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Mr J Donnelly
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Dear Mr Donnelly

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 with Brian Cartwright HMI on 24 January 2013 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; scrutiny of relevant documentation; analysis of students' work; an interview the Chair and Vice-Chair of the Governing Body; and observation of two lessons.

The overall effectiveness of science is good.

Achievement in science

Achievement in science is good

- Students make good progress in science in relation to their starting points and to the difficulties they have due to their special educational needs and challenging behaviours. Students' oral contributions in lessons often demonstrate keen insights and understanding of science.
- Attainment is below average. Poor reading and writing skills inhibit attainment in science for many. However, a high proportion of Year 11 students in recent years have achieved a pass in GCSE science in the range D to G. The trend in attainment at the end of Key Stages 3 and 4 is upwards. This year, a Year 11 student is on course to achieve a grade C pass in GCSE science.

- The school's evidence indicates that students who are registered with the school from Year 7 make better progress and attain higher standards in science than those who arrive mid-way through their secondary school careers. Evidence also suggests that residential students make better progress than day students.
- Students' skills in literacy are improved by their writing in science. Pieces of good, extended writing were seen in students' science exercise books. In lessons, students are often precise in their use of the language of science.
- Students' personal development in science lessons was mixed. Several students were clearly unsettled by the presence of inspectors and this negatively affected their attitudes to the lessons. On the other hand, several students worked diligently writing up research and cooperated well with other students in undertaking experiments.

Quality of teaching in science

The quality of teaching in science is good

- The science teacher has good subject knowledge across the separate disciplines of biology, chemistry and physics.
- Expectations of students are high. Work is set at the same level of challenge as that in mainstream schools. Lessons include practical work that makes clear demands of students' interpersonal skills.
- Teaching demonstrates resilience and patience when students behave inappropriately, maintaining a clear focus on learning science and praising good behaviour. The teacher was well supported by a teaching assistant and a laboratory technician, who supported individual students effectively.
- Work to improve literacy is a focus for the school. Science lessons support the development of reading and writing well.
- Lessons engage the interests of students to an extent. Science lessons are introduced within a context familiar to the students. For example, in a Year 8 lesson that included work on dissolving, the everyday practice of dissolving sugar in tea was used skilfully to challenge students as to whether mass of the sugar was preserved within the solution, as it was no longer visible. Generally, however, students' interests and enthusiasms are not sufficiently taken into account in planning lessons in order to increase the students' motivation.

Quality of the curriculum in science

The quality of the curriculum in science is good

- The science curriculum is rigorously based on the National Curriculum at Key Stage 3 and on the GCSE requirements at Key Stage 4. Students are therefore exposed to a curriculum that is demanding in its academic content. The school does not teach vocational science. This is taught later, in college.

- Science is approached in different ways in different years. In Year 7, science is taught in cross-curricular way, in a manner favoured by many primary schools. These lessons are taught by a teacher with a primary teaching background. In Years 8 to 11, science is taught along traditional secondary school lines by a science specialist, with the focus in Years 10 and 11 on preparation for GCSE examinations.
- Lessons are rich in opportunities to work on practical investigations. This particularly suits the way the boys prefer to learn. Risk and health and safety are managed well by staff during lessons.
- Learning in other subjects and aspects is built effectively into science-based lessons where possible. This is most evident in Year 7, although literacy is promoted in all years. Provision for design technology is limited to food technology and there is restricted provision in the humanities. As a consequence, the opportunities to show the importance of science in a wider context are limited.
- Enrichment in science is good, despite the limitations that result from a rigid transport timetable for the students at the beginning and end of each school day. For example, students have enjoyed making and firing rockets as part of National Science Week and making working models of lighthouses with the input of a local organisation for the promotion of science and technology.

Effectiveness of leadership in, and management of, science

The effectiveness of leadership in, and management of, science is good

- Science is well-led. The subject leader is knowledgeable and enthusiastic about science. The profile of science within the school has been raised and standards are improving.
- There have been considerable recent changes, internally and externally. Internally, the move to a primary-based approach to teaching and learning has required a re-think of the science curriculum to ensure that content is covered within a thematic approach to learning. Externally, changes to examinations at GCSE have required a fresh look at what is taught. Both developments have been managed well.
- The science leader plays a pivotal role in partnerships with local schools to learn from others. These include mainstream and special school science departments. This degree of looking outwards to develop profession links is a further sign of good leadership of the subject.
- The science leader receives good support and challenge from senior leaders and from governors. There is support for the importance of science as a core subject, rigorously taught. There is challenge through the oversight of teaching quality and thorough tracking and evaluation of the progress students make in science. A governor with a background in science has a regular programme of observations to make and so has a first-hand knowledge of the teaching and learning of science within the school.

Areas for improvement, which we discussed, include:

- increasing the students ownership of and responsibility for learning by giving them a bigger say in questions they would like to investigate within a science course of study
- continue to teach important core skills in literacy in science, as these continue to inhibit achievement in science.

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.

Yours sincerely

Brian Padgett
Her Majesty's Inspector