

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Science and Biology
REPORT**

**Our Lady of Mercy College
Beaumont, Dublin 9
Roll number: 60870T**

Date of inspection: 4 February 2014



**A N R O I N N | D E P A R T M E N T O F
O I D E A C H A I S | E D U C A T I O N
A G U S S C I L E A N N A | A N D S K I L L S**

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

INFORMATION ON THE INSPECTION

Date of inspection	4 February 2014
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with principal and teachers• Interaction with students	<ul style="list-style-type: none">• Observation of teaching and learning during two lessons over four class periods• Examination of students' work• Feedback to principal, deputy principal and subject teachers

MAIN FINDINGS

- The quality of teaching and learning was very good with instances of excellent practice.
- The use of a range of questioning strategies challenged students and promoted higher-order thinking skills.
- Exemplary practice was noted where an investigative approach was adopted in the planning and carrying out of experimental work.
- Very good assessment-for-learning strategies were used to support student learning.
- Teachers are encouraged and facilitated to attend continuing professional development (CPD) activities and a good range of events has been attended by the science team.
- Very good procedures have been initiated to encourage student self-evaluation and this includes reflection on their achievements and taking responsibility for their learning.

MAIN RECOMMENDATIONS

- Programmes of study should inform the overall plan for every topic and be updated on an on-going basis in order to facilitate their use as working documents.
 - To progress the analysis of student achievement in certificate examinations, the science department should formulate an action plan with specific, measurable, achievable, relevant and time-bound (SMART) targets and use this as part of their self-evaluation process.
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INTRODUCTION

Our Lady of Mercy College, Beaumont is an all-girls voluntary secondary school which caters for 377 students. The school offers Science as an optional subject within the Junior Cycle. Science also forms part of the optional Transition Year programme. Biology, Chemistry and Physics are offered at Leaving Certificate level.

TEACHING AND LEARNING

- The quality of teaching and learning was very good with instances of excellent practice. Exemplary practices included the use of higher-order questioning which challenged students, and the use of an investigative approach to experimental work.
- All lessons visited had clear aims and the intended learning outcomes were communicated to, and discussed with students at the outset.
- There was good continuity with prior learning, and lesson content and pace were appropriate to the class group.
- Lessons were well structured, teachers had built in time for a learning check and learning outcomes were revisited in a comprehensive summary at the conclusion of the lessons.
- Teaching was clear and concise and teachers demonstrated high competence and skill in the subject area. Resources utilised included information and communication technology (ICT), worksheets, a model of the torso and video clips. These resources were used effectively to enhance learning. Student participation in classroom activities was closely monitored by the teacher.
- Effective questioning strategies were used, both global and directed, with appropriate differentiation to meet the needs of students. Students were challenged by the questions set and teachers encouraged them to use subject-specific terminology in their answers. The development of students' literacy and numeracy skills was a feature of all lessons and this included the use of key words and calculations of percentage.
- Classroom management was very effective and conducive to an orderly and participative learning environment.
- Students were active in their own learning, in their questioning and in their responses to questions. They demonstrated a good understanding of the topic under study and could apply their learning where relevant. Teachers are encouraged to promote the practices of peer tutoring and peer assessment in order to give students more responsibility for their learning.
- Good assessment-for-learning practices included the use of traffic lights to indicate understanding, paired tasks and mind maps.
- Students' written, oral and practical work indicates good progress. Notebooks were generally maintained to a good standard and an appropriate range of experimental work had been written up.
- Notebooks show evidence of checking and annotation by the teacher and these good practices included the use of formative and directional feedback to students. Teachers should encourage students to follow up on these corrections on a regular basis.
- Assessment is an integral part of teaching and learning in the school. Teaching methods, pace and content are modified based on the outcomes of assessment. Homework is

assigned appropriately and regularly monitored. Teachers keep good records of students' attendance, performance and progress.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Science is an optional subject in the junior cycle and classes are of mixed ability. The optional Transition Year provides Science as three modules of Electronics, Microbiology and Forensic Science. Biology, Chemistry and Physics are offered at Leaving Certificate level.
- There are two laboratories with adjacent preparation and storage areas. All are clean and well maintained. A demonstration room is also used for some science classes.
- Timetabling is appropriate and there is a good range of resources, including resources for ICT, available.
- A safety statement has been compiled which informs all health and safety practices. Due care and attention is given to the active management of health and safety during class in line with the school's safety statement.
- Teachers are encouraged and facilitated to attend CPD activities and to share good practice within the subject department. The most recent CPD event has been in the area of literacy.

PLANNING AND PREPARATION

- Regular subject department meetings have been held and are appropriately documented.
 - A collaborative plan was made available for Science and Biology. This contained a good overview of the provision for the subjects in the school as well as long-term planning for each year group. Particularly good practice included the cross-curricular linkages and planning for the development of students' literacy and numeracy skills in Science.
 - High-quality individual teacher planning documentation was provided and contained programmes of study for each year group. These plans were of a very good quality and would be further enhanced by the inclusion of assessment procedures. Programmes of study should inform the overall plan for every topic and be updated on an on-going basis in order to facilitate their use as working documents.
 - An analysis of student attainment in the certificate examinations is included in the subject plan and provides comparisons with the national averages for the subjects. It is good to note that the percentage uptake of higher-level papers has increased in Leaving Certificate Biology in recent years. In order to target potential areas for improvement, the science department should formulate an action plan with SMART targets and use this as part of their self-evaluation process.
 - Very good procedures have been initiated to encourage student self-evaluation and this includes reflection on their achievements in assessments and taking responsibility for their learning. This is excellent practice.
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The draft findings and recommendations arising out of this evaluation were discussed with the principal, deputy principal and subject teachers 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.