

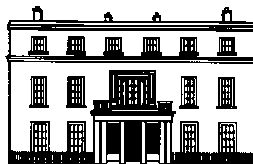
An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Mathematics and Applied
Mathematics
REPORT**

**Saint Patrick's Comprehensive School
Shannon, County Clare
Roll number: 81007U**

Date of inspection: 16 April 2013



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

**REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN MATHEMATICS AND
APPLIED MATHEMATICS**

INFORMATION ON THE INSPECTION

Dates of inspection	15 and 16 April 2013
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 seven class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- Overall, the quality of teaching and learning observed was good and some examples of very good practice were noted.
- Higher order and probing questioning strategies were well used in most lessons.
- Information and communications technology (ICT) was used to good effect in the majority of lessons observed.
- Timetable provision for Mathematics is very good.
- Collaborative subject planning is at an early stage, with considerable scope for further development.
- Teachers' individual planning for lessons was very good.

MAIN RECOMMENDATIONS

- Strategies for differentiation should be further developed and implemented in all lessons.
 - The subject planning folder should be extended to include schemes of work detailing learning outcomes, resources, methodologies and assessment strategies.
 - The Transition Year (TY) plan should be revised to include more context-based and non-syllabus content.
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INTRODUCTION

Saint Patrick's Comprehensive is a co-educational school with a current enrolment of 640 students. The programmes offered are the Junior Certificate, an optional TY, the Leaving Certificate Vocational Programme (LCVP), the Leaving Certificate Applied Programme (LCA) and the established Leaving Certificate.

TEACHING AND LEARNING

- Overall, the quality of teaching and learning observed was good with some examples of very good practice noted. Best practice was observed in lessons where students participated in a range of activities during the lesson. Such activities included the use of individual and collaborative worksheets, modelling of solids, formulating questions and whole-class discussion as well as some very good use of flash cards and online content. Particularly good use was made of investigative approaches to problem solving in some lessons.
- All lessons were conducted in an atmosphere of mutual respect. Students demonstrated positive dispositions towards Mathematics and made good progress with assigned tasks. In some cases, there was a need to differentiate lesson activities further to ensure that all students remained adequately challenged for the duration of the lesson.
- In most lessons, higher order and probing type questions were well used to promote students' learning. Such questioning strategies provided opportunities for students to justify their answers and to develop their understanding of mathematical concepts.
- ICT was used to good effect in the majority of lessons. Teachers used the interactive whiteboard to aid them in the drawing of diagrams and to demonstrate solutions to problems. The use of subject-specific software was used in some lessons to efficiently present graphs of considerable complexity, thus facilitating good progress through the lesson.
- In the majority of lessons, particular attention was paid to topic-specific terminology and teachers sought definitions for keywords from the class before students recorded them in a dedicated notebook. This support for development of the literacy dimension of Mathematics is praiseworthy.
- The issuing of homework was a feature of all of the lessons observed and time was given at the beginning of lessons to go through the homework exercises. In some cases, teachers gave individual feedback to students on the quality and presentation of their work. It is recommended that the mathematics department discuss collaboratively their practices and expectations in relation to homework and work towards consistency of practice. To facilitate this, there is a need for school management to oversee the development of a whole-school homework and assessment policy. Such a policy should provide guidance in relation to both the formative and summative assessment of students' work and it should promote the more widespread use of *assessment for learning* strategies.
- Applied Mathematics students demonstrated considerable aptitude and they were very well facilitated through the setting and monitoring of challenging tasks. This was combined with very effective scaffolding of the learning content and very clear explanation of key concepts.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetable provision for Mathematics is very good particularly in fifth and sixth year where students are timetabled for six periods of Mathematics per week. Lessons are distributed throughout the week facilitating daily contact with the subject. First-year and TY students are taught in mixed-ability settings in line with good practice. In other years, students are assigned to classes based on their level of study. Concurrent timetabling from second year through to sixth year facilitates students' access to the subject at different levels.
- Applied Mathematics is delivered through a combination of in-school and after school lessons. The subject benefits from a high profile in the school.
- School management has facilitated all teachers of Mathematics in attending continuing professional development workshops for *Project Maths*. It is noteworthy that a number of teachers have attended additional evening workshops. This demonstrates a commitment by these teachers to ensuring the best possible outcomes for students.
- Appropriate systems are in place to identify students who find Mathematics particularly challenging and they are given supports, mainly in small group settings. Students were observed working very well in such a setting. In general, there was evidence that this approach to provision is effective.
- Three teachers currently teach higher level Mathematics at junior cycle. The teaching of Leaving Certificate higher level Mathematics is undertaken by two teachers. The roll-out of *Project Maths* has led to an increase in the number of students opting to study Mathematics at higher level in the school. This is a welcome development and the school currently has the teaching resources to facilitate this. As a means of building capacity, it is recommended that other teachers of Mathematics be encouraged to teach the subject to higher level, both at senior cycle and at junior cycle.
- There is very good whole-school support for Mathematics in terms of the provision of ICT as well as subject-specific resources for teaching and learning. Each classroom is equipped with an interactive whiteboard and wireless internet access is available throughout the school.

PLANNING AND PREPARATION

- The staff of the mathematics department present as a dedicated team who collaborate effectively on issues pertaining to Mathematics. In order to streamline the activities of the department, it is recommended that a department co-ordinator be appointed and that this position be rotated periodically, perhaps every two years.
- Department meetings are facilitated as part of the whole-school planning process. Formal meetings take place at least once per term with informal meetings held as the need arises.
- The department's planning folder contains outline content plans for each topic along with broad references to classroom resources and strategies for differentiation. As a means of building on this, it is recommended that the planning folder be extended to include comprehensive schemes of work. These schemes of work should contain detailed learning outcomes for each syllabus topic and should be broken down by level of study. Reference

should also be made to corresponding teaching strategies, resources and assessment modes.

- The current TY plan contains mainly topics drawn from the syllabuses for the Certificate examinations. It is recommended that this plan be revised with the aim of incorporating more context-based material containing an appropriate mix of syllabus and non-syllabus content.
- Individual planning for lessons was very good. As well as textbooks, additional resources to support teaching and learning were prepared in advance and were available for use at key stages during lessons.
- An analysis of students' attainment in the certificate examinations indicates consistently good levels of performance in recent years, particularly at Leaving Certificate higher level in both Mathematics and Applied Mathematics. Management and staff have also begun to analyse results from the certificate examinations. Further analysis should focus on the identification of in-house trends, strengths and weaknesses. Action plans should be developed to address any concerns that may arise as a result of this analysis.

The draft findings and recommendations arising out of this evaluation were discussed with the principal 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.