

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

**Subject Inspection of Science and Biology**  
**REPORT**

**Saint Columba's Comprehensive School**  
**Glenties, County Donegal**  
**Roll number: 81010J**

**Date of inspection: 22 April 2016**



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

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

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**INFORMATION ON THE INSPECTION**

<b>Date(s) of inspection</b>	21 and 22 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 five class periods (three double classes and two single classes)</li><li>• Examination of students' work</li><li>• Feedback to principal and teachers</li></ul>

**MAIN FINDINGS**

- The quality of teaching and learning observed ranged from good to excellent.
- In all lessons, the activities were well organised and it was clear that teachers had planned meticulously for their lessons.
- Teaching and learning were very effective where the content of the lesson was varied, and where activities were student centred and promoted collaboration.
- Excellent practice was observed where students were challenged to explain qualitative and quantitative data and the effects of chance and human error on the outcomes of an investigation.
- Teachers created a positive and supportive learning environment.
- Whole-school provision for Science is very good and there are three well-resourced laboratories.

**MAIN RECOMMENDATIONS**

- Teachers should build on the existing collaborative practices by providing students with opportunities in lessons to peer tutor and peer review their work.
  - It is recommended that school management explore the provision of Science in the Transition Year (TY) programme as resources become available.
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## **INTRODUCTION**

Saint Columba's Comprehensive School is a co-educational post-primary school which caters for a total of 386 students. The school provides Science as a core subject in Junior Cycle. At senior cycle, Biology, Chemistry, Physics and Agricultural Science are available and students can follow the Leaving Certificate or leaving Certificate Vocational programme. The school also has an optional Transition Year.

## **TEACHING AND LEARNING**

- The quality of teaching and learning observed ranged from good to excellent. Teachers shared the learning intentions with students at the outset of lessons, and reinforced them during and at the end of lessons; this structured approach worked very well.
- Teacher instruction was very clear and accurate in all lessons. Key concepts were emphasised and the lesson content was augmented by up-to-date information and everyday examples. In all lessons, the activities were well organised and it was clear that teachers had planned meticulously for their input.
- Teaching and learning were very effective where the content of the lesson was varied, and where activities were student centred and promoted collaboration. Best practice was observed where students were organised to work in small groups or pairs and expectations regarding the nature of the task and presentation of the outcomes were clearly outlined in advance. It is recommended that teachers build on this good collaborative group work by providing some opportunities for students to peer tutor and peer review their own and each other's work.
- Appropriate resources were selected to stimulate and motivate learners and to encourage students to actively engage with the lessons. Some very good examples included the use of jigsaws, laminated task sheets, worksheets and games designed to aid revision.
- Information and communication technology (ICT) was incorporated effectively into all lessons. Clear electronic presentations and video clips clarified procedures such as DNA fingerprinting and the demonstration of sound waves. Worthwhile applications were also used by teachers to assess learning and to support homework.
- Excellent practice was observed where students were challenged to explain qualitative and quantitative data and the effects of chance and human error on the outcomes of an investigation. Teachers created a positive and supportive learning environment and the physical environment of the laboratories was very impressive.
- In all lessons, students' understanding and learning were checked using a variety of questioning strategies. Good use was made of higher-order questioning, where students were challenged to think for themselves by making predictions and providing explanations for phenomena observed.
- Homework is assigned regularly and teachers have adopted good strategies for checking homework. The student notebooks observed were generally tidy and well maintained. A good level of monitoring of students' written work was observed and best practice was seen where teachers provided formative feedback to students on homework, class work and assessments. One good example was where common problem areas were identified and explained to the whole class. This practice should be more widespread and teachers should encourage students to follow-up on corrections made.

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

- Whole-school provision for Science is very good and the science subjects are appropriately timetabled at Junior Certificate and Leaving Certificate level.
- The school offers an optional TY. While science subjects formed part of the TY programme in the past, this is no longer the case. It is recommended that school management monitor this on a year-by-year basis and explore the provision of science in the TY programme as resources become available.
- There are three well-resourced laboratories with adjacent preparation and storage areas. All are tidy and well maintained. Each room is equipped with a personal computer and data projector and is Broadband enabled.
- The members of the science team are appropriately qualified and the most recent continuing professional development (CPD) has been provided by the Professional Development Service for Teachers (PDST) and Junior Cycle for Teachers (JCT).

## **PLANNING AND PREPARATION**

- The planning documentation provided at the time of the evaluation included plans for Junior Certificate Science and Leaving Certificate Biology. They provided a good overview of how the subjects are organised in the school.
- The schemes of work indicated topics to be taught in an appropriate timeframe. It is good practice that learning outcomes for students were provided for all topics. These schemes could be expanded to include learning activities undertaken and resources used; this will allow for the development of a collaborative working document.
- Student achievement in the certificate examinations is very good and uptake of higher level in Science and Biology has been above national averages over the past number of years.
- There is ongoing consultation with the special educational needs (SEN) department and it is noteworthy that subject plans contain strategies to assist teachers in providing an inclusive classroom.
- Subject department meetings are held and minutes are recorded. Subject co-ordinators are in place for Junior Certificate Science and Leaving Certificate Biology. In order to aid collaborative practice, there is a common server where resources can be uploaded and made available to all members of the science team.

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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 was given an opportunity to comment in writing on the findings and recommendations of the report; a response was not received from the board.

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