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Mr T Campbell  
Principal  
Fullhurst Community College  
Imperial Avenue  
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Dear Mr Campbell

**Ofsted 2013–14 subject survey inspection programme: mathematics**

Thank you for your hospitality and cooperation, and that of your staff and students, during my visit on 10 and 11 June 2013 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 six lessons and shorter visits to three other lessons.

**The overall effectiveness of mathematics is good.**

**Achievement in mathematics is good.**

- Students join the school in Year 7 with attainment that is well below average. From this low base, they make good progress. Attainment in mathematics throughout the school has improved substantially over the past four years.
- Students known to be eligible for free school meals also make good progress. Starting with lower attainment than their peers on entry to the school, they achieve about one GCSE grade lower than other students. This gap is slowly closing. Students who are disabled or have special educational needs also make good progress.
- Students enjoy studying mathematics and show resilience when faced with difficult problems. For instance, students in a higher ability Year 10 set worked in groups to calculate the volume of a tennis ball. In this two-step problem, they first had to find the radius by measuring the

circumference of the ball, before calculating its volume. Students then worked with other solid shapes, measuring lengths on the exterior of the shape and performing calculations, such as with Pythagoras' theorem, to deduce internal dimensions.

- Students of lower abilities demonstrate similar resilience. Students in a Year 9 low-ability set spent time discussing in pairs how to convert a fraction to a percentage without a calculator and where the denominator was not a factor of 100. They persisted, and one group presented its strategy to the rest of the class.
- In a Year 7 class, a student explained a strategy to calculate the volume of a right-angled triangular prism to the class. His explanation was clear and used accurate vocabulary and sentence structure. On some other occasions, students were not articulate in presenting their ideas.

### **Teaching in mathematics is good.**

- Teachers use their good subject knowledge and wider skills to prepare interesting lessons and explain concepts well.
- Students experience a range of problem-solving activities. These include Year 9 classes planning a route for an aircraft to airports in the UK and returning to its starting point using realistic bearings and distances and drawing these on a proper aviation map. The routes are then checked using professional aviation software. Many problems that students meet are shorter in nature and students solve them in pairs or groups of four. In one class, for example, students considered problems such as 'which two-digit primes remain as prime numbers when their digits are reversed'. However, the degree of exposure to a wide range of interesting problems varies by teaching group.
- Teachers make good use of misconceptions. In two lessons observed, teachers gave students a group of statements as a lesson starter. The students decided in pairs which statements were true, and which contained a mathematical misconception.
- Other subjects make use of mathematics well in their teaching. In French and Italian, students play games such as 'fizz-buzz' in the target language. Each week, two new problems of general mathematical interest are set for the whole school, with a prize draw. Some teachers in other subjects also submit solutions.

### **The curriculum in mathematics is good.**

- Students have more teaching time for mathematics than is often found in secondary schools. They have four hours per week in Years 7 and 8 and five hours per week in Years 9, 10 and 11.
- Students are assessed regularly using agreed tests across year groups. These tests are used diagnostically to take note of the topics where individuals and groups of students are having difficulty. This information is used to adjust the way students are grouped in lessons for particular topics in the future so that they have work appropriate to their success

in that topic. The information is also used to plan short-term extra support for individuals or small groups with a teaching assistant.

- Students have opportunities to investigate in mathematics and to apply mathematics to real problems. They use information and communication technology in areas such as exploring transformations and the properties of straight-line graphs. However the scheme of work is not sufficiently explicit as to where these opportunities should take place. As a result, the experience of students varies between groups.
- Good links between mathematics and other subjects have resulted in clear protocols for numeracy across the curriculum, so that there is consistency, for example, in teachers' approach to drawing graphs in science and geography. Students also benefit from joint projects between the mathematics and science departments, for example in designing spinners from paper and testing the designs with experiments launching them from the school's internal balcony.

### **Leadership and management of mathematics are good.**

- The head of department and the two deputy department leaders have been effective in coaching other teachers to improve their practice. This has been instrumental in raising standards. Leaders monitor the progress of students and the quality of teaching well and plan effectively. Links with partner primary schools are close and are well focused on raising standards further.
- Teachers have good opportunities to develop their practice. Two are taking masters-level degree courses which involve them, and often the wider department, in action research on raising standards. Another teacher is taking a mathematics degree through the Open University. Teachers make good use of a local network of schools in Leicester City which arranges professional development, including an annual Saturday course. Some teachers also attend a local joint branch of the Association of Teachers of Mathematics and the Mathematical Association.

### **Areas for improvement, which we discussed, include:**

- ensuring that the scheme of work maps out clearly where practical and investigative work should take place.

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

As explained previously, this letter will be published on the Ofsted website. It may be used to inform decisions about any future inspection. A copy of this letter is also being sent to your local authority.

Yours sincerely

**Robert Barbour**  
**Her Majesty's Inspector**