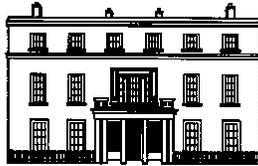


**An Roinn Oideachais agus Scileanna**  
**Department of Education and Skills**

**Subject Inspection of Science and Chemistry**  
**REPORT**

**Midleton College**  
**Midleton, County Cork**  
**Roll number: 62370J**

**Date of inspection: 13 April 2016**



**AN ROINN | DEPARTMENT OF**  
**OIDEACHAIS | EDUCATION**  
**AGUS SCILEANNA | AND SKILLS**

**REPORT  
ON  
THE QUALITY OF LEARNING AND TEACHING IN SCIENCE AND CHEMISTRY**

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**INFORMATION ON THE INSPECTION**

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| <b>Dates of inspection</b>  | 12 and 13 April 2016   |
| <b>Inspection activities undertaken</b> <ul style="list-style-type: none"><li>• Review of relevant documents</li><li>• Discussion with principal and teachers</li><li>• Interaction with students</li></ul> | <ul style="list-style-type: none"><li>• Observation of teaching and learning during eight class periods</li><li>• Examination of students' work</li><li>• Feedback to principal and teachers</li></ul> |

**MAIN FINDINGS**

- Overall, the quality of teaching and learning observed during the evaluation was very good, in the very positive learning environment that pertained in science classrooms.
- Active learning formed the kernel of all lessons observed during the evaluation.
- The level of provision for co-curricular and extracurricular activities in the sciences is wide-ranging and very good
- School management is very supportive of the sciences in the school.
- Very good levels of teacher planning and preparation were noted during the inspection.

**MAIN RECOMMENDATIONS**

- It is recommended that learning intentions be shared with students at the outset of lessons and that these would be revisited during and at the end of lessons in order to assist students in their self-assessment of learning.
  - It is recommended that an investigative approach be used to a greater extent to promote student learning and practical work in Science.
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## **INTRODUCTION**

Midleton College is a Church of Ireland, co-educational, day and boarding school with an enrolment of 413 students. The college offers the Junior Certificate, Transition Year (TY) and Leaving Certificate programmes to its students.

## **TEACHING AND LEARNING**

- Overall, the quality of teaching and learning observed during the evaluation was very good. Lessons were characterised by positive teacher-student rapport, very high standards of student behaviour and attention, and in many cases, relaxed and light-hearted interactions.
- Lesson aims and objectives were presented in a clear manner. It is recommended that these be shared with students in the form of learning intentions, as this approach would provide students with a very clear understanding of what they were to learn during the lesson. Students could then revisit the learning intentions during and at the end of lessons in order to assist in their self-assessment of learning.
- Lessons were well structured and the pace was very good in most lessons. Links to previous learning were used effectively in all lessons.
- Active learning formed the kernel of all lessons observed during the evaluation. This was mainly achieved through student practical work, though occasionally students completed written activities.
- Some effective use of a problem-solving and investigative approach was observed in some lessons. Notwithstanding that, it is recommended that an increased investigative approach be taken to student learning and practical work in Science. This could involve asking students to predict the answer to a particular problem, to suggest and plan how they might find out the answer to the problem, to implement the planned investigative activities and to draw conclusions.
- It was clear that students' practical skills develop as they progress through the school. Students worked well and safely together in practical lessons and were interested and engaged in completing tasks assigned both in practical and theoretical lessons.
- On occasion it was recommended that some degree of collaborative strategies be used. Strategies such as 'think-pair-share' could support questioning. In another instance, at the outset of a lesson, student collaborative development of a mind map was recommended as a means of student identification and self assessment of previous learning. This mind map could then be used as a baseline for progressing student learning. Extended use of such a strategy is worth considering.
- Questioning strategies were employed by teachers both to assess the levels of student knowledge and learning and to develop lesson content. Questioning was particularly effective when a combination of lower-order and higher-order questions was used, an approach that is strongly encouraged.
- Classroom atmosphere was very positive and interpersonal relations were very good. Student contributions were sought, valued and affirmed in environments that were supportive of learning.
- Uptake at higher level in the sciences is very good and students perform well in the certificate examinations.

- The level of provision for co-curricular and extracurricular activities in the sciences is wide-ranging and very good. Students have experienced some success in the BT Young Scientist competition and in SciFest. These activities significantly add to the learning experiences of the students.
- General promotion of literacy through Science and Chemistry was good. In one instance, a very good visual display of subject-specific terminology was developed at the outset of a lesson.
- The enhancement of students' abilities to interpret, make inferences and draw conclusions from a range of graphical data was very effectively facilitated in two lessons and significantly added to the students' understanding of the scientific concept.
- A video clip was used very effectively as an introduction to student learning in one lesson.
- Students are encouraged to evaluate their own work in some instances. When appropriate, this very good practice should be used as much as possible.

#### **SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT**

- School management is very supportive of the sciences and arrangements for student access to these subjects are very good. Science is a core subject in junior cycle and the four Leaving Certificate science subjects are offered as core modules across TY. Agricultural Science, Biology, Chemistry and Physics are offered in an open choice in fifth and sixth year where uptake levels are very good.
- There is very good timetable provision for the sciences in all years.
- The school is very well resourced for the teaching and learning of the sciences. The separate science block hosts three, well-equipped laboratories, with adjoining preparation and storage areas, a demonstration room and appropriate safety equipment. These facilities provide a very inspiring learning environment for the students. Scientific models, displays of student work and posters contribute enormously to providing print-rich visual learning environments.
- A good quality information and communication technology (ICT) infrastructure supports teaching and learning in the sciences.
- The school's safety statement is currently being updated. It is recommended that the guidelines produced by the Health and Safety Authority, the Department of Education and Skills and other agencies, *Guidelines on Managing Safety and Health in Post-Primary Schools (2010)* be used to assist the school in the revision of the statement.
- The school facilitates regular testing and reporting to parents. It was reported that the introduction of 'test week' was particularly successful in promoting student engagement and monitoring progress from the outset of fifth year.
- Teachers' record keeping of student progress is very good.
- Teachers have maintained very good links with the Irish Science Teachers' Association and have participated in a very good level of continuing professional development (CPD) in the sciences. On occasion, a member of the department also delivered CPD to science teachers at a regional level. Teachers' commitment to their ongoing development as science teachers is highly commended.

## **PLANNING AND PREPARATION**

- Very good levels of teacher planning and preparation and of subject department planning and co-ordination, were noted during the inspection.
- Reflection and evaluation are integral in planning for the delivery of the sciences in TY. Commendably, TY students learn scientific topics outside of those on the Department syllabuses.
- A high level of collaboration exists among the science teachers. This is facilitated by formal, minuted meetings in addition to ongoing informal communication.
- In the context of implementing the new subject specification for Science, it is recommended that teaching and learning be included as an item on the agenda of subject meetings.
- When planning for the teaching and learning of the new science specification, the science department is encouraged to discuss and explicitly plan for the teaching of the key skills using an integrated approach.
- Peer observation of lessons has occasionally taken place between teachers in Midleton College. The science department should extend this very good practice with a view to further sharing of good practice.

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The draft findings and recommendations arising out of this evaluation were discussed with the principal, deputy principal and coordinator at the conclusion of the evaluation. The board of management of the school was given an opportunity to comment on the findings and recommendations of the report; the board chose to accept the report without response.