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2 March 2012

Ms C Barr
Principal
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Dear Ms Barr

Ofsted 2011–12 subject survey inspection programme: science

Thank you for your hospitality and cooperation, and that of your staff and students, during my visit with Trevor Riddiough HMI on 22 and 23 February 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, including the Chief Executive and other staff from the Barnfield federation, and students; scrutiny of relevant documentation; analysis of students' work; and observation of 19 lessons.

The overall effectiveness of science is good.

Achievement in science

Achievement in science is good.

- The average attainment of students when they enter the school has been below average. In GCSE examinations last year, students achieved very well in GCSE applied science, but performance for the majority of students in other science courses was below average. Because of improving teaching quality, and a robust programme of revision sessions, current Year 11 students are doing well. The work of students in other years also consistently shows improving attainment over time.
- Student progress in the new sixth form courses appears satisfactory at this early stage, and varies between different post-16 science pathways.

- In previous years, some GCSE science courses were limited in curriculum time but currently students do have sufficient time to reach their potential in science.
- For a few students, college courses or other trips off-site means they miss some science lessons, which may hamper their learning over time.
- Students enjoy science lessons, and appreciate the extra support that the school makes available. They know how well they are progressing, with frequent feedback from teachers helping to inform their next steps.
- Students behave very well in lessons. They arrive promptly at the start of lessons with full uniform worn smartly. Occasional signs of restlessness occur while waiting for activities to begin.

Quality of teaching in science

The quality of teaching in science is good.

- Teaching quality is rigorously monitored by science leaders and the Federation's quality assurance team. Consistent expectations for lesson planning and lesson structure have helped in bringing about improvements. The majority of lessons seen were good or better.
- The best teaching brings about full participation of every student at a challenging level matched to their ability. Hardly any time is wasted in getting students started on practical or research activities, and the good information and communication technology (ICT) resource of the academy is used by students and staff to enhance learning. Staff use their science expertise well to help illustrate the concepts with anecdote and exemplars.
- Good science teaching maximises students' experience of the scientific phenomena. The academy's science teachers want to teach this way. Sometimes, however, they spend too long in activities, such as whole-class discourse, or over-long sessions where students feedback findings to the class, that do not engage every student, particularly the more able.
- In the best lessons, teachers constantly move between working groups of students, asking them personalised questions to deepen their learning. This gives them good information of how well each student is progressing and obviates the need for extended whole-class summary feedback.
- Marking is consistently done, usually containing next steps for students to follow, but occasionally giving generic advice such as 'revise more'. Where literacy errors are noted, students are not consistently correcting them.

Quality of the curriculum in science

The quality of the curriculum in science is good.

- The academy is continuously evolving its science curriculum to better meet the differing learning needs of students. Adjustments in the teaching time for different science pathways and changes to starting GCSE courses in Year 9 are helping to maximise student outcomes. The vocational pathway is particularly effective, and includes post-16 courses that build upon all of

the Key Stage 4 courses. The academy federation allows considerable flexibility here.

- An important contribution to the overall effectiveness of science is the numerous additional activities available for students. These include revision classes, science clubs, trips, visits, and visitors including professional scientists.
- Not all science lessons take place in science laboratories, and this is a current limitation to curriculum provision, as it restricts practical opportunities for students and staff. The academy is planning to fully develop some classrooms into science laboratories.

Effectiveness of leadership and management in science

The effectiveness of leadership and management in science is outstanding.

- Exceptional strategic vision linked to a deep conviction to challenge disadvantage and underachievement runs across the federation and is the reason the academy was formed. Staff at all levels in science share that conviction and are working hard to deliver good outcomes.
- Staff development is a strength, underpinned by detailed quality assurance systems that lead to bespoke training packages. The academy uses its own federated resources, or funds external providers if necessary, to meet needs well.
- Teachers have good access to subject knowledge-enhancement courses, or middle-leadership training.

Areas for improvement, which we discussed, include:

- accelerating student progress in sixth form science courses to match the good main school achievement
- planning lessons to maximise student access to the science phenomena directly, without distraction from superfluous whole-class discussion, unnecessary interruption of students already engrossed in their learning, or extended recapitulations and review.
- consistently addressing the learning needs of more able students in all lessons by assigning them challenging activities from the outset of lessons.

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 Cartwright
Her Majesty's Inspector