

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection of Mathematics
REPORT

St Mary's CBS
Enniscorthy, County Wexford
Roll number: 63560T

Date of inspection: 16 September 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	15 and 16 September 2015
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 nine class periods• Examination of students' work• Meeting with support teacher• Feedback to principal and teachers

MAIN FINDINGS

- In the majority of lessons, the quality of teaching and learning was good or very good, with some exemplary practice observed in some cases and scope for improvement noted in a small minority of lessons.
- Very effective use was made in many lessons of assessment for learning (AfL) strategies.
- In lessons where best practice was noted, students were active in their learning and teachers provided opportunities for the sharing of ideas.
- Overall timetabling arrangements are very good.
- A wide range of co-curricular and extra-curricular mathematics opportunities are available to students.
- Subject department planning is very good and the department has identified effective teaching methodologies for three common mathematical areas.

MAIN RECOMMENDATIONS

- Higher-order questioning strategies that challenge and deepen students' understanding and learning should be used more often in all lessons.
 - Strategies that increase the student voice in all lessons and encourage confidence in Mathematics should be developed.
 - The mathematics department should make greater use of assessment data results available within in the school to support Mathematics.
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INTRODUCTION

St. Mary's C.B.S. operates under the trustee of the Edmund Rice Schools Trust. It is a voluntary secondary school for boys with a current enrolment of 676 students. The school provides the Junior Certificate, an optional Transition Year (TY) programme, the established Leaving Certificate, the Leaving Certificate Vocational Programme (LCVP) and the Leaving Certificate Applied (LCA).

TEACHING AND LEARNING

- In the majority of lessons, the quality of teaching and learning was good or very good, with some exemplary practice observed in some cases and scope for improvement noted in a small minority of lessons.
- Most lessons began with teachers sharing the learning intentions with their students and time at the end of the lesson was used to check and review progress made. This very good practice should be extended where appropriate.
- Assessment for learning (AfL) practices were observed in lessons. For example, the use of the “traffic light” system allowed students to be involved in assessing their progress while providing the teacher with a quick overview of where support was necessary.
- A range of mostly very effective methodologies was used including problem-solving activities, whole-class teaching and paired work. Best practice was observed where group work was purposeful and well-structured and characterised by students having a clear understanding of their roles and responsibilities. During group activities teachers circulated and intervened to offer support and guidance where necessary.
- In a small minority of lessons, where teacher-led instruction dominated it impacted on students becoming active in their learning and limited the student voice within the lesson. It is therefore recommended that, during subject department meetings, teachers discuss and share the most appropriate methodologies that prove successful in the teaching of various syllabus topics.
- Effective questioning strategies included the use of both lower and higher-order questions, facilitating the constant challenging of students. During a consolidation lesson on highest common factor and lowest common multiple excellent use was made of questions to probe students' understanding of mathematical concepts. In line with best practice, students were encouraged to extend their answers and an appropriate amount of time was given to prepare their answers. Such practices should be extended to all lessons.
- Many classrooms had an array of visuals to support and enhance the learning environment for students. The layout of some classrooms was commended as it supported opportunities for collaborative practices. A range of resources was successfully integrated into lessons including the use of Geogebra and show me boards. Teacher-prepared supplementary material was mostly very effective and included reflection sections.
- A review of students' copybooks indicated that formative written feedback is being provided by most teachers. However, this practice should be extended so that all students are given clear direction on how their work can be improved.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetabling arrangements are generally very good. Concurrent timetabling of Mathematics takes place from second year onwards. Concurrent timetabling facilitates

team teaching in TY. In so far as is possible, management timetables daily contact with the subject. However, this year this has not been feasible for second-year mathematics classes.

- Arrangements that support students' access to the appropriate level are very good and students are encouraged to participate at the highest level possible. To this end, this year, an additional fifth-year class grouping has been created comprising students who did not study higher level at junior cycle.
- Practices in relation to identifying and supporting students in need of additional mathematics support are very good. Models of support include withdrawal, where small group support or individual support is provided. In addition, small classes have been created for Mathematics in the majority of year groups, through the deployment of an additional teacher.
- Nine teachers are deployed to teach Mathematics with two additional support teachers also deployed to the subject. To ensure capacity building within the mathematics department, teachers rotate the teaching of programmes and levels, and this is very good practice. Commendably, all teachers of Mathematics are graduates in the subject and some have completed up skilling programmes ensuring availability of teachers to teach to the highest level.
- The majority of the nine mathematics teachers, teach only two or three class groups. Management should work toward reducing the numbers in the department, which should facilitate each member having significant teaching contact with the subject.
- Very good practices are in place to promote Mathematics within the school. Participation in mathematical competitions and events arranged during Maths Week and through the Irish Mathematics Teachers Association (IMTA) is encouraged. Students also participate in Maths Olympiads and some are identified to participate in courses organised by the Centre for Talented Youth in Dublin City University.
- Continuing professional development is promoted and supported by management. School management pays the membership IMTA and facilitates attendance at national Project Maths in-service. In addition, the mathematics department has benefited from an in-school visit from a regional development officer (RDO) which facilitated the identification of areas for development.

PLANNING AND PREPARATION

- In line with good practice the position of coordinator is rotated among members of the department. Time for subject planning has been made available and minutes of meetings are very informative. In order to build on the very good progress made to date the mathematics department and management should explore ways to facilitate on-going collaborative subject department planning.
- Overall planning for Mathematics is very good and the plan includes the organisational details and yearly schemes of work. Following the visit from the RDO the mathematics department is focusing on three effective teaching methodologies and actions to address. This is very good practice. To progress planning areas as identified during the evaluation it is recommended that action plans be developed to support and progress such work.
- An analysis of students' achievement in the certificate examinations is prepared for the department. It is recommended that the mathematics department make greater use of the available data gathered from competency testing, attainment in examinations and other

diagnostic test results available within in the school to progress the overall subject plan aims and the mathematics curriculum for its students.

The draft findings and recommendations arising out of this evaluation were discussed with the principal, 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

Part A: Observations on the content of the inspection report

The Board is pleased that the quality of teaching and learning in our mathematics lessons was deemed to be good or very good and that some exemplary practice was observed.

The whole school evaluation-MLL report, published in October 2013, made two key recommendations for school improvement, namely development of Assessment for Learning techniques and the use of active teaching methodologies and it is encouraging that the inspection in mathematics observed the progress made in these areas.

Assessment for Learning practices were observed in lessons including the sharing of learning intentions at the beginning of a lesson and referring back at the end of a lesson; effective questioning strategies were observed which included the use of both lower and higher order questions; and a review of students copybooks indicated that formative written feedback is being provided by teachers. Active teaching methodologies were also in evidence including problem solving activities, whole class teaching and paired work.

Part B: Follow-up actions planned or undertaken since the completion of the inspection activity to implement the findings and recommendations of the inspection

The school has set out the development of Assessment for Learning practices as its third element of School Self-Evaluation. The school has engaged the services of an education expert to provide a theoretical background to Assessment for Learning and to guide our planning group in its work. There will be a particular focus on the use of questioning with the view of challenging and deepening students understanding and learning. This work will also focus on increasing the student voice in all lessons and encouraging confidence in Mathematics.

The Mathematics department will be furnished with relevant assessment data to enable them to plan appropriate responses to any deficiencies that may be evident. The school carries out a mathematics competency test with all first year students which also identifies key strengths and areas for development. Other data sources available include standardized test scores received from primary schools and the results of the CAT4 tests administered in the first term of first year.

