

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

**Subject Inspection of Mathematics**  
**REPORT**  
**Firhouse Community College**  
**Dublin 24**  
**Roll number: 70140L**

**Date of inspection: 13 March 2014**



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

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

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**INFORMATION ON THE INSPECTION**

<b>Dates of inspection</b>	12 <sup>th</sup> and 13 <sup>th</sup> March 2014
<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 seven class periods</li><li>• Examination of students' work</li><li>• Feedback to principal and teachers</li></ul>

**MAIN FINDINGS**

- The quality of teaching and learning ranged from very good to excellent in almost all lessons observed.
- Many valuable differentiation strategies were used to ensure that students' individual needs were met.
- In most lessons the planned activities facilitated independent learning and students were encouraged to think for themselves.
- Excellent assessment practices were observed during the evaluation.
- The provision of information and communications technology (ICT) and resources for teaching and learning in Mathematics is very good.
- Timetable provision for the subject is poor and some class groups have more than one teacher for Mathematics.

**MAIN RECOMMENDATIONS**

- The recently established mathematics department peer observation practices should be extended to support the sharing of the very good practices outlined in this report and the implementation of the recommendations made in the report.
- Timetable provision for Mathematics should be increased and sharing of class groups should be avoided, if possible.
- The structure of the TY mathematics programme should be reviewed with the aim of minimising the disruption to mathematics learning that is caused by the various TY activities that are organised for students.
- The TY plan for Mathematics should be reviewed and should include alternative topics to those on the Leaving Certificate Mathematics syllabuses.

## INTRODUCTION

Firhouse Community College is under the patronage of Dublin and Dún Laoghaire Education and Training Board (DDLETB). It has a current enrolment of 423 boys and 287 girls. The school offers all Leaving and Junior Certificate programmes. Transition Year (TY) is a compulsory programme for the students.

## TEACHING AND LEARNING

- The quality of teaching and learning was very good to excellent in almost all lessons observed.
- *Project Maths* was evident in the variety of methodologies used and the conceptual focus of the learning. The methodology in one lesson was good traditional teaching with teacher examples followed by students completing similar exercises. There was significant scope in this lesson for the implementation of *Project Maths*. It is, therefore, recommended that the very good *Project Maths* approaches evident in the evaluation be shared through collaborative lesson planning and peer observation.
- A number of mixed-ability class groups were observed and many valuable differentiation strategies were used to ensure that students' individual needs were met. These included allowing students to work at their own pace, the provision of individual attention and the provision of questions on hand-outs that graduated in difficulty. This was particularly good in the TY lesson observed.
- In most lessons the planned activities facilitated independent learning and students were encouraged to think for themselves. In these lessons the students were active, worked in pairs or groups and discussed mathematical ideas with each other. Three teachers are participating in Teaching and Learning for the 21st Century (TL21). It was evident in the lessons observed that this experience has contributed positively to the use of student-centred methodologies.
- Most lessons had a strong conceptual focus with teachers encouraging students to explore the reasons behind the Mathematics taught. Best practice was noted where the concepts were also presented in their appropriate mathematical context. There was scope for a more conceptual approach in the lesson on quadratic equations observed. It is, therefore, recommended that the algebraic aspects of equations be taught alongside their graphical representations.
- The atmosphere in all classrooms visited was warm. Teachers were affirming of students' efforts. The relationships between students and their teachers was very good.
- Teachers used higher-order questions very effectively to encourage students to fully explore the concepts taught. Students were confident when explaining their reasoning, answering and asking questions and making contributions during the lessons. Students were asked for their ideas and opinions. They demonstrated very good understanding in the contributions that they made and in their very good use of mathematical language. In some lessons students were asked to anticipate results and test their reasoning. Greater use should be made of this very good practice.
- Very good attention was given to developing students' literacy skills in the lessons observed. Key words were integrated well into the work of lessons and teachers made very good use of the meanings of key words to explain mathematical concepts.

- Excellent assessment practices were observed during the evaluation. These included the use of ‘show me boards’, ‘traffic lights’ and ‘lollypop sticks’ to assess progress and to ensure inclusive questioning in almost all lessons. All teachers observed students working and provided very good individual attention to students. In one lesson students worked on a hand-out that outlined the expected learning together with a success indicator that had to be filled out by students. This excellent practice enabled students to take responsibility for their own learning.

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

- The provision of ICT and resources for teaching and learning in Mathematics is very good.
- Two teachers are mainly responsible for teaching higher-level Leaving Certificate Mathematics and the uptake of the higher level in the school is increasing. It is, therefore, recommended that the number of teachers deployed to teach this level should be increased.
- First, second and third years are provided with four class periods of Mathematics per week. There are three periods of Mathematics timetabled for TY students and five periods per week for fifth and sixth years. In addition, some class groups are taught Mathematics by more than one teacher, which is not good practice. It is good that senior management has identified these issues for attention in next year’s timetable. It is recommended that timetable provision for Mathematics be increased and that sharing of class groups should be avoided, if possible.
- It was evident in the evaluation that some TY co-curricular activities and the consequent student absences have impacted negatively on teaching and learning in Mathematics. While the value of these activities is recognised, the structure of the TY programme for Mathematics should be reviewed to take account of the various co-curricular activities that take place with the aim of minimising the disruption to mathematics learning.
- An analysis of student attainment in the certificate examinations is completed each year. In keeping with good practice this is used to inform planning for Mathematics.

### **PLANNING AND PREPARATION**

- Planning time for the mathematics department is provided termly and the mathematics teachers work well together as a team. It is very good that some have recently begun to observe each other’s lessons as a way of sharing good practice. This is very valuable and should be extended across the subject department.
- The mathematics teachers have worked hard in planning for the subject. Very good programmes of work for each year group and level have been created to incorporate the new syllabuses. It is recommended that cross-topic links that are identified through teaching the syllabuses be added to the subject plans over time.
- The TY plan comprises mainly Leaving Certificate syllabus material. It is recommended that alternative material be included that will facilitate students in developing essential problem solving, analytical and critical thinking skills. Modules on Applied Mathematics,

financial Mathematics, linear programming, vectors and matrices, and computer programming are suggested.

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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 on the findings and recommendations of the report; the board chose to accept the report without response.