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Dear Dr Edwards

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 7 and 8 February 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; observation of four lessons, including two undertaken jointly with staff from the academy, and eight shorter visits to lessons.

The overall effectiveness of mathematics is satisfactory.

Achievement in mathematics

Achievement in mathematics is satisfactory.

- Attainment by the end of Key Stage 4 is broadly average with little difference in boys' and girls' performance. The academy's focus on improving the proportion of students gaining GCSE A* to C grades led to a rise in 2011 to 73%, compared with the national average of 67%. The proportion achieving A or A* grades fell slightly but was close to that seen nationally. Outcomes in the sixth form are broadly average and retention rates from Year 12 into Year 13 are improving.
- Students enter the academy with broadly average attainment and make progress in line with expectations. In 2011, the proportion of students making the expected three levels of progress during their time in academy

was close to the national average. Inspection evidence confirms that current students make satisfactory progress in lessons and over time. Those with special educational needs make progress similar to their peers. They benefit from targeted support and intervention but, in lessons, tasks and activities are not always sufficiently well adapted to meet their needs.

- Students' behaviour and positive attitudes make an effective contribution to learning. Their skills in using and applying mathematics are weaker than in other aspects of the curriculum. As a result, many are less confident when tackling unfamiliar or unstructured problems.

Quality of teaching in mathematics

The quality of teaching in mathematics is satisfactory.

- Although the quality of teaching is satisfactory overall, examples of good and outstanding teaching were seen during the visit. The less effective teaching places too great an emphasis on developing students' procedural fluency on a narrow range of problems at the expense of deepening their conceptual understanding. Students have few opportunities to discuss their mathematics. Moreover, teachers' questioning does not probe understanding or misconceptions well. This approach affects the progress of lower-and middle-attaining students most, although intervention strategies and approaches to GCSE entry help to mitigate the effect.
- Higher-attaining students benefit from a deeper and more balanced approach to teaching, with greater opportunities to apply their skills in unfamiliar contexts. However, the early-entry strategy for GCSE in Year 11 prevents some from making progress fully in line with their capabilities.
- The presentation of students' work varies greatly. In too many books, poor presentation is tolerated and unchallenged by the teacher. Untidy layout or inaccurate notation detracts from the quality of learning, particularly for many higher-attaining students. Marking is similarly inconsistent in quality. In the best examples, teachers diagnose errors and provide helpful feedback. In some cases, work is self- or peer-marked by students and mistakes in notation, working or accuracy are sometimes not addressed.

Quality of the curriculum in mathematics

The quality of the curriculum in mathematics is satisfactory.

- The academy endeavours to meet the needs of different groups of students, including through the provision of targeted intervention. However, the curriculum and assessment arrangements in Key Stage 4 do not serve all groups well. For example, the structure of existing pathways for GCSE makes it difficult for some students to switch to alternative routes once they have commenced their courses in Year 9. The provision of an additional level 2 course to extend higher-attaining students in Year 11 meets the needs of those students intending to continue with mathematics in Year 12. However, the rationale for entering the highest sets for this qualification is not entirely clear, particularly given that early-entry results in GCSE mathematics represent only satisfactory progress.

- A review of existing schemes of work is underway. They currently indicate topics to be covered and provide a number of references to different resources and other materials, including in using and applying mathematics. However, they provide little guidance on how topics might be approached or assessed and do not capture teachers' existing good practice well. Little work has been done to ensure the progressive development of students' skills in using and applying mathematics.

Effectiveness of leadership and management in mathematics

The effectiveness of leadership and management in mathematics is good.

- The mathematics department is a cohesive team whose members support each other well. A commitment to raising standards has led to a rising trend in achievement. Effective actions have overcome the legacy of underachievement due to previous instabilities in staffing. Appropriate steps are being taken to extend the range of resources available to support students' conceptual understanding of mathematics.
- Self-evaluation is broadly accurate and improvement planning identifies an appropriate range of priorities, linked to better outcomes for students. However, the evaluation of provision is generous in some areas: an insufficiently wide range of evidence is considered when judging the impact of teaching on learning over a longer period.

Areas for improvement, which we discussed, include:

- improving the balance between developing students' procedural fluency and conceptual understanding by ensuring students:
  - have more opportunities to discuss their mathematics, to make links with previous learning, and to make sense of mathematics for themselves
  - encounter mathematics in greater depth through tackling a wider range of non-routine problems, and problems set in unfamiliar contexts
- improving the curriculum by:
  - completing the review of the schemes of work, ensuring that existing best practice is captured and guidance provided on assessment and teaching approaches, including for using and applying mathematics
  - clarifying assessment pathways in Key Stage 4 to ensure a sharp focus on rates of progress for all students.

I hope that these observations are useful as you continue to develop mathematics in the academy. As explained previously, a copy of this letter will be published on the Ofsted website.

Yours sincerely
Lee Northern
Her Majesty's Inspector