

9 February 2015

Mr R Searle
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Dear Mr Searle

Ofsted 2014–15 subject survey inspection programme: mathematics

Thank you for your hospitality and cooperation, and that of your staff and students, during my visit on 26 and 27 January 2015 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 eight lessons, and shorter visits to three other lessons. Some observations were conducted jointly with senior staff.

The overall effectiveness of mathematics requires improvement.

Leadership and management of mathematics require improvement.

- The leadership of the department has undergone several significant changes over recent years. Recruiting an experienced head of department has been difficult and the school has sensibly concentrated on developing its own leaders in mathematics. The current head of department is due to return soon from maternity leave, and she took part in discussions during the visit alongside the acting head of department.
- The day-to-day work of the department is well organised. Staff and students feel that mathematics provides a calm and well-ordered environment.
- Development planning spells out clear priorities for some aspects of the departmental team's work. It does not, however, give a strong steer to the development of the curriculum and to assessment schemes to ensure that they will meet the requirements of the new National Curriculum. This reflects the department's under-developed grasp of some of the challenges. Work has begun with another local school to develop an approach, but this is at an early stage.

- Leaders have a good understanding of the strengths and development needs of members of the team, and performance is managed adequately. The quality of teaching and learning is judged accurately and astutely.
- The head of department observes lessons through a combination of a few formal lesson observations each year, and more frequent shorter visits each half term. These visits are used well to check that agreed areas for improvement are being targeted and to identify further training needs.
- Students' progress is monitored closely at departmental and whole-school levels. Analyses are used to direct intervention and support but important messages around how well different groups are achieving are not always acted on.
- Expectations of GCSE outcomes based on students' performance at Key Stage 2 are not always high enough.

The curriculum in mathematics requires improvement.

- Aspects of the curriculum have improved recently. Greater emphasis is now given in Key Stage 3 to students seeing their work in mathematics as relevant and useful by requiring them to use their skills to solve problems. Schemes of work have been reorganised to have longer blocks of time on topics to deepen students' grasp of key concepts and give them chance to apply their learning in a variety of contexts. Each topic is now taught simultaneously to all groups across Years 7 to 9; this enables teachers to share resources and discuss teaching strategies better. The department is considering changes to assessment practices to gain the most from this new curriculum organisation.
- New calculation strategies are being tried out in some year groups to provide students with a better sense of how to bring their skills to bear on more complex problems. For example the Singapore bar method is felt to give students a useful way to approach problems involving proportions and ratios. Such techniques are used by some staff, but are not yet written into schemes of work to ensure that they benefit all students.
- Good work has been undertaken to develop students' numeracy skills across all subjects. A whole-school numeracy policy has been drawn-up, and a successful 'I learned maths today' event was held recently to raise the awareness of staff and students of the contribution to fluency in number work and calculation techniques by all subjects, and every teacher's role in supporting this learning.

Teaching in mathematics requires improvement.

- The best teaching emphasises students achieving a thorough grasp of key concepts in each topic. In one Year 11 lesson observed the teacher continually checked students' grasp of the use of translation vectors and responded quickly and effectively to any misconceptions by individuals or groups. Another teacher was observed working with a group of Year 7 students who have previously struggled in mathematics. He obtained a clear view of their understanding of fractions and was then able to build on it successfully in work on mixed numbers and improper fractions.

- Teachers ensure that lessons are calm and orderly; students are very attentive and willing to learn. However, lesson planning does not always build in opportunities for a significant proportion of students to make very good progress.
- Teaching sometimes fails to link important concepts across topics. As a result, students tend to approach problems using taught techniques, but not appreciating how skills in one area can inform their strategy in another. As a consequence, they can stumble when they encounter complications.
- The marking of work, and the feedback offered, do not promote good progress. Too little marking addresses important mathematical detail. Students' work is often not well organised or laid out sensibly on the page.

Achievement in mathematics is requires improvement.

- Students arrive at the school with below-average attainment in mathematics. By the end of Key Stage 4, the average GCSE grade achieved is around a third of a grade below the national average. This does not represent good progress overall. Boys have made less progress than girls in recent years.
- Disadvantaged students make similar progress to others in mathematics, but this means that the attainment gap, which has already opened up by the end of Key Stage 2, is not closing rapidly. Leaders are well aware of this and indications are that current responses are being more successful.
- The quality of students' learning is adequate: the proportion making the progress expected of them is near the national average. However the proportion leaving in 2014 having made good progress was below average.
- Students say they are well cared for in mathematics and are confident that teachers want the best for them and will help them to achieve. Their views have been taken into account in some recent curriculum changes.

Areas for improvement, which we discussed, include:

- ensuring that all students are able to make much better progress by strengthening their grasp of underlying mathematical concepts, and making links across topics
- improving the quality of marking and feedback
- working collaboratively with local schools, the local authority, and subject associations to develop a clear strategy for:
 - ensuring that the new schemes of work promote good learning
 - developing new approaches to assessment.

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

Alan Taylor-Bennett
Her Majesty's Inspector