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Mrs P Hutchinson
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Dear Mrs Hutchinson

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 on 9 and 10 December 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; and observation of 10 lessons.

The overall effectiveness of mathematics is satisfactory.

Achievement in mathematics

Achievement in mathematics is satisfactory.

- Last year, the school made a determined and successful effort to improve GCSE results. A substantial programme of revision and support for underachieving students was launched, with many students re-sitting earlier GCSE modules. Attainment at GCSE was average in 2009 and above average in 2010.
- This improvement is fragile. Students do not develop enough understanding to comprehend less familiar problems. Older students still suffer from the legacy of inadequate progress in recent years and many are below target in their early GCSE module results. The school is therefore mounting another campaign of revision, intervention and module re-sits to boost results in 2011.

- Learning and progress in lessons are variable, reflecting current unevenness in the quality of teaching. However, careful deployment of the most effective teachers has allowed all students to benefit from their expertise at least part of the time. As a result, students' overall progress is satisfactory.
- Only two students completed A-level mathematics in 2010, but retention to post-16 study has improved with better teaching. Standards are above average in Year 13 and students are making good progress in lessons. In contrast, some Year 12 students show limited understanding of the work they have covered so far. For example, they can complete the square for a quadratic expression, but do not then sketch the graph to support their reasoning.
- Higher-attaining students generally enjoy mathematics and consider teaching to be effective. Students preparing for Foundation tier GCSE are more equivocal. They enjoy some lessons, but find others confusing.

Quality of teaching of mathematics

The quality of teaching of mathematics is satisfactory.

- The school has a core of effective teaching in which mathematics is presented as a logical and coherent subject. Teachers draw on students' own thoughts and suggestions to shape their lessons, adjusting their teaching according to the responses of students. They patiently guide students' learning, emphasising correctness and reasoning. Satisfactory teaching is based more on students being shown a specific method and then practising it.
- The more effective teaching uses a range of prepared materials to cater for students' different starting points. Teaching assistants have established good working relationships with students who have special educational needs and/or disabilities, but they are not always given clear directions by the teacher.
- The school has not entirely eliminated inadequate teaching. Some lessons are presented in a muddled way and the pace of learning is slow. This is because some teachers are inexperienced in teaching mathematics or lack subject expertise. The quality of teaching is judged as satisfactory because there is clear evidence that these issues are being tackled appropriately and the impact of the small minority of inadequate teaching is being minimised.
- Teachers monitor students' progress as they work to varying effect. In less effective lessons, teachers do not have a clear picture of what they want students to learn and do not check on the progress of all students. The best teachers plan or improvise assessment opportunities and modify their teaching accordingly. All teachers mark books regularly, and most give good quality feedback to help students to improve.
- Students have regular tests to monitor their progress. These are analysed well to identify areas of individual and whole-class weakness, which are tackled in subsequent lessons and revision classes.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is satisfactory.

- The schemes of work indicate which topics need to be taught each term, with appropriate references to textbooks. However, they provide little guidance for less experienced teachers on productive approaches to teaching particular topics, or on the 'big ideas' of mathematics.
- A legacy of the disjointed teaching in previous years is that students are not used to thinking for themselves. Although some 'projects' and 'rich tasks' are now included in the schemes of work, they do not support a coherent and progressive programme for using and applying mathematics.
- The department subscribes to a web-based teaching programme. Some self-motivated students use it as an independent revision tool, but the department does not use this facility to its full potential.
- Sixth-form teaching is in the hands of experienced specialists, who understand the value of teaching a little beyond the examination specification to give greater coherence to the teaching programme and to develop greater facility with the skills needed for algebra and calculus.

Effectiveness of leadership and management of mathematics

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

- Senior leaders recognise the urgent need to raise achievement and are taking effective action through a 'Gaining Ground' partnership. Crucially, they realise that it is not enough for more students to gain C grades at GCSE. They are also working with the most able to increase A and A* grades. The improvements seen in 2010 provide evidence of a satisfactory capacity to improve. The decision to emphasise revision and intervention is recognised as a short-term solution.
- The head of department has made a clear difference in his first year in post. He has worked tirelessly to tackle weaknesses in the department, often through direct action, such as teaching more classes himself. However, this has limited the scope for a more strategic approach, such as improving the schemes of work or coaching inexperienced teachers.
- Self-evaluation is broadly accurate, but not always fully grounded in evidence. For example, work scrutiny and lesson observations are not regular enough to pinpoint the improvements needed in teaching and learning. Also, while individual students' progress is monitored well against their targets, leaders do not have ready access to data on the average progress made by different groups of students.
- Senior leaders have given strong support to the head of department, for example by forging better partnerships with parents and by committing further resources. For example, a mathematics teacher who will join the school in January has considerable experience in providing professional

development. The department is also scheduled to become less reliant on non-specialists.

Areas for improvement, which we discussed, include

- raising achievement at all levels by:
 - improving the consistency of teaching, particularly teaching that helps students to be independent thinkers and learners
 - supporting inexperienced and non-specialist teachers to increase their subject expertise
 - strengthening the schemes of work to provide more guidance on teaching for understanding and better planning for progression in using and applying mathematics
 - making better use of data to gauge the average progress of groups and to target action
 - ensuring that work scrutiny and lesson observations are regular enough to pinpoint the improvements needed in teaching and learning.

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

Stephen Abbott
Her Majesty's Inspector