

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection of Mathematics
REPORT

Terenure College
Templeogue Road, Dublin 6
Roll number: 60570H

Date of inspection: 6 December 2012



AN ROINN | DEPARTMENT OF
OIDEACHAIS | EDUCATION
AGUS SCILEANNA | AND SKILLS

**REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN MATHEMATICS**

INFORMATION ON THE INSPECTION

Dates of inspection	5 and 6 December 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 eight class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- The teaching observed was mostly of a good quality though largely traditional in nature.
- In most instances, students were engaged in their work and good learning took place.
- There is very good support from management for Mathematics.
- There were some examples of Project Maths approaches in a small number of lessons; however, greater progress in this area is necessary.
- Individual teacher preparation for lessons was very good but there is scope for developing collaborative planning practices.

MAIN RECOMMENDATIONS

- Teaching approaches and questioning strategies that promote learning for understanding should be used more frequently in all lessons.
 - School management should review class-formation practices and procedures for Mathematics.
 - Schemes of work containing specific references to Project Maths strands should be developed collaboratively.
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INTRODUCTION

Terenure College is a boys' fee-charging second level school with an enrolment of 693 students. The school offers the Junior Certificate (JC), Leaving Certificate (LC), and a compulsory Transition Year (TY).

TEACHING AND LEARNING

- During the two-day evaluation eight lessons were observed allowing for all year groups, levels and programmes to be visited. The quality of teaching observed was mostly good, although traditional teaching approaches dominated. There is further scope for the use of active methodologies that would allow students to develop skills and competencies for the learning of Mathematics for understanding.
- Good practice was observed where links were made between prior and current learning and, in some instances, between sections of the syllabus. In some lessons, the learning intentions were stated at the beginning. In a small number of instances, teachers reviewed the learning objectives at the end of the lesson to ascertain what learning had taken place. These practices of sharing and reviewing lesson objectives should be undertaken in all lessons.
- Whole-class teaching was observed in the majority of lessons, and was mostly used to good effect. In a small number of lessons, very effective use was made of group work or problem-solving activities. These activities provided students with opportunities to work independently, to share and discuss the topic at hand. It is recommended that methodologies such as those engaged with during Project Maths in-service be integrated more frequently into lessons.
- Effective use of higher-order questions was evident in some lessons. Probing questioning provided students with opportunities to justify their answers. In other lessons, global questions were overused and resulted in some students becoming passive. Therefore questioning strategies that engage all students and provide a range of learning challenges should be integrated into all lessons.
- In most instances, students were engaged in their work and good learning took place. However, a few students were uncooperative to an extent that impacted on the planned objective for the lesson. Senior management dealt swiftly with this breach of the code of behaviour once this was reported. A school-wide discussion focusing on students' responsibilities for their own learning would be worthwhile.
- In almost all classrooms visited, no visual aids to support or enhance the learning environment were evident. Some student-developed posters and project work were observed during the evaluation. Given the potential that such resources have to support Mathematics, it is recommended that a print rich environment is developed to support students learning.
- In most lessons, the main resources used were textbooks and teacher-prepared supplementary materials. In addition, information and communication technology (ICT) was used in many lessons as a resource and in some lessons as a learning tool. Time at department meetings should allow members to share their expertise in this area with a view to further developing the use of ICT as a learning tool in Mathematics classes.
- There is scope for development in assessment practice. More consistent practice regarding formative assessment is advisable. Some teachers provide written comments in

