

Aviation House  
125 Kingsway  
London  
WC2B 6SE

T 0300 123 1231  
F 020 7421 6855  
[enquiries@ofsted.gov.uk](mailto:enquiries@ofsted.gov.uk)  
[www.ofsted.gov.uk](http://www.ofsted.gov.uk)



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Mr J Dowler  
Headteacher  
Helsby High School  
Chester Road  
Helsby  
Frodsham  
WA6 0HY

Dear Mr Dowler

### **Ofsted 2010–11 subject survey inspection programme: mathematics**

Thank you for your hospitality and cooperation, and that of the staff and students, during my visit on 14 and 15 February 2011 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 three groups of students; scrutiny of relevant documentation; analysis of students' work; observation of nine lessons and shorter visits to five other lessons and an intervention session.

The overall effectiveness of mathematics is good.

#### **Achievement in mathematics**

Achievement in mathematics is good.

- Attainment at GCSE is high, with 70% of students gaining A\* to C grades and 26% A\* or A grades in 2010, despite around 90 students joining the school midway through Key Stage 4 when their school closed. Students consistently make good progress from their above average starting points.
- Attainment is above average at Key Stage 3 and progress is generally good. The departmental team has a tendency towards caution in assessing students' attainment, most evident in Key Stage 3 teacher assessments in 2010, and this can portray students' progress as weaker than it really is.
- The picture in the sixth form is more mixed with nearly a quarter of Year 12 students failing AS in 2010. This contributed to a low progression rate

into the second year of A level. Year 13 students achieved results a little above national averages in A-level mathematics and further mathematics.

- The quality of learning was good in most of the lessons observed. It was generally stronger in the sixth form and Key Stage 4 than in Key Stage 3. Most students present their work well mathematically, as modelled by their teachers. While they are attentive and cooperative, many are passive, in part because not all have opportunities to discuss their thinking. Their experience of proof is limited except in the sixth form. Occasionally, students' progress is slowed by insecure recall of earlier work.

### **Quality of teaching in mathematics**

The quality of teaching in mathematics is good.

- Common strengths of teaching include teachers' good subject knowledge which underpins their clear explanations, questioning and skilful building of the subject matter. In the best lessons, teachers linked new learning effectively to previous work and modelled out loud the thinking required to develop solutions.
- Relative weaknesses in the teaching include a lack of variety in the activities selected with few opportunities for discussion, practical or pair work, and an emphasis on practice of skills rather than their application to problem-solving. Time was not used consistently well, and opportunities to make teaching points were missed, for instance about the value of  $-4^2$ .
- Assessment was used effectively in many lessons, for instance in picking up emerging misconceptions. The quality of marking varies. While some is cursory, much is regular. Teachers' comments often relate to presentation or effort rather than identifying the source of errors and pointing the way forward. Similarly, students' marking of answers tends not to move learning forward.

### **Quality of the curriculum in mathematics**

The quality of the curriculum in mathematics is good.

- Schemes of work are up-to-date, including the new 'twin pair' pilot GCSE course. At Key Stage 3, the tiered schemes include useful textbook references, information and communication technology (ICT) resources, extension and investigation activities, and some tasks designed to assess students' progress. However, the difference between the two tiers does not aid their movement between sets and not all the content in the lower tier is appropriate for all the students. The majority of Key Stage 3 sets are shared by two teachers: leaders should monitor closely students' progress in these sets to ensure that good progress is maintained.
- Although the team of teachers share ideas and help each other, written guidance on approaches and practical activities might usefully supplement the schemes. Currently, departmental leaders do not know the extent to which all students experience a range of activities, including practical, problem-solving and ICT.

- Revision classes and intervention sessions make a positive contribution to students' achievement and confidence.

### **Effectiveness of leadership and management in mathematics**

Leadership and management in mathematics are good.

- This close-knit departmental team is well qualified with a mix of experience and a shared passion for the subject. The head of department is knowledgeable about current developments. Teachers' professional development is offered through informal support, attendance at courses, and through the school's systems of coaching triads and working groups.
- Students' progress is monitored against targets that are suitably ambitious at Key Stage 4. Examination results are analysed carefully and changes sometimes made, for instance to the timing of Year 12 AS units. However, data analysis is not used sufficiently to raise questions about the quality of teaching and learning or the curriculum. This means that subject leaders tend to be reactive rather than proactive in driving improvement.
- Recent whole-school changes have improved management systems and a new proforma for lesson observations has increased the emphasis on learning. Senior leaders and the head of department have a broadly accurate grasp of the quality of provision but this is informed by informal checks and teamwork rather than systematic monitoring of the quality of provision by the three subject leaders. Capacity to take this work forward, improve provision and raise achievement further is good.

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

- enriching learning by increasing opportunities for students to:
  - discuss and reason mathematically
  - solve a wide range of problems
  - use ICT as a tool for learning mathematics and to aid conceptual understanding
- establishing a broader range of systems for monitoring and evaluating provision, including by working collaboratively, and using the outcomes to secure further improvement.

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

As explained previously, a copy of 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

**Jane Jones**  
**Her Majesty's Inspector**