

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Mathematics
REPORT**

**St Mary's Holy Faith Secondary School
Killester, Dublin 5
Roll number: 60791A**

Date of inspection: 21 January 2015



**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	20 th and 21 st January 2015
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with acting principal, acting deputy principal and teachers• Interaction with students	<ul style="list-style-type: none">• Observation of teaching and learning during six class periods• Examination of students' work• Feedback to acting principal, acting deputy principal and teachers

MAIN FINDINGS

- The quality of teaching and learning in the majority of lessons observed was very good, with many examples of excellent practice noted.
- The quality and diversity of the information and communication technology (ICT) observed throughout the evaluation were very good.
- Very high-quality learning was evident in almost all lessons with students engaging and participating very well.
- Student behaviour was observed to be exemplary in all classrooms visited.
- Very good support is provided for students experiencing difficulty with Mathematics.
- The quality of subject planning is excellent.

MAIN RECOMMENDATIONS

- Strategies to ensure that students are provided with a level of challenge appropriate to the progress they are making in their learning should be included in all lessons.
 - Teachers should take the opportunity to observe each other's lessons as one means of sharing good practice and encouraging continuous improvement.
 - The data available in the school from diagnostic tests and information from the primary schools should be included in the school's analysis of students' achievement.
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INTRODUCTION

St. Mary's Holy Faith, Secondary School, Killester is a Catholic voluntary secondary school with a current enrolment of 346 girls. The Junior Certificate, Leaving Certificate and Leaving Certificate Vocational programmes are provided. Transition Year (TY) is optional for students.

TEACHING AND LEARNING

- The quality of teaching and learning in the majority of lessons observed was very good, with many examples of excellent practice noted. In one lesson, however, while there were some strengths identified, there was significant scope for improvement.
- Teacher explanations and instructions were clear. All lessons began with teachers sharing the learning intentions with the students. Good practice was evident in the way in which teachers assessed students' progress throughout and at the end of lessons.
- In all lessons, there was evidence of effective preparation of resources for teaching. In the very good lessons observed teachers had also planned strategies to encourage students to develop a deeper understanding of the Mathematics taught. Examples include using investigation in a lesson on complex numbers, using visuals to explore the concept of ratio and choosing questions carefully to challenge students and to get them to think. There was significant scope in one lesson observed for planning of this nature.
- The quality and diversity of the ICT observed throughout the evaluation were very good. Interactive mathematics software, geometry animations, quizzes and excellent visuals were used as an integral part of teaching and learning. This added variety to lessons and had a positive effect on students' attention and on their learning.
- Very good differentiation practices were noted in most of the lessons observed. These included using methodologies that allowed students to work independently or in pairs, providing individual attention to students experiencing difficulty and giving additional work to early finishers. In some instances, however, there was scope for further use of these strategies in ensuring that all students are provided with a level of challenge appropriate to the progress they are making in their learning. Therefore, the very good differentiation practices observed should be extended to all lessons.
- In most lessons, teacher explanations focused on exploring the concepts underlying the Mathematics taught. This good practice will contribute positively to students' ability to tackle *Project Maths* questions with confidence. There was a need in one lesson for students to be provided with opportunities to develop independent thinking skills by working on new material without prior examples. In another lesson, there was a significant over-focus on the procedural aspects of the work at hand.
- Very high-quality learning was evident in almost all lessons observed. Students engaged and participated very well. Students' interest in the subject was evident in their asking and answering of questions and in the quality of the discussions that they had with their teachers and with each other. Student questions highlighted, in one lesson, a high level of confusion with the concepts taught. It is recommended, therefore, that teachers ensure that the students develop good conceptual understanding of all of the Mathematics taught.
- Student behaviour was observed to be exemplary in all classrooms visited. The relationships between students and their teachers were warm and encouraging.
- Very good use was made of key words to explain mathematical concepts in some lessons. However, this is an area for development overall. It is recommended, therefore, that

teachers model the use of accurate mathematical terms and encourage students to use them on a day-to-day basis. This is recommended to provide students with the experience they need to meet the literacy demands of the subject.

- The quality of assessment was very good. Assessment for learning (AfL) strategies such as *mini-whiteboards* and *traffic lights* were used to effectively assess learning. In addition, teachers monitored learning very well through observation and questioning. Teachers routinely provided feedback on how students could improve the quality of their work. Best practice was noted where teachers used higher-order questions to encourage students to think. This should be extended to all lessons.
- Teachers should take the opportunity to observe each other's lessons as one means of sharing the good practices outlined in this report and encouraging continuous improvement.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetable allocation, arrangements for level choice and the provision of resources including ICT to support teaching and learning in Mathematics are very good.
- With the exception of a small group of students who have been identified as requiring extra support in Mathematics, students are assigned to mixed-ability class groups in first year. Consideration should be given to keeping all first years in mixed-ability classes groups with in-class support.
- Students are assigned to higher and ordinary level groups from second year onwards. In order to ensure the communication of high expectations in Mathematics, students should remain in higher-level classes for as long as possible.
- Very good support is provided for students experiencing difficulty with Mathematics through small-group withdrawal and the creation of small classes. Team teaching was introduced to two fifth-year classes this year with great success. It is recommended that this be extended.

PLANNING AND PREPARATION

- The mathematics teachers meet formally once per term to organise the work of the subject department. Informal collaboration on lesson ideas and methodologies also takes place. There is a co-ordinator for the subject and this position is filled on a rotational basis, which is good practice.
- The quality of subject planning is excellent. Programmes of work for all year groups and levels have been developed. These are set out in terms of learning objectives, methodologies, resources and assessment and are in keeping with best practice. The programmes of work and the lessons observed indicate that a wide range of resources is used in the teaching of the subject.
- Members of the mathematics department complete an analysis of the students' achievement in the certificate examinations compared to national norms. In keeping with very good practice, this analysis is used to inform teaching and learning. It is recommended that the data available in the school from diagnostic tests and information from the primary schools be included in this analysis to provide a more comprehensive perspective on student achievement.

The draft findings and recommendations arising out of this evaluation were discussed with the acting principal, acting deputy 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, 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 welcomes the positive report of the Subject Inspection of Mathematics.

The Board is happy that the quality of teaching, involving effective use of ICT and AFL methodologies, has been recognised and is pleased that teachers' ongoing commitment to professional development is yielding such good results.

The Board is equally pleased to note that the inspection found evidence of very high-quality learning with good student participation. It also notes with pride that exemplary behaviour was observed in all classrooms visited.

These positive findings are underpinned by the excellent quality of subject planning in Mathematics, which the inspection also noted.

Given our commitment to continuous school improvement, the Board welcomes the recommendations of the report and are pleased to outline below the steps to implement them.

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 practice of Team teaching, which was introduced this year in Fifth Year and is working well, will be extended to other years as soon as resources allow. Teachers will also consider how they can best share good practice, including peer observation. Planning has begun within the Mathematics Department for collaborative lesson planning and peer observation of lessons.

Differentiation strategies will be further developed to provide an appropriate level of challenge to each student in class. This will complement the extensive co-curricular activities that take place at the moment in Mathematics in St Mary's, including the IMTA and Prism competitions and a whole school Mathematics week

Analysis of outcomes is part of our school improvement plan and will make increasing use of all available data. The comparison of results in the State Examinations with national averages will extend to include a comparison with STEN scores from 2015.