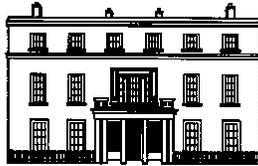


An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection of Science and Chemistry
REPORT

Millstreet Community School
Millstreet, County Cork
Roll number: 91390F

Date of inspection: 19 May 2015



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

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

INFORMATION ON THE INSPECTION

Date of inspection	19 May 2015
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 five class periods• Examination of students' work• Feedback to principal, deputy principal and teachers

MAIN FINDINGS

- The quality of teaching and learning in Science and Chemistry is at a high level.
- Classroom atmosphere was noted as being very positive and enhanced by good student attentiveness and concentration.
- Lessons were student-centred and students were actively engaged in structured activities.
- Whole-school support for science is very good; a broad range of science subjects is offered to the students.
- The school is well resourced for teaching the sciences.
- The science department is committed, works collaboratively and engages in a high level of planning.

MAIN RECOMMENDATIONS

- While there was some evidence of the use of the investigative approach to teaching Science, it is recommended that this approach be used to a greater extent, as it encourages the development of students' problem-solving skills.
 - Increased use of formative feedback and student self-assessment of his or her work is recommended.
-

INTRODUCTION

Millstreet Community School is a co-educational school, serving the town of Millstreet and its hinterland. It has an enrolment of 252 students. The school offers the Junior Certificate, Transition Year (TY) and established Leaving Certificate programmes in addition to the Leaving Certificate Vocational Programme (LCVP).

TEACHING AND LEARNING

- The quality of teaching and learning is at a high level. Good practice was observed when intended learning intentions were shared with students at the outset of lessons. It was particularly effective when these learning intentions were used by the teacher during review of student learning. Building on this good practice, it is recommended that students revisit the learning intentions themselves in order to assist in their self-assessment of learning.
- Lessons were well structured and this allowed for seamless transition from one part of the lesson to the next. Group work activities in the theory lesson were very effective in engaging students with new lesson content, in addition to enhancing their literacy skills.
- Good links were made with previous learning, in Science and in other subjects, thus consolidating and building on previous learning. Examples from everyday life, such as copies of X-rays, helped to make the topic more interesting.
- Differentiation was facilitated through questioning by teachers and differentiated homework. This approach to meeting students' needs within mixed-ability classes is commended.
- Questioning was very effectively used to ascertain previous learning and to develop lesson content. Avoidance of the use of chorus answering was recommended in one lesson as this does not assist in ascertaining individual student learning. In one lesson, the teacher used aspects of student homework to broaden assessment of student learning. This is very good practice.
- There was some evidence of the use of the investigative approach to teaching Science. It is recommended that this approach be used to a greater extent as it encourages the development of students' problem-solving skills.
- Student practical work was very well organised. Students worked safely and well as they conducted their experimental activities. In all practical lessons observed, a plenary session was successfully used to consolidate learning. As students progress through the school, it is suggested that students engage in group or pair work during these plenary sessions and focus to a greater extent on discussion and drawing evidence-based inclusions. This could then feed into whole-class discussion.
- Information and communication technology (ICT) was used appropriately to support learning. Appropriate animations very effectively illustrated the effect of concentration on reaction rate in one lesson and the movement of a skeleton in another lesson.
- Classroom atmosphere was very positive and a very good teacher-student rapport led to very constructive learning environments in the lessons observed.
- A very good focus on literacy development was observed in all lessons. Strategies included facilitating explicit use of subject-specific terminology, focus on new terminology by students integrated into lesson structure and the ten- second game.

- In the lesson where numeracy skills were essential to the development of the scientific concept, the teacher led student use of numeracy skills. It is recommended that student input be central to this work, with teachers contributing as required.
- Overall a good standard of learning, relative to students' abilities, pertained in the lessons observed.
- The aggregation of marks from the assessment of practical copies with end-of-term examination marks to arrive at overall term results is good practice as it provides a better indicator of student performance in Science.
- There was evidence of teacher annotation of students' written homework and some monitoring by students themselves. The desirable practice of teacher annotation, with comments on areas where students need to improve, should be extended. Involving students in assessment of their own work should be considered.
- A high level of co-curricular and extracurricular activities, including field trips and entries to the BT Young Scientist, help engender interest in science. The commitment of teachers to providing such activities is commended.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Whole-school support for the provision of a broad science curriculum is very good, thus ensuring all students have some science education. Commendably, Science is a core subject in first year and the uptake of Science for Junior Certificate is significantly higher than national norms. All students study Science in TY. Physics, Chemistry, Biology and Agricultural Science are offered as optional subjects for Leaving Certificate and the uptake of these subjects is very high.
- Timetabling provision is in line with syllabus guidelines for all senior cycle science subjects with overall a good spread of lessons across the week. Time allocation for Junior Certificate Science is slightly below that recommended in the syllabus, due to the commendable provision of a taster system for optional subjects in first year.
- The school is well resourced for teaching the sciences, with two well stocked laboratories and associated storage and preparation area. Another room has been converted for the use of Physics.
- Laboratory safety is prioritised in the school. There is a high level of safety equipment in the laboratories. Chemicals are stored in accordance with best practice safety procedures. However, the installation of appropriate ventilation in the chemical store is recommended.
- Whole-school assessments occur three times a year, following which reports are sent home. In addition continuous assessment practices occur via regular topic tests and questioning in class.
- Students perform well in certificate examinations. The uptake at higher level is very good in both Science and Chemistry.
- Teachers' commitment to high-quality teaching in the sciences is evidenced by the high level of participation in science-related professional development.

PLANNING AND PREPARATION

- Teachers' levels of preparation for lessons were high, and included a range of experimental and other resources, handouts and ICT-based presentations, all of which supported student learning.
- A high level of planning has resulted in the compilation of comprehensive folders of resources. These folders include detailed schemes of work in Junior Certificate Science, TY Science and in Chemistry. The inclusion of numeracy and literacy strategies in the plan, which are in line with the school's five-point plan, is noteworthy.
- The science teachers are committed and adopt a collegial approach to their work. A very high level of collaboration exists among science department members. This is evidenced by the sharing of resources and in the records of both informal and formal meetings. Consideration could be given to keeping electronic minutes of formal meetings.
- A comprehensive TY plan has been developed. Commendably, aspects of Science not related to certificate syllabuses form part of the plan. The TY Woodlands Project, which was completed in conjunction with Millstreet Tidy Towns' committee, is a very good example of this.

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.