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Mr M Rainsford
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Dear Mr Rainsford

Ofsted 2009-10 subject survey inspection programme: mathematics

Thank you for your hospitality and cooperation, and that of your staff, during my visit on 1 and 2 December 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.

The evidence used to inform the judgements included interviews with staff and students, scrutiny of relevant documentation, analysis of students' work and observation of parts of 14 lessons.

The overall effectiveness of the subject is satisfactory.

Achievement in mathematics

Achievement in mathematics is satisfactory.

- In lessons, students make satisfactory progress. Although there are some occasions when students make better progress than this, too few students make consistently good progress in lessons because the quality of teaching varies. Students are better at carrying out methods than understanding the underlying concepts.
- Students' attainment by the end of Key Stage 4 is broadly average. The school's records show that current Year 11 students are on track to reach higher standards. The school's data indicate that attainment at the end of

Key Stage 3 rose from average in 2007 to above average since then, and that students' progress during Key Stage 3 has also improved and is now securely average.

- Progress between Key Stages 2 and 4 is broadly average, although it is faster in Key Stage 4 than in Key Stage 3. With the improved progress that current Key Stage 3 students are making, the school is on track for better overall progress from Key Stage 2 to 4.
- In 2008, students identified as receiving school action for support of their special educational needs and/or disabilities made satisfactory progress, but it was lower than for other groups. The school's records do not readily show the progress of this group of students each year.
- Students enter the sixth form with below-average attainment. They make good and improving progress at AS level where they reach broadly average standards, and satisfactory progress at A level where their attainment is below average. Relatively few attain grades A or B.
- Behaviour has improved. Most students work hard in lessons and listen well to their teachers' explanations, although a few are sometimes restless.

Quality of teaching of mathematics

The quality of teaching of mathematics is satisfactory.

- Typical of lessons are teachers' good relationships with students and the high level of care that extends to their support of students after school and in revision sessions. Teachers use a range of resources including text books, worksheets, interactive whiteboards, games and practical equipment.
- In the stronger lessons, teachers use their good subject knowledge to choose rich examples and activities that help to build understanding of mathematical concepts and make links across the subject. They challenge students to reach higher levels. Through monitoring during lessons of how everyone is progressing, they adapt their teaching to meet needs effectively.
- In the less successful lessons, there is more reliance on following rules or working quickly than on understanding. Sometimes, activities are not chosen well enough to clarify the concept or challenge all students. Even where good activities are used, teachers do not check how well everyone understands sufficiently, so some students become stuck, work slowly, or make errors. Students spend too long listening and not enough time on interactive pair or group work to develop their understanding.
- Teachers inform students of the level of work they are doing and their target National Curriculum level or GCSE grade. Through support and discussion, they help students to improve on the topic which they are studying. However, students do not know what they need to do to reach the next level or grade. They are not involved well enough in assessing their own progress towards targets or against the learning objectives for a

lesson. The quality of marking varies, with praise used effectively and guidance on how to improve being strongest in the sixth form.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is satisfactory.

- Schemes of work have been revised to be based on development of mathematical content through levels of difficulty rather than on textbook chapters. This has helped to provide more demanding work matched closely to the needs of each class. It has contributed to the raised attainment at Key Stage 3. There are hyperlinks to a range of resources, including websites and practical or group tasks, but no particular approaches are specified. As a result, some students are given activities which build their conceptual understanding while others receive a more procedural introduction to a topic.
- Students have a few opportunities to do investigatory work or to apply mathematics in an engineering context, and sometimes such contexts are referred to briefly in lessons. Nevertheless, there is no structured development of the use and application of mathematics across all year groups and cross-curricular themes are not integrated.
- Interactive whiteboards are used in many lessons and students are increasingly accessing mathematics programmes for homework and revision. However, students rarely have hands-on use of computers to help them to learn in lessons.
- Focused revision and support have had a notable impact on GCSE results. The timing of examination entry and selection of courses are matched closely to students' needs to raise attainment at GCSE and increase take-up in the sixth form. Numbers studying AS level have risen, and this year a further mathematics course has started.
- Additional mathematics support for low attainers, including individual work on computers, is organised by the special educational needs and/or disabilities department. Students at risk of not attaining GCSE grade C are also entered for a numeracy qualification. Opportunities to improve attainment further are lost because these initiatives are not integrated with the mathematics provision.
- When students need to change sites between lessons they arrive later than others, which constrains the learning for them and those who have arrived earlier. The small size of some rooms limits provision and the feasibility of teachers monitoring every student's work quickly.

Effectiveness of leadership and management of mathematics

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

- The head of department conveys a clear emphasis on raising attainment and progress to staff. She has introduced a combination of initiatives that staff are achieving in the short-term, while setting in motion some steps

towards more fundamental improvements to teaching and the curriculum across year groups.

- Evaluation of lessons is accurate, as are the assessment of strengths and weaknesses. Examination and annual performance are analysed well overall and by different teaching and student groups, although not the groups with special educational needs and/or disabilities. Progress made each term is also evaluated effectively.
- Systems for monitoring and following up students' progress have been improved substantially, with an initial emphasis on older years. They lead to effective intervention to support Year 11 students who may be falling behind, including through contact with parents. Analysis to identify topics in which performance was weaker and compulsory re-sits if targets are not met in class tests are also improving progress.
- Monitoring of teaching and the challenge in lessons and sensitive team support have led to improvements. Nevertheless, too much teaching remains satisfactory. Areas identified for development do not always tackle raising or assessing understanding.
- Improvement plans contain some appropriate actions, but do not consistently specify an achievable impact that is measurable in terms of quantity or quality. Staff work together keenly to share ideas and responsibilities, but there is room for them to be more involved in evaluation and planning how to improve, and for the incorporation of students' views.

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

- As a training school, many trainees have been mentored successfully and have then remained as newly qualified teachers. Trainees learn how to identify the constituents of good practice through observing jointly with experts.
- The opportunity for staff to study for a master's degree at the school has raised the quality of teaching, particularly through enabling a focus on teaching and learning styles.

Areas for improvement, which we discussed, include:

- raising satisfactory teaching to good by:
 - increasing the emphasis in the schemes of work and lessons on developing understanding and on using and applying mathematics
 - ensuring that all students are challenged
 - focusing observation of lessons on targets and support
- developing students' independence through greater awareness of what is needed to improve their levels or grades and more involvement in self-assessment against these and the learning objectives for a lesson

- sharpening planning, and evaluation of its impact, with achievable, measurable and shared targets.

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

Gill Close
Her Majesty's Inspector