

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection of Mathematics
REPORT

Árd Scoil Chiarán Naofa
Clara, County Offaly
Roll number: 72530L

Date of inspection: 30 September 2011



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	28th and 30th September 2011
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 and teachers

MAIN FINDINGS

- While some very good teaching practices were observed in the evaluation the over-reliance on teacher instruction meant that students were passive for the majority of lesson time and this had a negative effect on the quality of learning.
- The members of the mathematics department engage well in subject planning and all of the lessons observed were well prepared.
- The mathematics teachers supported literacy well in the lessons observed.
- Teachers assess students' learning very well.
- There is very good whole-school support for Mathematics.

MAIN RECOMMENDATIONS

- In order to facilitate full student engagement and participation a wider variety of methodologies such as investigation, guided discovery, group work, and activities using concrete materials are recommended for inclusion in lessons.
 - More opportunities should be provided for students to work on appropriately challenging activities without direct teacher assistance.
 - The teachers involved in teaching TY Mathematics should collaborate on devising lesson plans to differentiate learning for this group.
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INTRODUCTION

Árd Scoil Chiarán Naofa is under the patronage of County Offaly Vocational Education Committee (VEC). The school has a current enrolment of 109 boys and 109 girls and participates in Delivering Equality of Opportunity in Schools (DEIS). The students are offered the Junior Certificate, the Junior Certificate School Programme (JCSP), the established Leaving Certificate, and the Leaving Certificate Applied (LCA) programme. Transition year (TY) is also provided and is optional.

TEACHING AND LEARNING

- Some very good teaching practices were observed in the evaluation. All of the lessons observed were well prepared. The main methodology used was enthusiastic, lively teacher instruction with student involvement through one-to-one questioning or students completing exercises at the board. Very good use of information and communications technology (ICT) was a feature of some lessons. There was, however, significant scope for an increase in the range of methodologies used. Therefore, investigation, guided discovery, group work, and activities using concrete materials are recommended for inclusion in lessons. In addition, the frequent use of these approaches will bring the delivery of the mathematics syllabuses more in line with the aims of *Project Maths*.
- There was an imbalance between teacher and student activity in most lessons, with teacher instruction dominating the majority of class time. This resulted in students remaining passive for most of the lesson. The quality of learning would have been significantly higher if students had been given more opportunity to actively participate in the learning activities. It is, therefore, recommended that teachers plan activities that facilitate full student participation and engagement for inclusion in all lessons.
- In most lessons observed, few opportunities were provided for students to independently engage in exploring the mathematical concepts presented. Teachers over-supported students by intervening with assistance at too early a stage and by giving full answers to student questions where more general advice would have encouraged students to think for themselves. More opportunities should be provided for students to work on appropriately challenging activities without direct teacher assistance. This will allow students to practise persistence, logical thinking and problem solving. The development of these essential skills will contribute to students' ability to tackle questions presented in unfamiliar formats and to interpret mathematical problems within a range of contexts, as will be the case on *Project Maths* examination papers.
- Teachers supported literacy in the classroom through the use of key word charts, thorough focusing on the meaning of the key words used and through providing good quality worksheets.
- Teachers assess students' learning very well. Assessment for Learning (AfL) principles are used extensively. This involves teachers providing a statement of each lesson's learning intentions at the start of lessons and checking their achievement at the end. Teachers also include encouraging comments and advice on how students can improve which is worthwhile. Students' work is regularly monitored and this has contributed to high standards in the presentation of work.
- The relationship between teachers and their students is warm and caring. Classroom atmosphere is encouraging and supportive.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- There is very good whole-school support for Mathematics in terms of time allocation, timetable arrangements for level choice, the provision of concrete materials, and the allocation of a sufficient number of teachers to allow for the creation of smaller classes. There is also very good access to ICT equipment to support teaching and learning in Mathematics.
- Students are placed in mixed-ability class groups for Mathematics in first year and are assigned to higher and ordinary level groups from second year onwards which is good practice. Lessons are concurrently timetabled allowing students the flexibility to change level where necessary. There was evidence that students are encouraged to study the highest level possible for as long as possible.
- Senior cycle higher-level Mathematics is the responsibility of one member of the teaching team. In order to ensure that the expertise to teach Mathematics at this level is retained within the school the number of teachers teaching higher-level leaving certificate Mathematics should be increased.
- Attendance at continuing professional development (CPD) courses is good and is strongly supported by school management.
- Valuable opportunities are provided for students to participate in mathematics-related extracurricular activities.

PLANNING AND PREPARATION

- Meeting time is provided once per term as part of the whole-school planning process. Formal meetings of the teachers of each year group are held frequently and much informal planning takes place. A co-ordinator has been appointed and this position is rotated periodically among the team members which is good practice.
- It is evident from the minutes of planning meetings that the mathematics department evaluates its work. This is very valuable as it involves identifying areas for improvement, devising and implementing strategies, and reviewing and evaluating the effects of any changes made. An analysis of the school's achievement in the certificate examination is carried out annually and this is used to set targets for improvement which is very good practice.
- A good mathematics plan has been developed and it comprises policies in addition to programmes of work for each year group and level. Teaching and learning plans incorporating the material from the new syllabuses have been created. These and the syllabuses themselves are central to planning the programmes of work which is good. It is recommended that a section on methodology be included and that discovery, investigation, experimentation and active methodologies be favoured over traditional approaches. It is also recommended that the teaching team collaborate on devising activities that facilitate students' independent exploration of the concepts of the lessons.
- The TY programme for Mathematics comprises mainly syllabus material with an emphasis on project work in its delivery. The current TY group contains students from a very wide range of mathematical ability. Therefore, it is recommended that the teachers

involved in TY Mathematics collaborate on devising lesson plans to differentiate learning for this group.

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 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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