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Mr T Hammond
Headteacher
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Dear Mr Hammond

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 5 and 6 February 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, governors and students; scrutiny of relevant documentation; analysis of students' work; and observation of eight lessons of eight teachers.

The overall effectiveness of science is outstanding.

Achievement in science

Achievement in science is outstanding.

- Students begin Year 7 with above average academic standards and then make consistently better than expected progress in each year, resulting in well above average standards in science at the end of Key Stage 4. Boys and girls achieve exceptionally well, as do students in receipt of the Pupil Premium. Disabled pupils and those who have special educational needs achieve equally well and above the expected level for all pupils nationally.
- Students benefit from, and very much appreciate the commitment of staff in ensuring the best possible results. The dialogue between students and staff is good humoured, confident and allows students to explain in their own words the scientific concepts behind their experiments.
- Sixth form standards are also high, with outstanding progress evident across the full range of starting grades. Over half the sixth form students

study at least one science, and about a quarter move successfully onto a science degree.

- Practical work features regularly. Students can remember many of these as stimulating further interest in science, leading to a deeper understanding and the satisfaction of 'getting it'; this is a critical factor behind the high standards achieved across the school, and the high take-up of science at advanced level.

Quality of teaching in science

The quality of teaching in science is outstanding.

- Lessons are carefully planned, and contain a rich variety of resources, and activities that challenge and stretch students well, particularly more able students. The deep subject expertise of staff allows extension work beyond the confines of the formal schemes of work, which further develops students' interest.
- The very best teaching gives students time to reflect on challenging questions, and further investigate their own ideas; very occasionally teachers over control learning by setting short, time-limited activities that did not give every student the chance to find out the science idea for themselves.
- Teachers are adept at assessing each student's learning as the lesson proceeds, which allows them to adjust the task at a personal level. Teachers listen well, and then ask open-ended questions that help students to develop their scientific literacy as they attempt explanations.
- Marking of day to day work is regular, although the detail and usefulness of written feedback can vary between classes; there are some excellent examples where students have been required to extend their learning, or make corrections.

Quality of the curriculum in science

The quality of the curriculum in science is outstanding.

- The science courses at Key Stage 4 are under continuous review, with current students following triple science, or the core plus additional route. The school limits the total number of GCSE courses to ensure high standards, whilst retaining sufficient breadth of study. In the sixth form, some students can study A-Level applied science as well as separate science A levels.
- At Key Stage 3, time is slightly constrained, both by the teaching time, and starting Key Stage 4 courses during Year 9. This risks compromising the time needed for students to develop their own investigative science skills, but there is no evidence of this occurring at present.
- All Year 12 sixth form students also study for the Extended Project Qualification; this approach enhances their study skills and ability to research information, and greatly benefits science.

- There are a good number of science based trips, and additional science classes operating at lunch time, which are popular. There are good opportunities to develop local links with science, technology, engineering and mathematics professionals (STEM subject ambassadors). The school has very good links with Birmingham University that allow frequent visits to specialist facilities and expertise.

Effectiveness of leadership in, and management of, science

The effectiveness of leadership in, and management of, science is outstanding.

- Excellent monitoring, evaluation and subsequent action is taking place at all levels. This collegiate, supportive, and good humoured leadership over time is responsible for the continuously improving achievement of students. That review informs curriculum content, staff professional development, and intervention in support of any students falling behind.
- The faculty leader has a clear vision for discovery-based science learning by students, shared by her subject coordinators, and supported by school senior leaders. The coaching model of staff development is 'freeing up teachers' by giving them 'permission to innovate'; that is clearly evident in the best lessons, once teachers' own misconceptions about a preferred 'Ofsted' lesson plan have been overcome.
- Good external training, including work with the National Science Learning Centre, has improved the understanding of what makes for good science teaching. It also ensures good technician training, which in turn ensures high levels of practical work, frequently, across all classes.

Areas for improvement, which we discussed, include:

- improving the consistency and quality of feedback to students on what to do to improve their work, and ensuring that students respond.

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