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Mr P Jones
Headmaster
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Dear Mr Jones

Ofsted 2011–12 subject survey inspection programme: mathematics

Thank you for your hospitality and cooperation, and that of the staff and students, during my visit on 25 and 26 January 2012 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 14 lessons.

The overall effectiveness of mathematics is good.

Achievement in mathematics

Achievement in mathematics is outstanding.

- The school has very high aspirations for its students who exceed these expectations. GCSE results in 2011 showed that virtually all boys gained a grade A* to C with over half gaining a grade A or A*. One set of boys completed their GCSE at the end of Year 10 and are now working well towards completing a free standing mathematics qualification (FSMQ).
- Almost half of the students in the sixth form study A-level mathematics, with many girls and boys joining the school at the start of Year 12 because of its success at A level. Results in 2011 show standards to be high in mathematics and further mathematics.
- Attainment is so high because students develop very good attitudes to learning. Relationships between staff and students are excellent. The strong support for students when completing 'prep' in their boarding houses and freely available support from teachers ensures that students make excellent progress. Students are very pleased with the individual

support they receive and commented, 'There is always someone who is keen to help and they go the extra mile for us.'

- Sixth-form students enjoy the challenge of lessons and being constantly stretched by the work. Students in other years also have positive attitudes to their work. They make generally good progress in lessons but at times become restless when listening to long expositions before starting work. Behaviour in lessons is consistently at least good and often excellent.

Quality of teaching in mathematics

The quality of teaching in mathematics is good.

- Teaching is best in the sixth form where it is engaging and highly effective in ensuring that students make excellent progress. Staff's strong subject knowledge ensures that students develop very good mathematical understanding and develop rigour with their explanations.
- In other classes, teaching is mainly very focused and aligned to specific textbooks. Hence opportunities to incorporate a variety of different teaching activities or to give students opportunities to discuss their mathematics in groups are missed.
- Staff use questions well to develop understanding and to identify any misconceptions. They circulate while students are working and identify any who are having problems with their work. However, opportunities are missed to give greater relevance to the work and hence students do not make the connections between different aspects of mathematics or how it relates to real-life situations.
- Marking is variable in quality and quantity. It identifies any errors and gives the correct answer but offers no advice or support on how a student may improve. Opportunities are not taken to develop a learning dialogue which would support students in gaining a better understanding of their work. Some marking is infrequent and students do not then take as much pride in their work and presentation is often sloppy.

Quality of the curriculum in mathematics

The quality of the curriculum in mathematics is good.

- The curriculum ensures that students can succeed. They complete GCSE either at the end of Year 10 and then take a FSMQ, or at the end of Year 11 and are very well prepared for examinations. At A level, students can choose to study units in all aspects of mathematics, including mechanics, statistics and decision mathematics, as well as the core pure units.
- The scheme of work is clear and closely aligned to the school's textbooks. This ensures a coherent coverage of all topics. So, for example, algebra is well taught and based upon clear progression. Students make excellent progress because they have a good understanding of all elements as they become increasingly complex and difficult. The scheme includes opportunities for students to use and apply their mathematics but these are not frequent. Students rarely do practical or investigate activities.

- Staff use information and communication technology (ICT) well in lessons, for example to show how closely a binomial expansion fits the original curve as the number of terms increases. However, students have few opportunities to develop their understanding by using ICT themselves.

Effectiveness of leadership and management in mathematics

The effectiveness of leadership and management in mathematics is good.

- The subject leader has successfully ensured that the results are among the best within the school and nationally. Achievement has improved continuously over the last few years with capacity to improve further. The understanding within the department of what is needed to ensure that students achieve outstanding results is clear. However, while staff receive support, they have not been able to share the variety of teaching approaches evident within the department.
- You have a highly effective departmental review procedure, which includes analysis of examination results, inputs from students, lesson observations and an overview of students' work. On the recent review you identified the main priorities for improvement, similar to the recommendations below.

Areas for improvement, which we discussed, include:

- improving the quality of teaching and learning by ensuring that:
 - lessons get off to a purposeful start with students starting work quickly without an overlong exposition from the teacher, and incorporate a wide variety of activities, including opportunities for group work and discussion
 - lessons have greater relevance so that students understand how their work fits in with other topics or real life
 - marking consistently informs students how well they are doing, identifies errors, and informs students how to improve
- improving the curriculum by ensuring that students have opportunities to:
 - use and apply their mathematics, including practical work
 - investigate mathematics to make connections for themselves
 - use ICT to extend their understanding of key concepts.

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

Michael Smith
Her Majesty's Inspector