

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection of Science and Biology
REPORT

FCJ Secondary School
Bunclody, County Wexford
Roll number: 63550Q

Date of inspection: 27 January 2016



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

Dates of inspection	26 & 27 January 2016
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 four single and two double class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- The quality of teaching and learning observed was very good overall.
- In many lessons, teachers used very good investigation and inquiry-based approaches and this generated very high-quality student engagement and thinking.
- Overall, an excellent learning environment was provided and students responded with consistently high levels of commitment and motivation and, in many instances, good learner autonomy.
- In-class assessment strategies were mostly very good and, at times, innovative and there were instances of very good formative feedback applied to students' work.
- There was very good planning for literacy and numeracy, but in some instances students' skills in drawing and interpreting graphs required earlier development.
- There is very good provision for and access to the subjects in the curriculum.
- The subject department engages in good planning practices and lessons were very well prepared, and included some creative resources.

MAIN RECOMMENDATIONS

- To ensure extension and consistency in developing students' skills in inquiry-based learning, learner autonomy and graphing, science teachers should engage in regular discussions and exchange approaches, resources and ideas that support these.
 - The science department should include plans for students' skills development in the science plan.
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INTRODUCTION

FCJ Secondary School is a co-educational post-primary school with an enrolment of 818 students. The school provides the Junior Certificate, the established Leaving Certificate, an optional Transition Year (TY) programme and the Leaving Certificate Vocational Programme.

TEACHING AND LEARNING

- The quality of teaching and learning observed was very good overall.
- Prepared resources greatly enhanced learning and supported assessment. Some very creative resources were used, including worksheets that helped lead students to make observations and conclusions and those that aided understanding of complex processes.
- The very good practices observed in lessons included recapitulation of prior learning, skilful questioning to elicit and develop learning, clear instruction of new and extension material, linking concepts, well-designed tasks for independent and collaborative learning, inquiry approaches and innovative assessment strategies.
- In the best lessons, teachers used inquiry-based approaches designed to incrementally develop knowledge and skills. The approaches involved active learning and collaboration and challenged students to form opinions based on evidence. Teachers should continue to place emphasis on investigation and inquiry. To ensure consistency in these approaches, teachers should, at science department meetings, discuss ways of continually developing their implementation.
- Best practice was observed when teachers skilfully used questioning to provide students with opportunities to demonstrate developments in their learning and to use new scientific terminology in a range of ways. Additionally, very good practice was observed in many lessons when the teacher frequently sought examples and justification of answers.
- Students demonstrated very good understanding of the concepts in the subjects. They responded excellently to the questions and tasks set, demonstrating high level of commitment to learning, motivation and interest.
- In many instances, students demonstrated good motivation for and skill in autonomous learning. Students independently made their own notes during lessons and completed corrections following tests. This should be promoted and greater consistency achieved across all class groups.
- The good practice of sharing learning intentions was used in some lessons. Extension of this could further support learner autonomy, particularly if teachers facilitate students to reflect on learning intentions in order to evaluate their own learning.
- During the practical work observed, the students demonstrated very good skills, including observation, logical thinking and deduction, and working collaboratively. Very good attention is given to prescribed practical work and, in some instances, teachers provided additional investigations to augment skill development.
- In some groups, students were encouraged to consistently write laboratory reports independently in their own words and this skill was progressively developed through formative feedback. This merits extension to all groups. Students' laboratory reports were very well monitored by teachers.
- Throughout the inspection, there was considerable attention to detail and accuracy in the work and presentations of teachers and students.

- In all class groups, students had a considerable amount of work in their copybooks including notes, homework and assessments and, in some instances, independent revision and summaries.
- Teachers' approaches to the assessment of students' written work was mostly very good and there were instances of very good formative feedback applied to students' work that merit extension.
- There was evidence, in a few instances, of the need to further develop students' skills in producing and interpreting graphs. As this is an intended component of the new numeracy strategy, means of developing this should be sought through focused departmental planning.
- In the best lessons, there was a very good balance between teacher instruction and student activity. In most lessons, teachers circulated very well throughout, providing effective guidance to students on their independent and collaborative work.
- Good provision is made for developing literacy through well-chosen keywords relating to the scientific method. These served to further enhance the already well-presented and stimulating learning environments in laboratories. Means of further supporting consistent use of these key words should be discussed.
- The atmosphere for learning was of a very high standard and this is highly commended. Teachers successfully motivated students to engage at a high level. Students' excellent response to the high expectations was evident in the impressive extent to which they were actively thinking and participating in their lessons. Students were excellently behaved throughout and demonstrated outstanding readiness for learning.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- There is very good provision for and access to the subjects in the curriculum. Science is a core subject in junior cycle. This provides an excellent foundation for further study of the sciences in senior cycle. Biology is provided as an optional subject for Leaving Certificate, with very good uptake in fifth year and in sixth year. Access to Biology is very good. The other senior cycle sciences; Chemistry, Physics and Agricultural Science are also provided. Eight-week modules in the sciences are provided in TY.
- Senior management has been very supportive of the department's priorities for subject provision including maintaining teacher continuity with groups, class size, increasing timetable allocation and enabling mixed-ability class formations. These are commended.
- The school has five laboratories enabling very good access for lessons. The laboratories are well-resourced including very good computer facilities that greatly support learning.
- The school has science teaching staff with the appropriate qualifications to support the delivery of all science subjects. Teacher deployment is fully appropriate. Teachers have engaged in professional development activities in areas that support them in making ongoing developments to teaching and learning.

PLANNING AND PREPARATION

- The science department engages in good planning practices, including sharing the organisational aspects of laboratory management, collaborating on the science plan and

setting common examinations. A very useful science homework policy has been developed. There was evidence of very good preparation for common assessments including setting out guidelines and standards for marking. At meetings, minutes kept are reviewed to ensure planned actions are followed up on.

- Commendably, the science department is increasingly discussing teaching and learning, with evidence of planning for literacy, numeracy, field work and special educational needs.
- The science plan includes useful lists of curricular content, mandatory practicals and teaching methodologies. To further match with the syllabuses, the schemes of work should be extended to set out learning objectives and strategies for the progressive development of students' skills from term to term in each subject. Reviewing the selected practical work for first year could enable teachers to place even greater focus on inquiry at an early stage in their learning.
- The current planned programme for TY Science is very good, as it aims to develop skills in experimentation and research, and it includes an interesting local ecology project.

The draft findings and recommendations arising out of this evaluation were discussed with the principal and subject teachers at the conclusion of the evaluation. The board of management was given an opportunity to comment in writing on the findings and recommendations of the report, and the response of the board will be found in the appendix of this report.

Appendix

SCHOOL RESPONSE TO THE REPORT

Submitted by the Board of Management

Part A: Observations on the content of the inspection report

The Board is very pleased with the excellent report and wishes to commend the Teachers in the Science & Biology Departments.

Part B: Follow-up actions planned or undertaken since the completion of the inspection activity to implement the findings and recommendations of the inspection