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Mr Adrian Long  
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Dear Mr Long

Ofsted 2007-08 survey inspection programme – mathematics

Thank you for your hospitality and co-operation, and that of your staff, during my visit on 3 and 4 December 2007 to look at work in mathematics. As outlined in my initial letter, as well as looking at key areas of the subject, the visit had a particular focus on students' enjoyment and understanding of 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. This letter will be posted on the Ofsted website.

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 five lessons.

The overall effectiveness of the subject, mathematics, was judged to be satisfactory. It has improved and has a good capacity to improve further.

Achievement and standards

Standards are broadly average and achievement is satisfactory.

- Standards and achievement in GCSE examinations have improved over the last three years from below average to average in 2007. Students make good progress in Key Stage 4 but their progress from their starting points on joining the school is satisfactory overall because previously they had made poor progress in Key Stage 3.
- Results for mathematics GCSE in 2007 are in line with national figures. All Year 11 students were entered: 53% gained a grade C or higher, and all attained a grade. This improvement in standards at GCSE has had a marked impact on the percentage of students who gain five or more higher-level GCSE passes including

mathematics and English. This has risen from 34% in 2005, which was well below the national average to 45% in 2007 which is average.

- Few students gain the highest grades of A or A\* but this is in line with expectation from their previous results. It is an area the department is working hard to improve.
- Results of the Key Stage 3 tests remain low but achievement has improved over the last three years; students' progress is now nearly average. This is a significant improvement on previous years. Progress in lessons observed was consistently good or better.
- Students know their targets and are supported in meeting them. They are shown what needs to be done to gain the next grade but this is sometimes not sufficiently emphasised within lessons.
- Students enjoy mathematics, particularly when they are doing practical activities. They are enthusiastic and say they like mathematics because the teaching is interesting and motivating for them. As a result, behaviour is good.
- Students are often encouraged to work in groups or independently. They have opportunities to solve problems and to act as a group leader. This plays an important part in the preparation of their future economic welfare.

### Quality of teaching and learning

The quality of teaching and learning is good.

- Very good relationships between staff and students ensure students take an active part in lessons and behave well. They listen attentively when answering questions in class and cooperate well when completing practical tasks. Students are encouraged to discuss their work in groups and all are happy to contribute in lessons. Teachers' enthusiasm and good use of praise motivates students and they respond well to rewards for their good work.
- Teachers in the department work together to share teaching ideas and ensure that students have a variety of activities within lessons. Good use is made of assessment to make sure the lesson matches the needs of the students, especially given the wide range of abilities there are within each set.
- Teachers use questions well. They follow up students' responses with further questions and make sure students articulate clear reasons using correct mathematical language, thus improving their communication and reasoning skills. Lessons are quickly adapted in the light of students' responses, so that work is not needlessly repeated and further support is made available on a topic when insecurities emerge.
- Assessments are used well. Students often reflect upon their own work, and correct it, in response to comments by other students in the class.
- Interactive whiteboards are used in the majority of lessons but this is generally to project text. They are rarely used in an interactive way or to demonstrate the dynamic nature of some topics.

### Quality of the curriculum

The quality of the curriculum is satisfactory.

- Key stage 3 schemes of work identify tasks for students to follow in a coherent

way. There are a variety of activities to support students' learning. Teachers share ideas on good lessons but these are not recorded for future use.

- The school is working to improve students' mental skills but these approaches are not included within schemes of work. Published resources are used well to support teaching.
- The revised scheme for Key Stage 4 includes a coherent overview of topics and areas to be covered within each module. It lacks guidance on teaching ideas or how using and applying mathematics can be systematically taught. The department does, however, incorporate using and applying mathematics well in lessons. Effective use of practical work was observed during the inspection.
- Statistics is offered as an additional GCSE course, taught outside normal lessons, and students find this useful. The 'numeracy across the curriculum' policy is being updated. There are plans to include opportunities for the mathematics department to work with other departments on a cross-curricular project incorporating data handling as part of the school's work as a specialist humanities college.
- Other developments arising from the school's specialist status should enable the mathematics department to have more up-to-date information and communication technology (ICT) resources. At the moment, very little use is made of ICT to enhance work within mathematics, mainly because of the lack of adequate resources.

## Leadership and management

Leadership and management are satisfactory.

- You have made a great impact since your appointment as headteacher, your drive and commitment ensuring that subject leadership has strengthened and brought about significant improvements. The school has a good overview of the main strengths and areas of development within mathematics. There is a clear action plan on what to do next.
- The new subject leader quickly made an accurate appraisal of the department and is working well to improve areas, building upon the effective work of the previous subject leader. The impact of these improvements is yet to be fully embedded. However, the changes to date and the commitment and expertise of the subject leader show the department has a good capacity to improve further.
- The staff work well together and regularly support each other with activities and advice on how best to teach topics.
- Resources are scarce but are used efficiently by the department.

## Subject issue: students' enjoyment and understanding of mathematics

Students enjoy mathematics, particularly practical activities and investigations which are used well in lessons to enable students to discover relationships for themselves. Students often persevere with tasks without getting help prematurely from teachers. This perseverance supports the development of their understanding as the teaching that follows has greater meaning. For example, a group were trying to construct triangles. Although they had access to all appropriate equipment, they struggled as they could draw only two sides accurately using a pencil and ruler. When they started using compasses for the construction, the students could see why they were

necessary. This secured their understanding of how to construct accurate diagrams. They were also able to discuss why some triangles could not be constructed and why some triangles of given dimensions are unique, appreciating the implications this had for construction in the real world.

## Inclusion

Inclusion is satisfactory and improving. The department works well to ensure students are challenged at the appropriate level within sets of wide ability span. The school works well with students who transfer at times other than the start of Year 7, especially those who have changed school as a result of behavioural issues.

Areas for improvement, which we discussed, included:

- raise achievement in Key Stage 3
- ensure schemes of work consistently incorporate advice on how to teach each module and strategies for improving students' mental mathematics
- improve the use of ICT as a tool for teaching and learning.

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

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

Yours sincerely

Michael Smith  
Her Majesty's Inspector