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Mr Kennedy
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Dear Mr Kennedy

Ofsted survey inspection programme – Science

Thank you for your hospitality and co-operation, and that of your staff, during my visit on 22-23 November 2006 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. All feedback letters will be published on the Ofsted website at the end of each half-term.

The evidence used to inform the judgements made included: interviews with staff and pupils, scrutiny of relevant documentation, analysis of pupils' work and observation of lessons.

The overall effectiveness of science was judged to be satisfactory.

Achievement and standards

Achievement and standards in science are satisfactory.

- Achievement is satisfactory overall, and it is good in Key Stage 4 with pupils reaching above average standards. Overall progress from Key Stage 2 to Key Stage 4 is improved.
- In Key Stage 3 achievement is satisfactory and has improved from being unsatisfactory over recent years. However the highest attaining pupils still do not reach high enough standards.
- Pupils have secure knowledge of the subject and in Key Stage 4 their knowledge is often good.
- Despite good knowledge, pupils frequently cannot explain what they know and understand clearly and accurately, so giving a false impression of their understanding. This is also often true of their individual writing. This limits

how well some pupils perform, particularly the highest attaining pupils at Key Stage 3, and also of some other pupils at Key Stage 4.

- Students make satisfactory progress in the sixth form and some make good progress. However, students do not always explain their understanding confidently or clearly.
- Pupils' personal development is good. They enjoy science. They carry out experimental work sensibly and carry out instructions carefully, when they understand them. They work well together in groups and have good attitudes to the subject.

Quality of teaching and learning of Science

The quality of teaching and learning in science is satisfactory.

- Teachers have good subject knowledge and usually plan lessons well. The quality of information they give pupils is very good and aids pupils' acquisition of good factual knowledge.
- The work planned for lessons is usually challenging and matched to the needs of all pupils.
- Occasionally too little time is spent on ensuring pupils understand what they are trying to find out in practical work or in summarising the main learning points at the end of lessons.
- In the best lessons, teachers use searching questions and provide opportunities to encourage pupils to discuss and explain their knowledge and to apply it to problems or unfamiliar situations.
- However, in many lessons, there are too few opportunities for pupils to answer questions and to engage in discussions that ensure that they explain their knowledge and understanding. While questioning is frequently seen in lessons, it depends on pupils' memory and recall of factual information. It does not make them think about science.
- Similarly there are too few opportunities for pupils to write independently in a way that helps them develop the ability to accurately explain their knowledge and understanding.
- Where teaching is unsatisfactory, practical instructions are not clear, the pace of work is slow, management of pupils' behaviour is inadequate and pupils do not grasp the main points being taught by the end of the lesson.
- Sixth form teaching is good and teachers provide a high level of support for students. However, as in the rest of the school, opportunities to help students improve their speaking and writing skills are limited.
- Where teaching is unsatisfactory and in some otherwise satisfactory lessons, safety instructions are not clear enough and pupils do not always follow safety instructions rigorously.

Quality of curriculum

The quality of the curriculum is satisfactory.

- National Curriculum requirements are met and schemes of work indicate full coverage.
- The curriculum currently does not fully meet the needs of the highest attaining pupils at Key Stage 4. Plans to address this from September 2007 are advanced.
- The use of information and communication technology is underdeveloped, despite the fact that the faculty has access to computers.
- Schemes of work indicate efforts to incorporate the principles and approaches of investigative science to all aspects of the subject. However, progress in this area has been too slow and investigative work remains too structured, not enabling pupils to carry out their own investigations or to be able to predict or deal with 'fair-testing' ideas as well as might be expected.
- There are good links with primary schools, and good business and commerce links, established and developed as part of the school's status as a specialist science college.

Leadership and management of science

Leadership and management of science are satisfactory.

- The faculty recognises its own strengths and weaknesses and there has been an effective focus on raising standards at GCSE and in the sixth form, but not at Key Stage 3.
- While identifying many areas that need to be improved, the pace of change is too slow, particularly in addressing underachievement at Key Stage 3. In addition, identified weaknesses in using ICT, poor literacy, pupils' lack of familiarity and confidence with science investigations have not been dealt with fast enough.
- Resources for practical work are well managed. Overall the accommodation is good and includes attractive display material. One laboratory is in a slightly dilapidated and untidy state and not conducive to pupils enjoying their learning.
- Implementation of faculty policy on safe practice in laboratories has been inconsistent and not effectively monitored.
- The status of Specialist Science College has had little impact on the rest of the school.
- Involvement in training initiatives is satisfactory overall and has led to improvements in managing some pupils' poor behaviour, the planning of lessons and, more slowly, the teaching of investigative science.

Inclusion

The provision for inclusion is satisfactory.

- Currently the needs of highest attaining pupils are not fully met but plans are firmly in place for 2007 to provide alternative routes to GCSE for some pupils, thus meeting the needs of all pupils in Key Stage 4.
- School has dealt with, and continues to deal with, boy-girl differences.
- The highest attaining pupils at Key Stage 3 are not stretched sufficiently, but (belatedly) the faculty is attempting to deal with this.

Areas for improvement, which we discussed, included:

- raising standards, especially at Key Stage 3 but also elsewhere in the school, by providing increased opportunities for pupils and students to discuss and write about the science they learn so that they do so with confidence and accuracy
- ensuring that teachers consistently start lessons by making sure pupils are fully aware of what they are learning, and at the end of lessons checking that pupils do not have misunderstandings so that they leave lessons with a clear grasp of the main points they are supposed to have learned
- increasing the pace of efforts to incorporate ICT in lessons and to include investigative approaches and principles into all aspects of science
- implementing plans for teaching science courses matched to the needs of all pupils, particularly the highest attaining pupils at Key Stage 4
- rigorously implementing the faculty's health and safety procedures and monitor lessons to ensure that all pupils, without exception, follow safety guidance
- re-examining the school's bid to become a specialist science college to identify how science can contribute to raising standards throughout the school.

I hope these observations are useful as you continue to develop science in the school.

As I explained in my previous letter, a copy of this letter will be sent to your local authority and will be published on Ofsted's website. It will also be available to the team for your next institutional inspection.

Yours sincerely

Ted Wheatley
Additional Inspector