mathematics. As yet, this does not happen consistently in every lesson, but all the lessons observed provided evidence of this commitment. The best lessons included links with different areas of mathematics.
- Students are involved very well in their own assessment. Assessment in lessons is good among the most experienced teachers. Others are still developing their skills. They can assess satisfactorily as the lesson goes on, but do not always adjust their teaching on the basis of the information they obtain from students.
- The school has a strong system to monitor students' progress and it uses a range of interventions to ensure that no student is left behind. For example, teaching and learning were outstanding in a Year 11 class that contained several students who are receiving academic support. The class had previously had an outdoor lesson, where the students had positioned themselves in accordance with instructions such as 'all stand two metres from Jon'. This lesson had been filmed from above. The video clips formed the basis of an outstanding lesson to follow up on this kinaesthetic approach, driving home the intended learning on the topic of loci. As a result, students made outstanding progress over the course of two lessons.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is good.

- A curriculum that emphasises the use and application of mathematics is a clear objective for the department, and there has been some progress in improving consistency in this respect. The department accepts that

students have too few opportunities to use information and communication technology in mathematics.

- The new schemes of work for Years 7 and 8 incorporate real-life applications of mathematics and a range of more extended tasks. Low-attaining students are taught in a transition group to strengthen their literacy and numeracy to allow them to access the curriculum better.
- In Key Stage 4, the department has focused on improving standards in algebra. Scrutiny of students' books shows that work on equations is well thought out, with exercises showing progression and variety. However, work on deriving rules for sequences is over-reliant on the difference method, when a more geometrical approach would provide better opportunities for proof.
- The school's business and enterprise specialism is reflected in the inclusion of several off-timetable 'enterprise days', which involve mathematics in context. It also funds smaller classes in Key Stage 4 and a 'student progress officer'.
- The department has a well planned assessment programme to check progress against students' targets on a regular basis. The school offers a range of interventions, especially for underachieving and borderline students. For example, learning mentors and a very effective teacher are deployed to teach students who are at risk of not meeting their grade C target. In addition, the school's virtual learning platform gives access to learning packages that students can access from home, providing a good resource for revision.
- The most able students take GCSE in Year 10, with most gaining A* grades, followed by GCSE statistics in Year 11. There is a growing recognition that this arrangement is not optimal. It is not the best preparation for A level, and it fails to stretch the most able students in Year 11. However, there is good involvement in the various national mathematics challenges.

Effectiveness of leadership and management of mathematics

The effectiveness of the leadership and management of mathematics is outstanding.

- Senior managers and the acting head of mathematics have a very clear understanding of what constitutes good teaching and learning. They observe lessons regularly and know teachers' strengths and development needs. Students' views are respected. For example, some students help to interview prospective teachers and others comment on their trial lessons.
- The mathematics department is reviewed annually. This involves examination of documentation, a review of the assessment system, and some very good examples of perceptive monitoring of books. Strengths and weaknesses are identified clearly. The very high attainment and outstanding progress have not led to any complacency. Capacity for further improvement is outstanding.

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

- There are three important contributing factors to the upward trend in attainment. One is the departmental focus on teaching for understanding, which has brought about a change of learning culture. Another is the focus on providing very effective academic guidance and support. The third is the very good organisation of professional development, which includes regular demonstration lessons and peer observation. An experienced teacher has a well-defined role to support colleagues and to help them become reflective practitioners.

Areas for improvement, which we discussed, include:

- reviewing the curriculum offer for the most able students to ensure that they meet challenging work in Year 11 that prepares them well for advanced study
- continuing to develop teaching and learning, by sharing best practice and working towards greater consistency.

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

Stephen Abbott
Her Majesty's Inspector