copies and on assessments while others provide individual oral feedback during the lesson. Discussion should take place at department meetings to agree procedures regarding best practice in this area, including written feedback indicating areas for development for students.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetabling arrangements for Mathematics are very good. These include daily contact with the subject for all year groups and concurrent timetabling of Mathematics.
- It is school policy that students are classroom based. School management should consider assigning classrooms on a subject or teacher basis, this should further support the integration of visual aids, posters and the display of student work into the teaching and learning of Mathematics.
- Almost all mathematics students are taught in mixed-ability classes for first year and from second year onwards students are streamed for Mathematics. One class grouping of Mathematics is arranged in each year to support students identified as finding Mathematics challenging and is timetabled concurrently with mathematics classes. Movement between streams may occur where students' progress merits it. It is recommended that practices and procedures for class formation be reviewed, to ensure that all students are placed in a class that will best realise their full potential.
- The mathematics department comprises twelve teachers, the majority of whom are graduates in the subject. Rotation of levels takes place among teachers at junior cycle; three teachers share the rotation for teaching higher level at senior cycle. Given the increasing uptake of higher level, management should ensure that there will be sufficient capacity within the department.
- Management is very supportive of the mathematics department. Requests for subject-specific resources are sanctioned and teachers are facilitated to attend continuing professional development courses. Further planning among the mathematics department should allow for the identification of additional resources to support teaching and learning of Mathematics. The new school library could be used as a resource for mathematics reference materials.
- In recent years, students have competed in co-curricular and extracurricular mathematics events including Irish Mathematical Olympiads and Team Maths. To further promote Mathematics and the long-term development of the subject, consideration should be given to encouraging students to participate in national mathematics events. Events organised by the Irish Mathematics Teachers Association, the Central Statistics Office and during Maths Week should be considered.

PLANNING AND PREPARATION

- The position of coordinator of Mathematics is attached to the school's schedule of posts of responsibility. This results in the coordination and associated duties of Mathematics remaining with one member of the department. Consideration should be given to rotating the coordination of the subject among members of the department. In this way all within the department would have an opportunity to share in the responsibility for the organisation and management of a subject department.

- Planning time is facilitated by management for Mathematics and minutes of meetings are retained. Time at department meetings should be apportioned to sharing effective teaching strategies, and discussion and agreement on teaching techniques to teach common topics. In this way common areas within the syllabus and cross-curricular approaches to teaching certain mathematical procedures can be devised while supporting a school numeracy strategy.
 - The mathematics department has developed schemes of work for each year group and level but the majority are based on textbook chapters. It is therefore recommended that all schemes be reviewed with specific reference to the relevant Project Maths strands. In this way a clear focus should be evident regarding key skills and competencies that a student will acquire in each year for Mathematics.
 - The TY scheme should also be reviewed to include areas of study that are currently being undertaken but not recorded. Consideration should be given to devising a modular programme for Mathematics in TY.
 - Teachers were well prepared for lessons and all materials and resources were available at hand.
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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, and the response of the board will be found in the appendix of this report.

Published June 2013.

Appendix

School response to the report

Submitted by the Board of Management

Area 1: Observations on the content of the inspection report

Terenure College welcomes the maths inspection report and are pleased with many of its key findings; in particular, that students were mostly engaged with their work and that good learning takes place. This we feel is well reflected in all recent sets of results at Leaving Cert and Junior Cert level.

We are also pleased to note the finding that “individual teacher preparation for lessons was very good” and the Maths Faculty has already initiated plans to develop greater collaborative planning practices as well as the adopting of schemes of work to ensure they contain specific references to project maths strands. A greater consistency in written feedback to pupils will be adopted in future.

We are pleased to see that the report notes that practically all first year students are taught in mixed ability classes and we are particularly confident that our current systems allow all students to realise their full potential. Again, the results speak for themselves in this regard.

The Maths faculty will continue to identify any topics that would benefit from a common approach and have designated a member of their faculty to co-ordinate this.

We are glad that management are seen to be very supportive of the mathematics department in the school, sanctioning resources and facilitating teachers to attend continuing professional development courses. The new school library will have a number of mathematical texts before next September.

It continues to be school policy to have student-based classrooms which the College believes creates a more stable learning environment and promotes the building of community. However, the Mathematics faculty will begin to introduce more visual aids in these classrooms from next September.

This inspection and this report have had a revitalising effect on all within the Maths Faculty which was already achieving considerable results consistently at a high level over several years. There are a number of ideas we intend to take on board as soon as possible. The next few years are likely to be most interesting. All things considered this inspection and its follow-up report were most helpful. It has been a very fruitful exercise.