

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Mathematics
REPORT**

**Gallen Community School
Ferbane, County Offaly
Roll number: 91515W**

Date of inspection: 23 April 2013



**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 MATHEMATICS**

INFORMATION ON THE INSPECTION

Dates of inspection	22 nd and 23 rd 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 four class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- The quality of teaching and learning observed was consistently very good and many excellent practices were also noted.
- A creative range of methodologies and activities was incorporated into the lessons to engage and to interest students.
- The lessons allowed students the autonomy to be independent learners.
- The quality of the students' contributions indicated that very good learning was taking place.
- Whole-school support for Mathematics is very good.
- The mathematics teachers have engaged very well in planning for the subject.

MAIN RECOMMENDATIONS

- All relevant cross-topic links should be identified and included in the subject plan over time.
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INTRODUCTION

Gallen Community School is a co-educational community school with 396 students. The school offers the Junior Certificate, the established Leaving Certificate and the Leaving Certificate Vocational Programme (LCVP). Transition Year (TY) is optional for students.

TEACHING AND LEARNING

- The quality of teaching and learning observed was consistently very good and many excellent practices were also noted. All lessons were very well prepared and planned. Teacher explanations and instructions were clear. The learning objectives were shared with students at the start of all lessons and their achievement was assessed as the lessons progressed. All of this is very good practice.
- All lessons began with a recap on prior learning. This was particularly good where learning from relevant previous topics was revisited. Teachers made very good use of higher-order questioning to encourage mathematical thinking and to assist students in fully exploring the ideas of the lessons. Students were regularly asked to describe what they noticed or to make connections and teachers encouraged them to think for themselves. These very good practices are in keeping with the spirit of *Project Maths*.
- Each lesson incorporated a creative range of methodologies such as group and pair work, direct teacher instruction, discovery and investigation, mathematical games, video clips and map work. In addition, supplementary materials were prepared with the students' interests in mind. The mathematics department has worked very hard in ensuring that the resources and methodologies used encourage students to enjoy the subject.
- Lessons allowed students the autonomy to be independent learners. A lesson on Geometry that involved a discovery approach to understanding similar triangles was a good example of this. Teachers provided general advice rather than direct help and encouraged students to persist even when they found the work difficult. The teachers set students carefully planned tasks, for which they gave very clear instructions that allowed students to develop skills or to learn a concept without additional teacher input. This excellent approach is very valuable in enabling students to gain confidence in their own ability to solve mathematical problems.
- Where it was appropriate lesson concepts were presented in their full mathematical context. For example, the content of one lesson, crossed-over the full range of associated mathematical concepts: measure, ratio, co-ordinate geometry, the circle and compass bearings. Another integrated Geometry with measure and statistics. Each of these was highlighted very well and explored in a real-life context also. This approach reflects the way that the certificate examination's mathematics questions are set and is very valuable.
- There was good focus on conceptual learning rather than the mastery of techniques or methods. This involved teachers focusing on exploring the core ideas underlying the Mathematics being taught. Since this is one of the central aims of *Project Maths*, its continuation and extension are encouraged.
- The methodologies used differentiated learning very well through providing high levels of stimulation for all students and allowing them to work at their own pace. In addition, students who finished their work early were provided with additional, more challenging activities. Teachers also provided assistance for any student experiencing difficulty.

- The quality of the students' contributions indicated that very good learning was taking place. They demonstrated an interest in Mathematics and actively engaged and participated in the lessons.
- The atmosphere in classrooms visited was conducive to encouraging confidence with the subject. The relationships between students and teachers were warm and respectful. In all lessons there was an emphasis on making Mathematics fun for students.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetable allocation and the provision of resources, which includes information and communication technology (ICT), support teaching and learning in Mathematics very well.
- Students are assigned to mixed-ability mathematics classes for first year. Levels are set in every other year. Concurrent timetabling is provided in all years where students are organised into higher and ordinary level groups. Students are encouraged to study the subject at the highest level possible for as long as possible. This is all good practice.
- School management actively encourages teachers to engage in continuing professional development (CPD) and facilitates attendance at subject specific and whole-school CPD events.
- The school is actively promoting STEM (Science, Technology, Engineering and Mathematics) subjects and provides a range of initiatives, such as computer programming and computational thinking using digital media for students. This is very beneficial in encouraging problem solving and mathematical thinking.
- A range of valuable opportunities is provided for students to participate in extracurricular mathematics activities.

PLANNING AND PREPARATION

- The mathematics teachers have engaged very well in planning for the subject. Regular meetings are held for the members of the subject department to plan. The subject co-ordinator enthusiastically promotes the subject, maintains the subject plan and provides support, where necessary. The high level of collaboration amongst mathematics teachers is evident from the range and variety of resources that have been built up and from the consistently very good classroom practice observed.
- In keeping with best practice the syllabus documents are the main resources used in planning the schemes of work for Mathematics. The schemes are designed to reflect the way the subject is examined by identifying some of the links between topics. This is very important in ensuring that students are properly prepared for the certificate examinations. It is recommended that this excellent work continue so that all the relevant links will be identified over time.
- The school's resources have been catalogued and the schemes of work indicate some but not all resources to be used in teaching each aspect of the syllabuses. It is recommended that a similar system be created for the *Project Maths* teaching and learning plans. In addition, these and the remainder of the school's own resources should be referenced in the schemes of work as appropriate.

- The mathematics department is actively involved in promoting the school's literacy and numeracy policy. Evidence of this was noted in classrooms and in teachers' practices throughout the evaluation.
- The TY plan is very good and contains a good mix of syllabus and non-syllabus material. A range of valuable methodologies is used to encourage TY students to develop their mathematical skills.

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 of the school 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

Area 1 Observations on the content of the inspection report

The Board of Management wishes to acknowledge the excellent work undertaken by the Mathematics Department and are committed to supporting them in their work.

Area 2 Follow-up actions planned or undertaken since the completion of the inspection activity to implement the findings and recommendations of the inspection

The Mathematics Subject Plan was commended for its detail and the one recommendation that “all relevant cross – topic Links should be identified and included in the subject plan “is now being actively worked on”.