

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Mathematics
REPORT**

**St Andrew's College
Booterstown Avenue, County Dublin
Roll number: 60650F**

Date of inspection: 18 September 2012



**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	17 and 18 September 2012
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 eleven class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- The quality of teaching ranged from good to very good, and some exemplary practice was noted.
- The mathematics department presented as a collaborative and supportive team of teachers who work in a professional manner to promote and develop Mathematics in the school.
- There is excellent support from school management for Mathematics; however the timetable does not allow for daily contact with the subject.
- Students have access to a wide range of co-curricular and extracurricular Mathematics activities in the school.

MAIN RECOMMENDATIONS

- To build on the good practice observed, teachers should include a greater range of active methodologies, and these should allow for appropriate differentiation.
- Management should review the timetabling of Mathematics with reference to the guidelines for Project Maths given in Circular 0058/2011.

INTRODUCTION

St Andrew's College is a co-educational fee-charging second level school in south County Dublin. It has a current enrolment of 500 boys and 484 girls. The school offers the Junior Certificate (JC), the Leaving Certificate (LC) and a compulsory Transition Year (TY).

TEACHING AND LEARNING

- During the two-day evaluation a range of year groups, levels and programmes were observed. Three double class periods and five single class periods were observed. The quality of the teaching and learning observed was good or very good, with some exemplary practice. Teachers demonstrated a very strong commitment to the subject and were open to suggestions and recommendations.
- In almost all instances, learning objectives were shared with students at the outset of the lesson. In a few instances, teachers revisited the lesson objectives at the end of the lesson to assess what learning had taken place. This good practice should be extended to all lessons.
- Teachers were well prepared for their lessons with supplementary materials prepared in advance and introduced at key junctures in the lesson. Good practice was observed where teachers and students frequently used subject-specific terminology in lessons.
- In the majority of lessons, teaching was traditional in nature, and was mostly of a high standard. In fewer than half of the lessons observed, a Project Maths approach was used. This more active approach provided opportunities for students to work in pairs and to share and discuss the solution to questions. It is recommended that all teachers integrate more Project Maths approaches into all Mathematics lessons.
- Students generally received clear instruction about classroom tasks assigned to them. However, in some instances, the tasks assigned to students were not sufficiently differentiated nor were specific timeframes assigned. In this respect, it is recommended that teachers carefully select a range of differentiated questions that will challenge all students to achieve within a specific timeframe.
- The effective use of higher-order questions was noted where probing statements such as “why” or “what do you think?” frequently featured. However, in a small number of lessons, students’ individual questions were answered by the teacher rather than being utilised as whole-class learning opportunities.
- The majority of teachers are classroom based. Most classrooms are organised in a traditional layout, where students are seated in rows. Consideration should be given to the clustering of desks as this would facilitate students to work collaboratively and further support Project Maths approaches.
- Many classrooms had displays of students’ project work and commercially sourced posters. However, there is scope in some classrooms for additional visual aids. In many instances, effective use was made of the available information and communication technology (ICT). The visual representation of statistical information significantly enhanced the learning experience for students in a junior cycle lesson. In other lessons the available ICT resources would have supported and enhanced students’ learning but were not used.

- Regular monitoring of students' progress takes place. Many teachers provide oral feedback during the lessons. In addition, formative assessment was observed in many students' written work.
- The vast majority of students take higher level Mathematics at both JC and LC. Student performance at this level is very good.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Overall, timetabling of Mathematics is good. This includes concurrent timetabling of Mathematics from first year onwards and the deployment of additional teachers to the subject. All year groups have an allocation of one double period and three single periods of Mathematics per week, resulting in contact on four of the five days of the week. This is not ideal, as daily contact with the subject is more desirable. A review of such timetabling practices should be undertaken, particularly in light of Circular 0058/2011.
- Mathematics classes are formed using a variety of methods intended to support the school's ethos of "personalised learning". For example, first-year students are assigned to mixed-ability mathematics classes until Christmas after which banding of classes takes place. In other years, a combination of banding and setting is used. Ongoing monitoring of such practices is recommended to ensure that students are placed where they will best realise their potential. Consideration should be given to continuing mixed ability for the entire year for first-year students.
- The mathematics department comprises twelve mathematics teachers, all of whom are subject specialists. Teachers are given opportunities to rotate the teaching of levels and programmes, thus maintaining and developing capacity within the department. This is good practice.
- There is excellent support from school management for Mathematics. Teachers are facilitated to engage in CPD, a budget is available to the mathematics department and management pays the annual subscription for membership of the Irish Mathematics Teachers Association. A dedicated office for the mathematics department has been provided within which subject-specific material and resources are retained.
- The learning support department liaises closely with the mathematics department to support the numeracy needs of students. In line with best practice, the most appropriate model of provision is identified to suit an individual's need and may include one-to-one or group support, a short period of intervention or team teaching.
- Varieties of co-curricular and extracurricular activities are available to students to experience Mathematics outside of the classroom context. For example, events are arranged during Maths Week and World Maths day, and students participate in the Irish Maths Olympiads.

PLANNING AND PREPARATION

- The co-ordination of the mathematics department is very effective and allows very good collaborative practices to be progressed. The position of coordinator is rotated among colleagues and a range of roles and responsibilities associated with the role have been established. Regular department meetings take place and minutes of the meetings are

retained. To build on the good practices, discussion should take place at meetings about formalising strategies for the teaching of common topics.

- Subject department planning is very well advanced and schemes of work have been devised for all year groups, levels and programmes. Some additional refinement of these schemes should be undertaken to allow for closer alignment of topics within the different levels.
 - The TY Mathematics programme should be reviewed as the current plan focuses primarily on Leaving Certificate material. Consideration should be given to a modular based programme.
 - Ongoing development within the school of a virtual learning environment should support the work of the mathematics department, particularly as a means of sharing and storing common resource materials. To date some shared materials have been uploaded to this site.
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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.

Published March 2013.

Appendix

School response to the report

Submitted by the Board of Management

Area 1: Observations on the content of the inspection report

In response to the 'Report on the Quality of Learning and Teaching in Mathematics' for St. Andrews College issued on 17th January 2013 we were satisfied and agreed with most of the points and recommendations made. However there were a couple of points that we would like to respond to. Firstly with regards to your suggestion that "consideration should be given to continuing mixed ability for the entire year". We feel that given the size and the diverse range of backgrounds and ability of our student population that streaming of students at Christmas is beneficial to all pupils. We find students work much better within their own ability range and that it improves their self esteem and their confidence within the subject. Secondly we agree with the suggestion that in Transition Year "consideration should be given to a modular based programme". Prior to the introduction of the Project Maths course we offered a broad range of mathematical topics outside the curriculum. However, due to the increased time demands of the new course we have had to reduce the number of modules. As the Project Maths course is in its infancy our scope and sequence for Transition Year is constantly under review.