

Alexandra House  
33 Kingsway  
London  
WC2B 6SE

T 08456 404040  
F 020 7421 6855  
[www.ofsted.gov.uk](http://www.ofsted.gov.uk)



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Mr N Willis  
Headteacher  
Wallingford School  
St George's Road  
Wallingford  
Oxfordshire  
OX10 8HH

Dear Mr Willis

Ofsted 2008-09 subject survey inspection programme: mathematics

Thank you for your hospitality and co-operation, and that of your staff, during my visit on 26-27 February 2009 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 lessons.

The overall effectiveness of the subject, mathematics, was judged to be good.

Achievement and standards

Achievement in mathematics is good and standards are above average.

- Students join the school with broadly average attainment on entry. They make good progress and reach above average standards at the end of Key Stage 4. Challenging targets are set and met.
- In 2007, standards at Key Stage 3 rose substantially to significantly above average and students made particularly strong progress. School data show that in 2008, and currently, students continue to make good progress to reach above average standards.
- During Key Stage 4, students' progress has been good in recent years and showed improvement in 2008. It is stronger for higher and middle attainers than for lower attainers. A few students with the potential to reach grade B reached

only grade C in 2007 and 2008. The school has taken steps to ameliorate this for current students through increasing flexibility in the tier of examination entry. Also, although an above average proportion of students reaches the highest grades, A\* and A, at GCSE, some pupils who could reach A\* did not do so in 2008. The school has put in place improvements that are leading to better progress for students currently in Year 11.

- In the sixth form, students make good progress and reach above average standards at A level. Their performance in 2008 represents an improvement since the previous cohort. Year 12 students did not make enough progress in 2007. The school rightly identified this as an area for development and has improved progress at AS level. Nevertheless, there are some students, mainly lower prior attainers, who are not on track to meet their targets.
- Students work hard in lessons and there is little off-task behaviour. They are confident to try new problems and to say when they do not understand.

### Quality of teaching and learning of mathematics

The quality of teaching and learning of mathematics is good.

- Teaching is good, with some that is outstanding. Staff have strong subject knowledge and several teach consistently good lessons. There is also some satisfactory teaching. Currently some teaching is by temporary staff and a teaching assistant.
- In the strongest lessons, staff know students very well and meet their individual needs, giving them challenge and support as well as raising their confidence and independence. They interact sensitively with them, listening carefully to their responses and deepening their thinking. They pose them problems that enhance their skills in using and applying mathematics, extend their reasoning and develop their mathematical communication. Well-prepared materials, including on the interactive whiteboard, provide them with motivating activities and convey concepts to them clearly.
- Many lessons use good quality activities with the potential to help students to understand the concepts and apply them in relevant contexts. Teachers use their good mathematical knowledge well to respond flexibly to students' responses and to pose additional questions. Teachers have good relationships with students and there is a purposeful working atmosphere in lessons.
- Where teaching is satisfactory rather than good, students spend too long listening to teachers, so they do not spend enough time doing substantial problems for themselves or working interactively. Teachers do not ensure that all students are involved in activities, listening or responding to questions, or that they understand the concepts underlying the methods they learn to apply. This can occur even when the activities have the potential to enhance understanding and thinking. Planning does not differentiate work and support to meet all students' needs or challenge the highest attainers in the group. Teachers do not circulate round the classroom with sufficient focus to identify where students are stuck or need additional challenge.
- Students generally note the lesson objectives in their planners but they are not consistently returned to by students or teachers. Termly assessment provides detailed feedback on areas of strength and weakness and involves students in writing self-evaluations. Students find these helpful in focusing their revision as they approach external examinations but they are not built on systematically throughout each year group. Although students have lists of content for their

GCSE modules, they do not have a clear overview of grade or National Curriculum level descriptors against which to assess their progress.

