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Mr J McAteer
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Dear Mr McAteer

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 21 and 22 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 discussions with staff and students, scrutiny of relevant documentation, analysis of students' work and observation of parts of 10 lessons.

The overall effectiveness of mathematics is good.

Achievement in mathematics

Achievement in mathematics is outstanding.

- Students' attainment in GCSE is very high. In 2009, the proportion obtaining grades A* or A rose to two thirds, including some from the lowest sets. Students also attain highly at Key Stage 3. In the sixth form, attainment at AS and A level is high and progress is good.
- In lessons, students learn well as a result of the good teaching and their excellent attitudes. They apply themselves conscientiously and take responsibility for keeping up with the required work. The strong system of support for topics they find hard or work they have missed, such as when

absent, contributes to their overall good progress. Students with special educational needs and/or disabilities make particularly good progress.

- Although students make at least the expected progress during Key Stages 3 and 4, some of those who attained GCSE grades B or A in 2009 had the potential to do even better and a few with Level 5 at Key Stage 2 did not reach GCSE grade B.
- Some students have a good understanding of the methods they use but this is not consistently the case. Others rely heavily on memorising and following rules or referring to notes. Attainment in using and applying mathematics is below that in other areas of the subject.

Quality of teaching of mathematics

The quality of teaching of mathematics is good.

- Relationships between staff and students are very good. Teachers know students extremely well and care for their individual needs. Through regular testing and some probing questions, they carefully monitor how well everyone is doing. Students attest to teachers' keenness to help them if they are stuck.
- Teaching varies in quality. There are elements which are outstanding. Most students receive consistently good or better teaching but some do not. There is an increasing amount of pair and group work.
- In the best lessons, work meets needs well and teachers use their thorough knowledge of mathematics and the students to provide closely tailored support. They select activities that illustrate concepts well, develop students' understanding and challenge them to think hard. They explain ideas clearly and involve students in purposeful group work where membership and tasks are chosen carefully.
- In the less successful elements of lessons, the key conceptual points are not brought out. Teachers spend too much time providing students with methods, leaving them little time to think about and discuss possible solutions with each other and try them out for themselves. Sometimes, work does not meet everyone's needs and teachers do not circulate to check whether it does. At times, the pace is too fast so students rush on to something else rather than developing their understanding.
- The quality of marking varies. Some is diagnostic, providing useful support to help students improve. Tests are used well to identify questions students find difficult and then provide support, although assessment focuses more on whether answers are correct, sometimes with reliance on notes or recent revision, than on the understanding of a topic.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is good.

- Students are supported very well to meet their needs through the many personalised aspects of curriculum provision. Higher attainers study for a qualification in additional mathematics and participate in mathematics challenges and master classes. Those who require extra support in

numeracy are identified early on and offered this. Students who need some extra help find the lunchtime drop-in sessions helpful. After tests on each topic, there are catch-up sessions for each aspect that students found hard.

- Students use an individual computer package for parts of classwork and homework, but some have little additional opportunity for hands-on access to information and communication technology (ICT) to explore graphs, geometry or statistics.
- The schemes of work ensure appropriate coverage of the required syllabuses and are being developed to include more opportunities for problem-solving, investigatory work and the use of mathematics in context. Helpful links are made with the mathematics used in other school subjects but there is no systematic development of the reasoning and skills necessary for using and applying mathematics. While some resources promote conceptual understanding, they are not always used.
- In the sixth form, students have a choice of statistics or mechanics within AS and A-level mathematics. The highest attainers study further mathematics, for which the take-up is small and increasing. Although several study related subjects at university, few go on to study mathematics.

Effectiveness of leadership and management of mathematics

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

- Evaluations made by senior leaders and within the department are largely accurate and have led to improvements in teaching and the curriculum. Members of the department work together well in a very supportive environment, sharing planning and good practice which have also contributed to improvements. Lessons observed jointly were judged accurately. However, monitoring of lessons and students' work is not frequent enough. It does not focus sufficiently on mathematical areas for development to ensure that all teaching is speedily raised to good or to provide all students with equivalent opportunities. Students' views are collected and analysed.
- Action plans rightly include key areas for improvement, such as developing thinking and problem-solving skills, but do not contain measurable success criteria based on impact so that all may see how they can contribute. Attainment is analysed effectively although there is room for greater emphasis on pinpointing where progress is least strong so this feeds into planning.
- Monitoring identifies those who may be falling behind their targets. This leads to effective action, with earlier follow up now being provided in Year 10. It is based on teacher assessment, which is sometimes higher than mock examination results.

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

- There are superb and timely systems for supporting students after absence or changing sets, or in the specific topics in which they experienced difficulty in tests. These include lunchtime sessions, individual support from the teacher and concurrent teaching of topics across sets.
- Most teachers know well the progression in each area of mathematics and check where students are on this continuum before planning new work.

Areas for improvement, which we discussed, include:

- raising teaching quality to that of the best through more frequent and focused monitoring and support for areas for development so that it:
 - builds understanding of concepts
 - develops thinking, reasoning and problem-solving
 - increases students' independence from teachers and notes, in working and in assessing how well work is understood
 - meets individual needs and challenges all
- adding activities and guidance to schemes of work, and monitoring their delivery, to provide all students with:
 - conceptual approaches
 - a structured development of skills for using and applying mathematics
 - opportunities to use ICT across the mathematics curriculum
- focusing planning more sharply on areas identified through evaluation, such as any less strong pockets of students' progress, with success criteria that are measurable in terms of impact.

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

Gill Close
Her Majesty's Inspector