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Dear Mr Hullett

Ofsted 2010–11 subject survey inspection programme: science

Thank you for your hospitality and cooperation, and that of the staff and students, during my visit on 15 and 16 June 2010 to look at work in science.

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 and observation of six lessons.

The overall effectiveness of science is satisfactory.

Achievement in science

Achievement in science is satisfactory.

- In 2009, GCSE A* to C pass rates for GCSE science and additional science were below average. Girls did not do as well as boys.
- The proportion of students gaining two or more GCSE A* to C grades in science subjects declined from above average in 2008 to significantly below average in 2009.
- Analysis of students' target grades and their actual grades shows that students of Caribbean origin did well in 2009.
- Current school assessment and progress monitoring data, including the results of externally assessed module tests, indicate improving progress and attainment. The data suggest that GCSE results in science subjects in 2010 will be better than in 2009.

- In the sixth form, GCE A-level standards have improved and are broadly average. Pass rates for biology and chemistry were high in 2009, but the pass rate for physics was below average. Standards at AS level are below average and pass rates were low in 2009.
- Students made at least satisfactory progress in the lessons observed.
- Students' behaviour is good and they have good attitudes to learning. Very little off-task activity was seen. Students are attentive and interested.

Quality of teaching in science

The quality of teaching in science is satisfactory.

- Teachers have good subject knowledge. They are lively and enthusiastic and this promotes interest in science. They have good relationships with their students and often use humour well which adds to enjoyment.
- Teachers' skills in questioning techniques vary. In the best examples, teachers use directed questions which encourage students to think. However, often questions are not directed and this leads to students calling out.
- In the lessons observed, a good variety of activities was seen. Examples included card-matching activities, microscopic examination of cells, and a revision exercise using past paper questions but designed as a group quiz. However, teachers' time management is not always effective.
- Opportunities for students to undertake practical and experimental work are good. However, few opportunities exist for younger students to plan their own investigations.
- The pace in lessons is generally steady.
- Students know their individual targets and the levels they are working at. Occasionally, individual targets are not challenging enough.
- Lesson plans note individuals with particular needs but do not specify how these needs will be met. In most lessons, similar work is set for the whole class so that differentiation is by outcome.
- Information and communication technology is used effectively to enhance learning in science. Examples observed included the use of an animation to illustrate digestion.
- The marking of students' books is at least satisfactory. In some books, a useful feature is the use of letter codes to convey particular messages which saves teachers' time but ensures students receive feedback. This is not used consistently.
- Students interviewed were positive about science lessons which they enjoy, especially the practical work.
- Students are assessed regularly, for example through end-of-unit or topic tests, and progress is monitored carefully.

Quality of the curriculum in science

The quality of the curriculum in science is good.

- The range of courses at Key Stage 4 is good. It includes GCSEs in science, additional science, physics, chemistry and biology. A vocational first certificate course is also offered. Students are given sensible advice about the most suitable course. The triple science course will help to ensure that the most able students are well prepared for GCE A-level courses.
- The decision to start Key Stage 4 courses in the latter part of Year 9 is valuable in promoting triple science, which is not allocated additional curriculum time during Key Stage 4.
- The sixth-form curriculum includes GCE AS and A levels in biology, chemistry and physics. This is appropriate for more able students but does not meet the full range of needs. Some students with relatively low prior attainment are accepted on AS courses which contributes to the low pass rates.
- The school has made good use of the 'Centre of the cell' project at a local university. There have been few other enrichment activities recently because of staff shortages but there are plans to do more in the future.

Effectiveness of leadership and management in science

The effectiveness of the leadership and management in science is satisfactory.

- Senior leaders have tackled the staffing difficulties which were a significant contribution to the decline in results in 2009. The staff team is now stable with responsibilities allocated appropriately. As a result, achievement is improving.
- Self-evaluation is broadly accurate. However, it is limited in its analysis of the performance of different groups, despite the wealth of data held by the school.
- Strategies to improve the quality of teaching are beginning to have an impact. Lesson observations are used to identify both individual and generic areas for improvement which are followed up. The school's teaching and learning handbook is a succinct and useful document providing sound advice for teachers.
- The head of department manages the department effectively on a day-to-day basis. She maintains comprehensive records of students' performance and progress against individual targets is monitored thoroughly.
- Some laboratories are old fashioned and dilapidated and do not provide a modern scientific learning environment. The position of whiteboards sometimes makes them difficult to see. Displays are adequate but uninspiring.
- Leaders have acted to improve the curriculum at Key Stage 4. As a result, a range of courses meets the full spectrum of needs.

- Senior leaders' monitoring of the science department provides appropriate challenge and support. The use of standardised agendas ensures that relevant issues are discussed at appropriate times.
- Senior leaders are aware of the underachievement of girls and are actively seeking ways to raise girls' achievement.

Areas for improvement, which we discussed, include:

- continuing the school's successful strategies to improve the quality of teaching so that more of it is good
- developing more opportunities for students to plan and design their own investigations
- considering the introduction of a vocational course in the sixth form which would better meet the needs of students for whom AS and A level is an unrealistic aspiration
- improving the use of the school's comprehensive performance data in self-evaluation to include an evaluation of the performance of different groups of students.

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

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

Yours sincerely

Ruth James
Her Majesty's Inspector