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Miss L Roan  
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Dear Miss Roan

Ofsted survey inspection programme – mathematics

Thank you for your hospitality and cooperation, and that of your staff, during my visit on 23 and 24 September 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. All feedback letters will be published on the Ofsted website at the end of each half-term.

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

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

Achievement in mathematics

Achievement in mathematics is good.

- Standards are below average when students enter Year 7, but close to average by the end of Year 11. Students make good progress in Key Stages 3 and 4, and satisfactory progress in the sixth form. Progress is particularly good for those who previously found mathematics difficult. The progress of White British students now matches that of other ethnic groups.

- In lessons, pupils make mostly satisfactory gains in understanding, but there are other factors contributing to their good learning. These include effective assessment, good support for independent learning and a well designed curriculum, which includes very strong out-of-hours support. Students therefore acquire the knowledge and skills needed to meet their examination targets.
- The school's ethos has been transformed since my last visit in 2003 and behaviour is now outstanding. Students show high levels of motivation, work well with each other and are keen to meet their targets. They value the orderly atmosphere in lessons.

### Quality of teaching of mathematics

The quality of teaching of mathematics is satisfactory.

- The mathematics department is making good use of the Teacher Effectiveness Enhancement Programme (TEEP) to improve teaching. The best lessons use the six-part 'TEEP cycle'. Before talking about the learning objectives, the teacher sets an introductory task to promote thinking and discussion. This helps students to put forward their ideas and to understand the teacher's explanations. Students then work on exercises to consolidate and extend their learning, before reviewing what they have learnt in a plenary session.
- More often, the quality of teaching is satisfactory rather than good. Teachers have good mathematical knowledge but the lesson activities do not always help students think about mathematics in ways that might build their understanding. For example, when students have to listen passively for long periods, they do not do enough mathematics for themselves to develop their skills and understanding. Equally, when exercises are not carefully chosen, students may answer them correctly despite a critical misconception. In either case, their teachers will not have enough opportunities to diagnose their difficulties as they work.
- Students' progress over time is carefully monitored through a well-planned sequence of assessment tasks. Students are encouraged to find out where they need to improve and then to engage in extra study, either in after-school revision clubs or by using the school's virtual learning environment (VLE), which provides an independent source of explanation and practice examples. This contributes significantly to students' good achievement.

### Quality of the mathematics curriculum

The quality of the mathematics curriculum is good.

- The school offers a good range of courses to meet students' different needs, including adult numeracy and GCSE statistics qualifications. The revised Year 7 and 8 curriculum includes good opportunities for cross-curricular projects, where students develop their problem-solving skills and learn about sustainability.

- The schemes of work are now held on the school's VLE. They provide a good overview of what topics need to be covered with each class, including some applications of mathematics. The overview includes links to a more detailed level of planning, which includes references to resources and suitable assessment tasks. However, there is limited guidance on effective teaching approaches.
- Students benefit from very strong support and guidance, including an intensive revision programme to help them prepare for examinations. Many students are entered for GCSE mathematics a year earlier than usual. The main benefit is that they work harder in Year 10. A few very able students earn A or A\* grades in Year 10 and move on to more advanced work, but most early entrants re-sit the GCSE examination in Year 11 to improve their initial grades.
- The main drawback of early and repeated GCSE entry is that students have less time to develop the fluency with algebra and the deeper understanding of mathematics that would help them make good progress in advanced level courses.

#### Effectiveness of leadership and management of mathematics

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

- The mathematics department has improved markedly since my previous visit in 2003. The critical factors in raising standards in mathematics have been: a whole-school initiative to improve behaviour; the use of performance targets for individuals and groups; careful tracking of students' progress to identify underachieving students; and strong academic support and guidance.
- Mathematics and computing specialist status has played an outstanding part in transforming mathematics provision in the school. Students have access to many resources via the school's VLE, including a mathematics website which is often used for homework. The school ensures equity for students by providing laptops and broadband connections for those who would otherwise go without.
- The department has a good capacity to improve further. The improvement plan is securely based on the results of monitoring and evaluation by the senior leaders and the head of mathematics. However, small but important mathematical details are sometimes overlooked during lesson observations.

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

- Teachers have benefited from training in the TEEP model, which is used across all subjects. This has created a shared language that can be referred to when planning new lesson sequences or discussing lesson observations. However, teachers are not always sure how best to apply the training to specific mathematical topics.

- The specialist status has given the head of mathematics opportunities to work with other local schools to raise attainment. Another teacher has worked with teachers from other schools on a curriculum development programme. These experiences are bringing new ideas to the department.

Areas for improvement, which we discussed, include:

- ensuring that lesson observations take careful account of mathematical details as well as generic teaching skills
- continuing to develop teachers' expertise in:
  - selecting teaching approaches that promote conceptual understanding
  - striking a good balance between routine and challenging exercises
  - creating opportunities for diagnostic assessment
- improving progress in the sixth form by ensuring that prospective GCE students develop greater fluency with algebra during Key Stage 4.

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

Stephen Abbott  
Her Majesty's Inspector