

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Mathematics
REPORT**

**Castleknock Community College
Castleknock, Dublin 15
Roll number: 76062B**

Date of inspection: 17 May 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	16 th and 17 th May 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 nine class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- Overall the standard of teaching and learning was very good in the lessons observed.
- All lessons were very well planned and prepared and the use of information and communications technology (ICT) was consistently very good.
- Most teachers took a conceptual approach in exploring the core ideas underlying the Mathematics taught.
- Assessment practices were very good.
- There was much evidence to show that the school is innovative in its commitment to embracing new technology and approaches that enhance classroom practice.
- The mathematics department has engaged very well with planning for the subject and an excellent mathematics plan has been developed.

MAIN RECOMMENDATIONS

- The very good practices observed in encouraging students to engage in strategic, logical thinking should be extended to the teaching of all mathematical concepts.
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INTRODUCTION

Castleknock Community College is a co-educational school under the patronage of County Dublin Vocational Education Committee. It has a current enrolment of 1,115 students. The Junior Certificate, the established Leaving Certificate, the Leaving Certificate Vocational and the Leaving Certificate Applied programmes are offered in the school. Transition Year (TY) is optional for students.

TEACHING AND LEARNING

- The quality of teaching and learning in four lessons observed was excellent and in three others was very good. While there were significant strengths in the standard of teaching in two lessons observed there was scope for a more student-centred approach to enhance the quality of learning.
- All lessons were very well planned and prepared. Teacher explanations and instructions were very clear. The learning outcomes were outlined and were central to the lessons' activities. Where students were preparing for examinations, teachers provided much encouragement and very sound advice.
- A wide range of very good materials was used to support learning. There was consistent very good use of ICT across the department; this is particularly good in light of the fact that interactive whiteboards have only recently been fitted in all classrooms.
- Most teachers took a conceptual approach in exploring the core ideas underlying the Mathematics taught. This was particularly effective in one lesson on co-ordinate geometry where the students worked on examining the basic ideas presented until the ideas made sense before the general mathematical formulae were generated and used by the students themselves. In three other lessons students were provided with too much initial support by being given a conceptual breakdown of the strategic elements of the tasks at hand. The students then worked on the routine parts of the problems without having the opportunity to think strategically for themselves. More widespread use of the good practices described above is recommended.
- There were high levels of student engagement in most lessons with student-centred activities planned. Best practice was noted where very good collaboration between students and their teacher meant that there was a very strong sense of teamwork. In a small minority of cases teacher input dominated the work of lessons and there was scope for a better balance between student activity and teacher talk. It is, therefore, recommended that the good balance observed in most lessons be extended to all lessons.
- Assessment practices were very good. There was much evidence of Assessment for Learning (AfL) and student self-evaluation.
- There was very good practice observed in relation to differentiation of learning. Teachers provided individual attention to any student experiencing difficulty; additional and more challenging work was provided in most lessons for those who had finished their work and in some lessons activities that facilitated independent learning allowed students to work at their own pace.
- The atmosphere in each of the classrooms visited was conducive to encouraging confidence with the subject and the relationships between students and their teachers were warm and respectful. In all lessons there was an emphasis on making Mathematics fun for students.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetable provision and arrangements for level choice for Mathematics are very good. There is excellent provision of resources and ICT for the subject also.
- Students are assigned to mixed-ability mathematics classes for first year and for TY; levels are set in every other year. Concurrent timetabling is provided in all years where students are placed in higher and ordinary level groups to allow them the flexibility to study the subject at a level appropriate to their ability. Strong encouragement is given to students to study Mathematics at the highest level possible for as long as possible. All of this good practice has contributed to high uptake levels for higher-level Mathematics in both the Junior and Leaving Certificate examinations.
- Very good provision is made for students who have been identified with additional educational needs in Mathematics.
- School management actively encourages teachers to engage in continuing professional development (CPD) and facilitates attendance at subject specific and whole-school CPD events.
- An extensive programme of extracurricular mathematical activities is available in the school to encourage students' interest in the subject and to provide additional stimulation for better able students.
- There was much evidence that the school is innovative in its commitment to embracing new technology and approaches that enhance classroom practice. For example, there is extensive provision and use of interactive whiteboards.
- School management is creative in its approach to monitoring students' progress and plays a central role in motivating students to reach their potential.

PLANNING AND PREPARATION

- The mathematics department has engaged very well with planning for the subject. There are two co-ordinators for the subject department and it is good that these positions are rotated. In keeping with excellent practice members of the mathematics department and teachers from the main feeder primary school collaborate on ensuring that the students' transition from primary to post-primary Mathematics runs as smoothly as possible.
- The work of the mathematics department is subject to evaluation under the school's overall self-evaluation procedures. This involves rigorous analyses of student achievement in in-house examinations and the certificate examinations in comparison with national norms, intake data and performance in other subjects. Students set personal targets and their progress on the achievement of their targets is monitored by mathematics teachers. Regular discussion takes place between students, members of the mathematics department and the senior management team on how this evaluation can bring about improvements. All the above practices are very good.
- An excellent subject plan has been developed. It includes programmes of work for each year group and level, the relevant school policy documents adapted for Mathematics, and a number of research articles of mathematical and educational interest. It is very good that the teaching and learning plans and teacher handbook produced by the *Project Maths* development team and the syllabus documents are central to the programmes of work. In

keeping with very good practice a very wide range of resources is available on the school's computer system. It was evident throughout the evaluation that the valuable planning work undertaken to date has contributed to a high level of consistent good practice across the subject department.

- The TY plan comprises a very good variety of topics and approaches and is in keeping with the spirit of a good TY programme. As Applied Mathematics is provided on the school's curriculum, a module of Applied Mathematics is suggested for TY to encourage interest in the subject.

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

Area 1: Observations on the content of the inspection report.

Management and Staff were very happy to welcome the inspector to our College to conduct the Mathematics Inspection. At all times the inspector demonstrated her professionalism in her dealings with the senior management team, the staff of the Maths department and our students. The experience was very positive for all.

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 Maths Department continue to work on schemes of work, subject planning, developing materials and sharing best practice as was commented on in this report. Currently, the Maths Department are embedding the key skills in their subject planning and this work will be on-going. The Maths teachers are fully committed to involvement in appropriate continuous professional development.