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Mr M Carney
Headteacher
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Dear Mr Carney

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 8 and 9 November 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 eight lessons and a sixth form biology ethics debate.

The overall effectiveness of science is good.

Achievement in science

Achievement in science is good.

- Attainment at Key Stage 4 is rising rapidly and is above average, because almost all groups of students, irrespective of their backgrounds, make good progress in all of the science courses that they follow.
- Attainment in sixth form courses varies between biology, chemistry and physics; progress in biology has been good in recent years, and satisfactory in physics although chemistry results were lower than expected in 2011.
- Students of all ages enjoy science lessons, and in particular have found the recently introduced extended homework projects worthwhile and motivating. Sixth-form students are pleased with their choice of courses and most are considering future careers connected to science.

Quality of teaching in science

The quality of teaching in science is good.

- In almost every lesson, students were assigned tasks matched to their abilities and prior knowledge, including in some sixth form lessons; where that academic demand was high, teaching and learning were outstanding. This ensures that every student is able to make at least good, and sometimes outstanding progress from the outset.
- This strong element of personalisation also applies to marking of day-to-day work, which gives individual students direct advice on how to improve their science work; most students respond to this well and all say this helps them to know how well they are doing.
- Where teaching was satisfactory, students of all abilities tackled the same task and learning slowed to the pace set by the teacher, allowing some students scope for off-task activities. In one example, it was difficult for students to relate the practical activity to the bigger picture of properties of materials.
- Science investigations and illustrative practical experiments are used well throughout the school to teach the scientific method, and also to help students visualise models and theories.

Quality of the curriculum in science

The quality of the curriculum in science is good.

- The curriculum is responsive to students' needs and aspirations, and is adjusting to accommodate more students on triple science routes, with less following the BTEC applied science course. It means almost every student is happy with their course of study up to Key Stage 4.
- The cognitive demand of Key Stage 3 science is high, ensuring that students at an early age have opportunities to tackle the big ideas in science, with teachers encouraged to let them explore their own questions.
- The sixth form curriculum conventionally offers the three separate sciences, although the proportion of students completing AS science then progressing to A2 courses has been disappointing at around 70%. Changes to sixth form admission criteria appear to have improved this in the current Year 13 cohort.
- The department recognises that extra-curricular science activities have been limited in recent years as they focused on raising GCSE standards. Within lessons, teachers take opportunities to connect the work with wider applications, or ethical issues, and two very good examples were seen during this visit.

Effectiveness of leadership and management in science

The effectiveness of leadership and management in science is good.

- The department explicitly sets out to include spiritual, moral, social and cultural experiences related to science, as it works to ensure that young people come to be good stewards of the natural world that God has created.
- Self-evaluation of strengths and weaknesses in the faculty is accurate and effective in identifying what needs to be done to improve outcomes for all students and has already brought about rapid improvements at Key Stage 4. It has resulted in improvements to teaching quality, changes to the curriculum and better information, advice and guidance to students contemplating science courses post-16.
- Professional development opportunities include action research projects, alongside training to deliver new examination courses. Local partnerships with other providers are also helpful in maintaining exchanges of good ideas and practice, including information of technical support staff.

Areas for improvement, which we discussed, include:

- ensuring that all lessons engage students with activities that challenge and motivate them from the outset, matching the best practice already commonplace in the faculty in explaining to students the purpose of the activity.
- planning, in conjunction with other departments, a systematic approach to trips, visits and visitors over time to ensure that students experience the application of science in the wider world.

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