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Mr J Crone
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Dear Mr Crone

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 20 and 21 April 2010 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 how well the curriculum secures progression in mathematical understanding for every student.

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.

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 good.

Achievement in mathematics

Achievement in mathematics is good.

- Students join the school with standards that are low. They make very good progress to reach broadly average standards at the end of Year 11. Over half of the students in Year 11 have already gained an A* to C grade at GCSE and this proportion is expected to rise further. This improvement is impacting significantly on the key indicator of the proportion of students gaining five or more GCSE passes at grades A* to C including English and mathematics.

- In 2009, the top set completed GCSE mathematics at the end of Year 10 and then followed an AS course in Year 11. The proportion who gained an A or A* grade exceeded expectations. Some students took the examination while others used this opportunity to improve their mathematical skills before studying other subjects at A level or attending another local sixth form. This, along with the increased confidence in the subject, has meant a large increase in the proportion of students continuing to study mathematics at A level.
- Results at A level are improving and in 2009 were average at AS and A level. A small number of students are also successful with further mathematics. Students make satisfactory progress. The school is introducing improved guidance on A-level option choices to reduce the number who stop studying mathematics after AS.
- The quality of learning in lessons is generally good and sometimes excellent. It is best when lessons are planned to include greater independent work by students.
- Students say they enjoy mathematics because staff really care for them and ensure they achieve well. The behaviour observed was always good with students making a very active contribution to their learning. This is also evident in sixth-form students running mentoring sessions for other A-level students. Also, some sixth-form students, who have indicated they wish to be mathematics teachers, support and teach lessons with staff in lower year groups.

Quality of teaching of mathematics

The quality of teaching of mathematics is good.

- The excellent relationships between staff and students are very clear in lessons. Students respect their teachers and the efforts they make to ensure they achieve. This respect is reciprocated by staff towards their classes and means that students work purposefully.
- Questions are used well by teachers to identify any concerns and to check the level of understanding, making teaching points out of students' responses to rectify errors or misconceptions. In the best lessons, teachers plan opportunities for students to work collaboratively and to discuss mathematics. Staff mostly use the electronic whiteboards appropriately to support students' work but sometimes commercially prepared lessons are used without sufficient consideration.
- While much of the work covered prepares students for examinations, lessons also are effective in developing students' understanding of the concepts being covered. This is appreciated by students who commented that they like lessons which involve them in thinking about how the topic fits 'into the big picture.' Students are also keen to extend their own knowledge and some are able to explain mathematical concepts which they have not yet been taught. For example, a Year 11 student knew that a quadratic equation may have imaginary roots.

- Staff use GCSE examination questions to identify areas which need further work. Assessment is used well to ensure students make good progress and are able to build upon prior knowledge. However, work in books is not marked consistently and students are not always informed how well they are working or what they need to do to improve.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is satisfactory.

- There are many good elements to the curriculum. Schemes of work are relevant and build coherently across topics. However, at present, there are too few planned opportunities for students to use and apply their mathematics. The department is aware of this and has plans to update schemes to incorporate more opportunities.
- At present, the building work to improve the mathematics accommodation prevents the use of information and communication technology (ICT) by the department. They are looking forward to using the new facilities and introducing ICT into schemes of work.
- Students start their GCSE course in Year 9 and many take the examination early and continue to AS mathematics. This has been successful in raising the proportion of students who take A level, including a number who complete a taught further mathematics course. A group of students take statistics GCSE in Year 11.
- The school has a 'numeracy across the curriculum' group which has identified areas of mathematics which are studied in a variety of subjects.

Effectiveness of leadership and management of mathematics

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

- The subject leader has worked well to bring together departmental staff to share a clear vision and ambition to build on the very impressive improvements in raising standards for all students and improving the quality of teaching. The subject leader has used elements of the local authority's middle-leader materials to gain an accurate self-evaluation. He has an overview of the quality of teaching through observing staff and identifying areas for further improvement both individually and as a department.
- You and other members of the senior leadership team have effectively supported and challenged the department to bring about sustained improvements. The school has responded very well to the National Challenge and results show that the school should reach standards well above the government's floor target of 30% of students gaining five or more GCSE passes at grades A* to C, including English and mathematics, in 2010. This demonstrates a good capacity to continue this upward trend.

Subject issue: how well the curriculum secures progression in mathematical understanding for every student

- The department has a clear overview of how, and when, topics are introduced and on the progression routes of key areas of the subject. Informal discussions within the department often consider progression; new schemes of work are to be based upon progression of topics irrespective of the year group. Students commented that they found the coherence in the way in which they studied mathematics to be a strength of the department's work.
- Students are taught in sets. Bigger classes of higher attaining students mean more time and support can be given to individual lower attaining students who are taught in smaller groups, including some students in Years 7 and 8 who attend nurture groups.
- The school has considered the GCSE entry policy and has appropriate plans for what students in the present Year 9, who will complete modules under the present GCSE specifications, will study in Year 11.

Areas for improvement, which we discussed, include:

- improving the quality of assessment to ensure marking regularly:
 - identifies errors
 - informs students how to improve
 - ensures that students respond accordingly to comments on completion or correction of work
- building upon the schemes of work to identify more opportunities for students to:
 - use and apply mathematics in lessons
 - investigate areas of mathematics to discover relationships for themselves
 - use ICT to enhance their learning and understanding, particularly when the new resource base is completed.

I hope these observations are useful as you continue to develop mathematics in the school.

As we explained previously, a copy of this letter will be sent to your local authority and will be published on the Ofsted website under the URN for your school. It will also be available to the team for your next institutional inspection.

Yours sincerely

Michael Smith
Her Majesty's Inspector