

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Mathematics
REPORT**

**St Mary's Diocesan School
Drogheda, County Louth
Roll number: 63841E**

Date of inspection: 6 May 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

Date(s) of inspection	5th and 6th May 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 eight class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- Overall, the quality of teaching and learning observed was very good.
- All teachers used questioning very well to support learning and there was a good focus on the language of Mathematics.
- There is very good practice in relation to assessment.
- Whole school provision for Mathematics is good in relation to time for the subject and resources.
- The arrangements for level choice in the junior cycle need to be reviewed in order to ensure that all students have access to a level appropriate to their ability.
- The members of the mathematics department have engaged very well in planning for the subject and this has contributed to the development of a very good mathematics plan.

MAIN RECOMMENDATIONS

- The learning objectives of each lesson should focus on achieving understanding of the key ideas; these should be shared with students at the start of the lesson and checked at the end.
 - Second and third-year mathematics lessons should be timetabled concurrently in the coming year, if possible.
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INTRODUCTION

St Mary's Diocesan School is a voluntary Catholic secondary school for boys with a current enrolment of 764 students. Transition year (TY) is optional.

TEACHING AND LEARNING

- Overall, the quality of teaching and learning observed was very good. Some variety in methodology was evident. A number of class groups were appropriately engaged in examination revision. There was some good use of information and communications technology (ICT) observed. There was scope, in some lessons, for a more integrated use of ICT. *Geogebra*, for example, could have been used to link algebraic solutions to their geometrical representations.
- Teacher explanations were clear and were presented in familiar contexts. It is good that most explanations focused on facilitating understanding. A small number of explanations involved students mastering a step-by-step method, without exploring the mathematical basis of the particular method. It is recommended that the good approach taken in most teacher explanations be extended to all lessons.
- The learning objectives were explicitly shared with students at the outset in half of the lessons observed, thus providing a valuable focus for learning. This good practice should be adopted across the subject department. Furthermore the learning objectives should focus on achieving understanding of the key ideas and should be checked at the end of lessons.
- All teachers used questioning very well to reinforce learning. Students were frequently asked to explain their reasoning, to anticipate results, and to discuss ideas. In some cases teachers were careful to highlight the mathematical language used; this was reflected in the high quality of student discussions and responses to questions.
- The majority of teachers encouraged students to think for themselves by allowing them to work on all elements of the learning activities without help. This was of particular value where students had to interpret questions presented in unfamiliar contexts. In a small number of cases, teachers provided assistance at too early a stage in the process; this intervention resulted in a missed opportunity for learners to develop important analytical skills. This tendency to intervene too soon should be resisted.
- There is very good practice in relation to assessment. There was much evidence of Assessment for Learning (AfL) techniques with teachers providing constructive feedback and advice to students on how to improve. It is suggested that these be extended to using AfL as a means of motivating students.
- Students demonstrated that good learning was taking place. Teachers were affirming, supportive and encouraging. Students responded well as their efforts were frequently praised. In all the lessons observed students participated and engaged well with the planned learning activities.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetable provision for Mathematics is good. A wide range of resources is available and there is very good access to ICT for the subject. Teachers have actively engaged in the

creation of resources; these are shared amongst the teaching team and are used to enhance learning.

- Students are currently assigned to ability levels, on the basis of pre-entry assessments, at the beginning of first year. The school has decided to change this arrangement for the next academic year by assigning students to mixed-ability class groups in first year; this is a positive development, particularly in the interest of increasing higher-level uptake. Whole-school training on differentiation of learning should be considered in preparation for this change. It is recommended that a review of the effectiveness of this measure be carried out in due course.
- Mathematics lessons are concurrently timetabled in the senior cycle; this is valuable in allowing students to change level where necessary. Concurrent timetabling is provided for some junior cycle class groups. However, the arrangements for level choice in the junior cycle need to be reviewed in order to ensure that each student has access to a level appropriate to his ability. Second and third-year mathematics lessons should be timetabled concurrently in the coming year, if possible. Where there are students of more than one level in a class group both levels should be taught.
- There is good rotation of higher level Mathematics in both the junior and senior cycles. Attendance at continuing professional development (CPD) courses is good and is strongly supported by school management.
- A high level of support is provided for students with special educational needs and for students for whom English is an additional language.
- Good opportunities are provided for students to participate in mathematics-related extracurricular activities.

PLANNING AND PREPARATION

- The members of the mathematics department have engaged very well in planning for the subject. Meeting time is provided once per term as part of the whole-school planning process. Formal meetings of the full teaching team or particular groups are held frequently at lunchtime and much informal planning takes place. A coordinator has been appointed and this position is rotated periodically among the team members.
- Preparations for the introduction of *Project Maths* are well advanced and timely planning has begun for the introduction of next year's strands. It is good that the syllabus documents, the teaching and learning plans provided by the *Project Maths* development team, and teacher-generated resources are the main influences in the design of the programmes of work for the *Project Maths* strands delivered. The high level of collaboration amongst department members has contributed to the successful implementation of strands one and two of the new syllabuses.
- The mathematics teachers engage in self-evaluation through reviewing their practice; this valuable work assists them in planning for the development of the subject. They complete an analysis of the students' achievements in the subject at the certificate examinations and this informs the review process.
- The mathematics plan contains all of the relevant policy documents and common programmes of work for each year group and level. The programmes of work for most year groups are content orientated; however, it is good that the *Project Maths* sections refer to the learning outcomes of the syllabuses.

- The content of the TY mathematics programme provides a good combination of syllabus and non-syllabus material. It is suggested that a module of Applied Mathematics be considered for inclusion in TY.

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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