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Mr M York
Principal
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Dear Mr York

Ofsted 2010–11 subject survey inspection programme: mathematics

Thank you for your hospitality and cooperation, and that of the staff and students, during my visit with Robert Barbour HMI on 15 and 16 November 2010 to look at work 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 without their consent.

The evidence used to inform the judgements included: interviews with staff and students; scrutiny of relevant documentation; analysis of students' work; observation of 13 lessons; and brief visits to eight other lessons and two before-school classes.

The overall effectiveness of mathematics is satisfactory.

Achievement in mathematics

Achievement in mathematics is satisfactory.

- Students' attainment on joining the school is broadly average. By the end of Key Stages 3 and 4, attainment is also broadly average. In 2010, 68% of students attained GCSE grades A* to C, continuing a steady upward trend. The top sets take GCSE early, but only a minority attain the highest A* and A grades, and they study statistics in Year 11. Some also opt to study AS units in before-school lessons. Although most students seem happy with these arrangements, others expressed some reservations.
- Sixth-form students study a range of mathematics courses, including the International Baccalaureate, and attain broadly average results, with signs of improvement at AS in 2010.

- Students' skills in using and applying mathematics, for example reasoning and proof, are less well developed than other areas of mathematics. Students studying for the International Baccalaureate, however, have some good opportunities to apply mathematics in other subjects.
- Variation in the quality of learning in lessons means that students' progress, although satisfactory overall, is uneven. It is strongest in the sixth form where good attention is given to mathematical detail, but even here greater emphasis could be placed on understanding. In mixed-ability classes in Years 7 and 8, the highest and lowest attainers are not consistently well challenged or supported in their learning.
- The majority of students behave well in lessons, but low-level chatter and inattention occasionally impede learning. Although some students are passive learners, most respond positively when given opportunities to work in pairs or groups and discuss their ideas. A feature of the best lessons is students' confident demonstration of solutions to their peers.

Quality of teaching of mathematics

The quality of teaching of mathematics is satisfactory.

- The quality of teaching varies: it was good and occasionally outstanding in around one third of the lessons, but in several others weaknesses impeded students' progress. In particular, lesson planning did not take sufficient account of students' starting points, needs and abilities. Although teachers use the school's generic planning format, there is work to do to ensure that planning supports the sequencing of mathematical learning within a lesson and over time.
- Strengths of the better teaching include teachers' good subject knowledge, which is reflected in their skilful questioning and building of mathematical techniques and ideas. Discussion is encouraged and students' responses are used to make teaching points, for example to tackle emerging misconceptions or probe understanding more deeply. Activities are carefully pitched and sequenced to secure the steps in learning.
- Many staff ask appropriate questions during whole-class teaching, and accept answers from volunteers or targeted individuals. By contrast, in the better lessons, strategies such as mini-whiteboards and electronic voting provide teachers with insight into the progress of each student. All staff move round the class while students work on tasks, providing one-to-one support, but not all spot errors that point to gaps in understanding. Occasionally, teachers' explanations are unclear or inaccurate.
- The quality of marking varies. Some is helpful in identifying the way forward but many comments simply praise or criticise students' efforts.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is satisfactory.

- Considerable thought has been given to the mathematical pathways offered to students in Key Stage 4 and the sixth form, where students

have a broader range of choices than is typical. While many speak enthusiastically about their experiences and enjoyment of the subject, students' views are not universally positive. Senior and subject leaders acknowledge that it may be timely to review the detail of some pathways to ensure that students' potential is fully realised.

- Schemes of work provide adequate coverage of the mathematics curriculum but are not supplemented by guidance for staff on approaches and activities that support the development of conceptual understanding, including through the use of information and communication technology and practical resources, and using and applying mathematics. No advice is given on how to cater for students of widely different mathematical abilities within Year 7 and 8 classes. This is of particular importance for less experienced teachers and those whose principal specialisms are not mathematics.

Effectiveness of leadership and management of mathematics

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

- Senior leaders' vision for deep learning experiences for all students has informed the focus of the school's work on teaching and the curriculum. The school has striven for quality and longer-term goals rather than adopt short-term strategies aimed at raising performance at GCSE grade C. A challenge for the mathematics department is to marry the school's structures and ethos with best practice in securing good achievement in mathematics.
- The department has effective systems for assessing and tracking students' performance and intervening where students are underachieving. This is helping the rising trend in results at GCSE and the improving progress in the sixth form. Capacity for further improvement is satisfactory.
- The school's split site and the size and changing make-up of the team of mathematics teachers present some challenges. At present, the director of personalised learning for mathematics and the three key-stage leaders carry out few monitoring activities. This aligns with the established whole-school system for quality assurance. Review meetings tend to focus on analysis of outcomes against targets, which have recently been made more challenging. The lack of first-hand monitoring evidence impedes accurate self-evaluation, the identification of mathematical areas for development, and the tailoring of subject-specific support for individual teachers. Also, development planning is not sufficiently informed by such mathematical insight.

Areas for improvement, which we discussed, include:

- improving the quality of learning by:
 - ensuring that lessons focus on building gains in students' knowledge, skills and understanding within lessons, from one lesson to the next, and over time

- taking a systematic approach to raising the quality of teaching, capitalising on existing good practice and tackling weaknesses and inconsistencies
- providing guidance for teachers, particularly in Key Stage 3, on:
 - approaches and activities that support the development of students' understanding, including use of information and communication technology and practical equipment
 - curricular planning for mixed-ability classes
- developing the role of the subject leaders in driving improvement through:
 - monitoring provision, and using the outcomes strategically
 - strengthening accountability through line management.

I hope that these observations are useful as you continue to develop mathematics in the school.

As explained previously, a copy of this letter will be published on the Ofsted website. It may be used to inform decisions about any future inspection. A copy of this letter is also being sent to your local authority.

Yours sincerely

Jane Jones
Her Majesty's Inspector