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Dear Mrs Anwar

Ofsted 2007-08 subject survey inspection programme: mathematics

Thank you for your hospitality and co-operation, and that of your staff, during my visit on 03 and 04 March 2008 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 made included interviews with staff and students, scrutiny of relevant documentation, analysis of students' work and observation of eight lessons.

The overall effectiveness of, the subject, mathematics was judged to be satisfactory and improving.

Achievement and standards

Achievement in mathematics is satisfactory and improving. Standards are above average.

- Students arrive at the school with standards which are above average, overall. Whilst standards at GCSE and in National Curriculum tests are also above average, students' progress has varied in recent years, partly as a consequence of some turbulence in staffing. It is now satisfactory and improving.
- Achievement of the most able is good. Results for a small group in Year 11 who entered two units at AS Level in January were outstanding; nearly two thirds attained grades A or B.

- Students' attitudes towards mathematics vary, but are generally positive. They enjoy being challenged. As one said, 'I like solving problems. You have to use your brain.' Most behave very well, although a few speak of some less motivated students being disruptive.

Quality of teaching and learning of mathematics

The quality of teaching and learning of mathematics is satisfactory.

- The quality of much of the teaching is good. Evidence from discussions with students and the school's self-evaluation indicate that the quality is improving. However, many lessons are over teacher-directed and learning is only satisfactory because students remain too passive.
- Lessons follow a common pattern, with puzzles used well as starting activities and objectives shared effectively. Although there is some good use of searching questions, much more emphasis is placed on completing routine exercises, rather than developing students' understanding. For example, in one Year 10 class, students were about to discover how to calculate the mean from a grouped frequency table, but, before they could, they were told how to do it. By contrast, in another class, students stood in groups to form a model of a frequency table and this activity helped them develop a clearer understanding of averages.
- Computer-linked whiteboards are used effectively to support teaching, but use of pre-prepared presentations sometimes limits learning. For example, in one lesson, a lively presentation showed the link between successive square numbers before students had a chance to discover it themselves. When given the opportunity, students enjoy using the whiteboards to explain their reasoning.
- Students recognise that they learn best when able to discuss their work, but in some lessons collaboration is discouraged.
- Assessment procedures are good. Progress is tracked carefully and good use is made of student self-assessment. Teachers' marking is more varied, with some giving insufficient guidance to students on what to do to improve.

Quality of the mathematics curriculum

The quality of the mathematics curriculum is satisfactory.

- Schemes of work have been introduced over the last two years, providing greater coherence to the curriculum. However, the schemes give little more than an overview of topics to be covered, linked to a commercial course. Although teachers share examples of good practice, the schemes lack guidance on approaches to teaching and references to the applications of mathematics. Students also make insufficient use of information and communication technology (ICT) such as graph-plotting packages.
- Broadening the curriculum for the more able students by entering them for GCSE in Year 10 and offering AS and A Level units in Year 11 has had mixed success. Results for those who opted for additional mathematics lessons are impressive. However, some of the others have already given up mathematics and others will only complete part of the AS-level course. As one boy said, 'I would have been better off getting an A* at GCSE this year.'
- There are good programmes of enrichment, including entry for national and local competitions. Mathematics themed days, such as on building and selling a house, provide good links with other subjects and local businesses.

Leadership and management of mathematics

The leadership and management of mathematics are good.

- As a response to difficulties in recruitment of teachers, the school adopted an innovative structure for the management of the department with an assistant headteacher as executive head of mathematics working with an associate head of department. The former plays a strategic role, whilst the latter, who is a leading mathematics teacher for Hampshire, deals with day-to-day issues in a relatively inexperienced department. They have proved an effective team and have raised achievement.
- Senior and departmental leaders have an accurate view of the strengths and weaknesses of the department's work as a result of formal reviews and regular observation of lessons. The team of staff recognise that further observations within the department would help them share good practice more effectively.

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

- Senior leaders have focussed over the last two years on developing a vision of teaching and learning and improving leadership and management within all departments. This and the innovative departmental leadership structure have helped develop an increasingly effective mathematics team.
- Funding linked to the school's specialism in mathematics and computing has been used well to provide additional teachers in Key Stage 4. This has reduced class sizes in Year 10 and allowed the curriculum for high attaining students to be broadened in Year 11. The appointment of an experienced head of department from September should enable the associate head to use her expertise in further developing the quality of teaching and learning.

Inclusion

Inclusion in mathematics is satisfactory.

- The system of grouping students by ability has become more effective with the move from eight ability groups to two parallel groups of four. However, students indicate that some are placed according to their attitudes rather than their mathematical ability.
- Tracking of students' progress is good, but intervention programmes have yet to result in a significant improvement in the achievement of students of average and below average ability.

Areas for improvement, which we discussed, included:

- raise achievement, particularly for students of average and below average ability
- continue to encourage all teachers to adopt strategies which help develop students' understanding and active engagement in their learning, including greater use of group work, investigative activities and ICT
- review the curriculum for Key Stage 4, ensuring all students are able to achieve their best possible grade at GCSE, whilst providing appropriate pathways for the highest attainers.

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 will be published on the Ofsted website. It will also be available to the team for your next institutional inspection.

Yours sincerely

David M Bain
Additional Inspector