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16 November 2012

Mr S Casey
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Dear Mr Casey

Ofsted 2012–13 subject survey inspection programme: Science

Thank you for your hospitality and cooperation, and that of your staff and students, during my visit on 12 November 2012 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 five lessons.

The overall effectiveness of science requires improvement.

Achievement in science

Achievement in science requires improvement.

- Students arrive in Year 7 with academic standards that are, typically, broadly average. They make reasonable progress through Key Stage 3. Students who follow the separate science courses in Key Stage 4 made good progress and attained above average standards in 2011. The majority of pupils, however, do not make good enough progress in core science, or in the additional applied science option of 2011.
- In 2012, students in the separate science maintained good progress and above average standards, although a smaller proportion of the cohort than in 2011 followed that route. Most students attained broadly average standards in core and additional science, representing no better than reasonable achievement. There are no significant differences in the progress of different groups of students.

- Sixth form attainment in science is average overall, representing nationally average progress in most science courses. The school's admission criteria allow students to begin AS level science with grade "C" GCSE's in science. Some students said that the increased demand of AS level came as a surprise to them.
- In 2011 there was a substantial and welcome increase in the numbers of students starting AS Level science courses. About one in five of the sixth form students are international students spending a year in England. Their departure at the end of Year 12 accounts in part for the apparently low proportion of students progressing from to A2 science courses.
- Students enjoy science lessons all through the school. They particularly like working in groups, reflecting a school-wide approach to raise the quality of collaborative learning. Practical work is a strong component in enhancing these skills.

Quality of teaching in science

The quality of teaching in science requires improvement.

- The best lessons feature demanding and interesting science experiments and demonstrations from the outset. Teachers use their subject expertise to extend students learning, through skilful questioning that challenge individual students to think and reflect upon the content of the lesson.
- Where teaching requires improvement, teachers control the pace of the lesson too tightly. This prevents students from thinking through ideas for themselves, so that all they need to do is follow the instructions step by step. For some students this is too easy, leading to off-task activities that results in teachers deploying behaviour management strategies.
- Sometimes tasks do not add to the learning already grasped by students, resulting in time being wasted on mundane activities.
- Routine marking of science work accurately identifies strengths and areas for students to improve. Students are not yet in the habit of responding directly to this advice, however, in all classes.

Quality of the curriculum in science

The quality of the curriculum in science is good.

- School leaders responded to the disappointing performance of students following the applied science route by changing this to 'additional science' GCSE for most students. A small group of students now take a vocational course. These changes ensure that all students have access to an effective science qualification through to Key Stage 4.
- The Key Stage 3 schemes of work place demanding practical investigations at the heart of each lesson. This good emphasis on scientific enquiry continues through Key Stage 4 and is a major factor behind the increasing uptake of science in the sixth form.

- The academic demand in science is high, from the outset of Key Stage 3, with high standards expected by teachers in terms of literacy and numeracy work in science.
- Until recently, science trips and visits have been aimed at older students. Senior leaders are planning to re-institute Key Stage 3 science-related trips. There are a good range of additional support and revision sessions.

Effectiveness of leadership in, and management of, science

The effectiveness of leadership in, and management of, science requires improvement.

- Major changes to science staffing took place during the academic year 2011-12. At the start of September 2012, four of the six full-time science teachers were newly appointed, and two are newly qualified. The staffing turbulence impacted on planned improvements to student progress in the new additional science course. Standards were maintained in triple science, and the sixth form, thanks to the responsible actions of the remaining science staff alongside senior leadership support.
- Subject and senior leaders track student progress carefully although the department did not have the capacity to intervene to make sure students in all years made good progress, and necessarily focussed on Year 11 and Year 13. Further intervention is planned to deal with a legacy of weak coursework performance amongst the current Year 11 students.
- Newly arrived teachers appreciate the support and advice from the acting head of science and second in science. Senior leaders maintain regular formal and informal supportive meetings with subject leaders.
- Staff development has focussed on training for new examination courses. Technical support staff keep up to date with health and safety developments via the local authority and regional science learning centre.

Areas for improvement, which we discussed, include:

- improving the achievement of students following core and additional science courses
- securing the capacity of the department to identify then tackle underachievement across all year groups
- improving the quality of teaching by ensuring students have sufficient time to think about and tackle challenging and relevant tasks independently
- reviewing the advice and guidance offered to potential A level science students to ensure they choose courses that enhance their long-term career aspirations.

I hope that these observations are useful as you continue to develop science 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

Brian Cartwright
Her Majesty's Inspector