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Dear Mrs Brooker

Ofsted 2008-09 subject survey inspection programme: mathematics

Thank you for your hospitality and co-operation, and that of your staff, during my visit on 17 and 18 November 2008 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 you, the deputy headteacher, the subject leaders, an experienced 'post-threshold' mathematics teacher, groups of students in Years 8 and 11, scrutiny of relevant documentation, analysis of students' work and observation of nine lessons.

The overall effectiveness of the subject, mathematics, was judged to be satisfactory.

Achievement and standards

Achievement in mathematics is satisfactory overall. Standards are well above average in all key stages.

- Students enter the school having attained well-above-average standards in national tests at primary school. The vast majority make satisfactory progress to maintain high standards in Key Stage 3 tests. Early indications are that the proportion of students attaining the highest Levels 7 and 8 rose to 57% in 2008. However, some students who enter the school with average or lower attainment do less well than might be expected.
- Although GCSE results in mathematics remain significantly above average, many students do not build adequately on their attainment at ages 11 and 14. This has been the case for the last few years. Underachievement affects the lower to middle ability students the most, but some potential A grades are also not

realised. Work remains to be done to identify and tackle the underlying issues in teaching and learning in this key stage.
- Standards at A level are high. 60% of the students gained A or B grades in 2008 and no-one failed. This is a significant improvement over the 2007 results and is in line with students' very strong starting points. Standards at AS in Year 12 also improved and are above average.
- Most students make satisfactory progress in lessons. More consistently good teaching is required to ensure that all students achieve well.
- Students are generally very well behaved, cooperative learners who want to succeed. Given the opportunity, they collaborate well in pairs or groups. More often, though, their contribution is passive because they have little chance to express their reasoning and develop independence in learning.
- There are inconsistencies in the way students' independence as budding mathematicians is developed and in how much they enjoy learning mathematics. All the students were appreciative of the committed support provided by their teachers, particularly in the run up to examinations.

Quality of teaching and learning of mathematics

The quality of teaching and learning of mathematics is satisfactory.

- The department, with support from senior staff and the local authority's mathematics adviser and National Strategy consultant, has worked to improve the quality of teaching and learning. The school's evidence shows positive signs of improvement that include a broader range of activities and teaching styles and improved use of assessment to promote learning.
- Strengths of the teaching include teachers' subject knowledge and attention to appropriate mathematical notation and language. Classroom displays are bright and informative, and reflect variety in students' work, including investigations, and aspects of algebra and shape.
- The best teaching ensures students think things through for themselves and encourages mathematical discussion. This builds students' confidence and involvement in the learning process. The teachers were skilful in anticipating and identifying students' misconceptions.
- In the weaker lessons, teachers tended to talk for too long. Where students' attention wandered, their progress faltered. Opportunities were missed to capitalise on students' responses to make teaching points or to move the lesson on more rapidly.
- Some teachers tried to use interesting active approaches, informed by various assessment strategies. While these lessons were not always as successful as teachers would have hoped, they reflect some important developments in the department's work in recent months. A key point for improvement now is much greater clarity about precisely what each student should learn and how the chosen activities should enable them to make those gains. The steps in learning need to be carefully planned.
- Scrutiny of students' exercise books showed that learning was not consistently of sufficient depth: some books jumped from one topic to the next, showing little evidence of progression over time.
- The quality of marking varied with the best providing helpful feedback to students. Systems for students' self-assessment of their learning are in the early stages. Not all staff have embraced the department's policy on assessment.
- Although lesson plans often noted which students were gifted or who had learning difficulties, little account was taken of their needs to tailor resources or activities to ensure well-matched challenge or support.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is satisfactory.

- Schemes of learning are at varying stages of development. At Key Stage 3, units are pitched at three levels, each with support, core and extension objectives. Some enrichment activities are included, and the development of more resources is planned. These should include opportunities for all students to develop the key process skills of the new National Curriculum.
- At Key Stage 4 and in the sixth form, the schemes are based on examination specifications. While these give adequate coverage of the examined curriculum, the department has yet to customise them fully to the school's context.
- There is currently a mismatch between the schemes of learning and students' experience of learning mathematics. In practice, too much depends on the relative strengths of individual teachers. More guidance is required on the approaches or activities teachers might use to secure students' conceptual understanding.
- Students have little opportunity to use information and communication technology (ICT) as a tool for learning or exploring mathematics. Interactive whiteboards, provided through the school's specialist technology status, have been installed in most mathematics classrooms. Some teachers use software to enhance students' understanding but this is not a common feature of the teaching.
- The department makes considerable use of a mathematics website, sometimes for teaching but also for homework. While students like the support this website gives them in consolidating their learning, its frequent use for homework has narrowed some students' experience of learning outside of the classroom.
- There is a limited range of extra-curricular activities in mathematics.

Leadership and management of mathematics

The leadership and management of mathematics are inadequate but improving.

- Your drive to improve achievement across the school has included much clearer expectations of middle managers. Strong senior leadership support, coupled with the departmental team approach, provides satisfactory capacity for improvement.
- Data management systems have enabled teachers to track students' progress against their targets. The need for focused intervention to tackle gaps and earlier underachievement is better understood.
- Management practices are developing but, at this stage, are not sufficiently robust to ensure the curriculum and teaching meet all students' needs or to secure the necessary improvements quickly. The department is implementing the school's guidance on monitoring, for instance carrying out analysis of examination results, work scrutiny and lesson observations, but records of the findings and feedback to staff are not routinely kept. The subject leaders had a secure grasp of the quality of teaching in the jointly observed lessons. A crucial next step is to link the findings of monitoring to classroom practice, provide feedback to teachers on specific strengths, and follow up areas of inconsistency or for development in a systematic manner.
- The 2008-09 department development plan aligns well with the whole-school plan. Actions are clearly defined with those responsible identified. Many success criteria are quantitative and often challenging. The department might usefully identify where additional training is required and consider how the effectiveness of actions is to be monitored and evaluated.
- Although you and the deputy headteacher clearly understand the pivotal role of subject leaders in driving improvement in teaching and learning and the curriculum, such strategic leadership is currently underdeveloped in mathematics.

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

- The school's quality assurance review last spring provided a robust baseline of the quality of provision and rightly identified the concerns around students' achievement. There is evidence that training by the LA's staff, on assessment for learning and more active learning for instance, is having a beneficial impact although these aspects are not yet fully embedded or leading to substantial gains in students' progress. The training, however, has not been followed by monitoring to ensure consistency and check all staff are confident. Some teachers have benefited from coaching: this is seen positively and is regarded as developmental, but a sharper follow-up of the identified action points is required if improvement is to be secured more rapidly.
- There is scope to make more of the good practice, experience and energy of the members of the department. All have a responsibility to contribute: securing rapid improvement will demand good collaborative approaches. For instance, teachers might take a lead role in the systematic development of teaching or the identification of activities and guidance to supplement the schemes of learning.

Areas for improvement, which we discussed, included:

- improve the quality of teaching, paying particular attention to planning sequences of activities to build each student's understanding and skills, day by day and over time
- increase students' involvement in and responsibility for their learning, individually and collaboratively, particularly through discussion around problem solving and investigative activities, and further development of self-assessment
- make better use of the outcomes of monitoring and data analysis to identify and share areas of strength and tackle the underlying causes of weaknesses in students' progress
- ensure departmental structures and systems are as equitable as possible to promote students' achievement and ensure their entitlement to good quality curricular and learning experiences.

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 local Learning and Skills Council and will be published on the Ofsted website. It will also be available to the team for your next institutional inspection.

Yours sincerely

Jane Jones
Her Majesty's Inspector