- Staff check that students do homework, but there is inconsistency in checking the accuracy of students' work. Students take responsibility for marking much of their work but too many errors go unnoticed, so opportunities are lost to show students how to improve.
- Students complete a large amount of work, and many make their own good notes to help them revise. Nevertheless, some work is unfinished or poorly presented with steps not shown appropriately. Students find it hard to deal with the very large number of loose worksheets and returned tests that are not clearly dated or organised in their books or folders, and to keep track of progress on their areas for development.

## Quality of the mathematics curriculum

The quality of the mathematics curriculum is good.

- The curriculum meets students' needs and enables them to make good progress. The department uses a range of rich activities that encourage students to think and to use and apply mathematics. However, there is no structured development of these skills or record of students' progress against them.
- The Year 7 scheme of work is a real strength. It provides good integrated activities on six themes for the year. Students enjoy these activities that are taught in mixed ability groups and involve practical work. They find the contexts realistic. In Year 8, the scheme of work is under development and is structured around themes which are more loosely linked. At Key Stage 4, staff have contributed good activities for elements of the modular syllabus.
- There is good take-up of mathematics in the sixth form where students can follow AS, A level and further mathematics courses, although there is only one combination offered, which includes statistics but not mechanics. The school has correctly identified the scheme of work as an area for development and has already introduced some more challenging problem-solving activities.
- There is some good use of information and communication technology (ICT) to demonstrate concepts and some staff use it interactively, but students have little opportunity for hands-on computer use to explore ideas for themselves.
- Drop-in support sessions for the sixth form and for GCSE are well attended.

## Leadership and management of mathematics

The leadership and management of mathematics are good.

- The strength and depth of the departmental team enables it to function effectively during the maternity leave of the curriculum leader. Staff work together very well, learning from each other and sharing resources and ideas about teaching mathematics. They quickly develop skills and take on responsibilities. Amongst them is an advanced skills teacher (AST) who is seconded temporarily to the school's leadership team.
- The good leadership and management of mathematics, at senior leadership level and within the mathematics department, have successfully raised standards and progress, whilst enhancing the professional development of staff and attracting high quality staff. Leaders have pinpointed where students are not on track to reach their targets, set higher targets where appropriate and provided

intervention to enable good progress. Tracking systems have recently been improved to provide the curriculum leader with greater opportunity to analyse progress. The department has kept a well-chosen focus on development of the curriculum to increase students' understanding and problem solving skills.

- The school's system of self-review has accurately identified strengths and weaknesses in provision. Actions have been identified to address them that have been successful in some cases, such as in raising standards and progress at Key Stage 4. Nevertheless, targets are not all expressed in terms of impact with measurable success criteria so, for example, the target 'review marking policy' last year led to the department producing helpful guidance but not to regular enough checking of accuracy and advice for students on ways to improve.
- Joint observation of lessons was accurate in identifying appropriate strengths and areas for development. There are useful pointers for improvement in earlier observations by mathematics specialists, but some other evaluations are not picking up subject-specific issues. Much teaching has improved as a result of high quality support but there is still room to improve the satisfactory teaching through a more systematic focus on areas for development and observation.

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

- The staff have brought with them from their training and experience a keenness to try out new activities and take risks, which you and other senior leaders have encouraged. This has enabled the department to flourish and attract new staff.
- The whole-school emphasis on multiple intelligences and their inclusion in performance management and action planning has helped staff to develop a wider range of teaching strategies.
- The curriculum leader and AST have worked alongside new staff to support them in developing materials and observed their lessons frequently. This has led to more interactive lessons.

Areas for improvement, which we discussed, included:

- monitoring and supporting teaching quality through more systematic identification of areas for development, to increase the proportion of good lessons, where understanding is the focus and teachers check that all are challenged and involved
- organising books, worksheets and assessment so students know whether work is correct and how to improve, and are more frequently involved in monitoring their own progress through self-assessment
- for each year group, ensuring entitlement to conceptual approaches and the development of skills in using and applying mathematics, including through ICT
- identifying impact and success criteria more sharply in action planning.

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 local Learning and Skills Council and will be published on the Ofsted website. It will also be available to the team for your next institutional inspection.

Yours sincerely

Gill Close  
Her Majesty's Inspector