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Mr T Farr
Headteacher
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Dear Mr Farr

Ofsted 2011–12 subject survey inspection programme: science

Thank you for your hospitality and cooperation, and that of the staff and students, during my visit on 3 and 4 May 2011 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 outstanding.

Achievement in science

Achievement in science is outstanding.

- The proportion of students gaining two or more GCSE A* to C grades is consistently significantly above average and has increased steadily over the last three years. Data which compare students' attainment in science GCSEs with other subjects show that students do significantly better in science subjects.
- Students' prior attainment on entry to the school is broadly average and they make outstanding progress over time reaching well above average standards by the end of Year 11. School analyses of data show that students known to be eligible for free school meals achieved very well in 2010.
- Students' behaviour in most lessons is very good. They display very good attitudes to learning, applying themselves diligently to the tasks set. They collaborate well in group activities.

Quality of teaching in science

The quality of teaching in science is good.

- The quality of teaching in the lessons observed was consistently good. Teachers have good subject knowledge and they plan carefully. Lessons have clear objectives and a strong focus on differentiated outcomes with explicit criteria for successful learning. Lessons are well structured and well paced. Students are settled quickly at the start and time is used very effectively.
- Teachers successfully create a culture that encourages students' self-belief and high aspirations. Relationships are excellent. Motivational teaching and high expectations help to boost students' self-confidence and result in students making very good progress in lessons.
- Experimental work and practical investigations are regular features of lessons which are particularly enjoyed by students. These activities are clearly linked to theory. However, some of the laboratories are dilapidated and do not provide a modern scientific learning environment.
- The lessons observed included many strong features. Teachers know their students very well and adapt their lessons to ensure that they meet the full range of needs. A wide range of interesting activities is used to engage students' interest and develop their understanding. Explanations are clear and lessons include some good opportunities for group work.
- Occasionally, weaknesses were observed in the lessons, such as too little time for one activity, lack of spatulas for one experiment which reduced accuracy and insufficient emphasis on technique in another practical activity.
- The marking of students' work is variable. In some cases, it is clearly linked to target levels or grades with specific guidance on how to improve. However, in others it is less valuable as it relies on ticks and general comments.
- Strategies to support students who are underachieving are particularly effective. Teaching assistants provide good support in lessons and teachers give freely of their time outside lessons to help individuals. The virtual learning environment has many valuable features and activities, including quizzes, which help to reinforce learning.
- Information and communication technology is used effectively. In the lessons observed, particularly good use was made of software that enabled students to select answers to multiple-choice questions. Teachers made good use of the rapid feedback to emphasise areas that students had found difficult.

Quality of the curriculum in science

The quality of the curriculum in science is outstanding.

- An excellent range of courses is offered at Key Stage 4 including GCSEs in science and additional science, physics, chemistry and biology, and a vocational course. This ensures that all students have opportunities to achieve very well in science.
- The Key Stage 3 curriculum has been revised to include a stronger emphasis on the skills of scientific enquiry. This is promoting students' engagement and enjoyment of the subject very effectively and encouraging the uptake of three separate science subjects at GCSE.
- Enrichment activities are excellent and are relevant to science including trips, visits and speakers. Some of these activities link with technology in keeping with the school's specialist status. The school has also developed a link with a local scientific industry which helps students to see the applications of science in practice.

Effectiveness of leadership and management in science

The effectiveness of leadership and management in science is outstanding.

- The leadership of the department is extremely effective. The senior leadership team provides a positive environment and supportive framework for the development of the subject.
- Self-evaluation is accurate and appropriately focused. The curriculum is reviewed regularly to ensure that the provision meets the needs of students of different abilities and aptitudes.
- The department has a strong culture of improvement and raising achievement which has resulted in rising standards over a number of years. Teamwork is particularly effective; teachers are keen to learn from each other and to share good practice.
- At senior leadership and departmental level, considerable emphasis is given to improving the quality of teaching and learning. Opportunities for professional development both within the school and externally are very good and include leadership development, and subject specialist training in physics for non-specialists.
- The tracking and monitoring of students' progress are thorough and enable underachievement to be identified quickly with interventions put in place to address this.

Areas for improvement, which we discussed, include:

- continuing the school's work to drive up the quality of teaching so that more lessons are outstanding
- improving the quality of marking to ensure that focus is more consistent on target grades or levels and guiding students' improvement

- seeking opportunities to improve the older laboratories in order to provide a more modern scientific learning environment.

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 published on the Ofsted website. It may be used to inform decisions about any future inspection. Except in the case of academies, a copy of this letter is also being sent to your local authority.

Yours sincerely

Ruth James
Her Majesty's Inspector