An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection of Mathematics
REPORT

Athy College,
Athy, County Kildare

Roll number: 70650L

Date of inspection: 20 October 2014

AN ROINN OIDEACHAIS AGUS SCILEANNA | DEPARTMENT OF EDUCATION AND SKILLS

REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN MATHEMATICS

INFORMATION ON THE INSPECTION

Dates of inspection	20-21 October 2014
Inspection activities undertaken • Review of relevant documents • Discussion with principal and teachers • Interaction with students	• Observation of teaching and learning during ten class periods • Examination of students' work • Feedback to principal and teachers • Discussion with the learning-support co-ordinator

MAIN FINDINGS

- The quality of teaching and learning was very good or better in all but one lesson.
- Sharing the learning outcomes at lessons' outset was common practice across the department. In the best cases, the outcomes were presented with great clarity and focussed on enabling the students to access and understand the Mathematics underpinning the lesson content.
- Effective differentiation particularly through the use of high-quality teacher questioning was evident in all lessons. The quality of oral feedback given to students was of a universally high standard while the quality of written feedback was mixed.
- The mathematics department receives very good support from management, is very well resourced and is committed to ongoing continuing professional development.
- Classroom management, student engagement and behaviour were very good in all lessons.
- Subject department planning in Mathematics is of a very high standard.

MAIN RECOMMENDATIONS

- To further enhance the existing very good practice relating to differentiating the lesson content, extension activities designed to expose the students to more open-ended problems and facilitate independent thinking and research should be incorporated as an integral part of lesson delivery.
- In order to bolster the existing processes facilitating student transfer into first-year and to better inform the content and scheduling of the first-year mathematics programme, it is recommended that the *Mathematics Competency Test* available from www.pdst.ie be included as part of the transfer programme.
- In further developing the use of information and communication technology (ICT) in the teaching and learning of Mathematics, consideration should be given to the use of a platform that will allow the students to practise and develop their mathematical skills outside of classroom time.

INTRODUCTION

Athy College is a co-educational post-primary school with 372 students operating under the aegis of Kildare and Wicklow Education and Training Board (KWETB). The school participates in the Delivering Equality of Opportunity in Schools (DEIS) initiative. The school offers the Junior Certificate, the Junior Cycle School Programme (JCSP), Transition Year (TY), the established Leaving Certificate, the Leaving Certificate Applied (LCA) and the Leaving Certificate Vocational Programme (LCVP).

TEACHING AND LEARNING

- The quality of teaching and learning was of the very highest standard in the vast majority of lessons and was very good in all but one of the remainder. A notable feature of the lessons was the commitment of the teachers to the teaching methods promoted by *Project Maths*, the focus on active learning and on ensuring that the students fully understood the material being covered.
- The intended learning outcomes were agreed at the outset of each lessons. The very best lessons were characterised by the clarity of the outcomes and the unrelenting focus on the mathematical principles underpinning the lesson content and the effective integration of resources. This ensured that the lesson content was treated with an appropriated degree of rigour and even the most difficult concepts were made accessible.
- Very good differentiation was evident in all of the lessons. In the most effective cases, teacher questioning ensured that all of the students were provided with opportunities to engage at a high level with the lesson content, suggest alternative approaches to interpreting and solving problems and explain their reasoning. This very good practice would be further enhanced by the use of extension activities designed to expose the students with access to more open-ended problems, facilitate independent thinking and research.
- Classroom management, student engagement and behaviour were universally very good. The atmosphere in the lessons was warm and respectful and purposeful learning was in evidence throughout.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetabling provision for Mathematics is very good. The time allocated to Mathematics generous and the scheduling of mathematics classes is very well balanced and designed to enable students to follow the highest level possible for as long as possible.
- Arrangements for determining the mathematical abilities of students transferring into first year are very good. Following the transfer process, students identified as having special educational needs or requiring learning support are assigned to a discrete class group which follows the JCSP, the remainder are placed in mixed ability classes. While the process works well in determining the composition of the classes in first year it does very little to inform the manner in which the first-year mathematics programme is delivered. In order to bolster the existing processes and to better inform the content and scheduling of the first-year mathematics programme, it is recommended that the *Mathematics Competency Test* available from www.pdst.ie be included as part of the transfer process.
- The mathematics department is very well resourced, particularly in relation to its access to the school's ICT infrastructure. All mathematics teachers are provided with a tablet device and a bank of these devices and other portable technologies are available for student use during lessons. These devices were used to very good effect during many of the lessons

particularly when used by the students themselves to explore concepts and test hypotheses. In further developing the use of ICT in teaching and learning Mathematics, consideration should be given to the use of a platform that will allow the students to practice and develop their mathematical skills outside of class time. Such platforms also allow the class teacher to track student progress and identify areas of weakness.

- The members of the mathematics department are committed to their ongoing professional development and in addition to attending the workshops provided as part of the rollout of *Project Maths*, a number have engaged in post-graduate courses in their own time.
- A whole-school homework policy is in place and practices relating to homework and ongoing assessment are very good. The students' copybooks are well maintained and appropriately monitored and students are given very good oral feedback during lessons. There is, however, scope to improve the quality of written feedback with which they are provided. The homework policy makes no reference to the value of such feedback and only refers to the responsibilities of students in relation to homework practices. To address these anomalies the policy should be adapted to include the need for consistent written feedback and detail the roles and responsibilities of all relevant parties.
- Provision for students with special education needs or in need of learning support in Mathematics is very good. A small, discrete, class group which follows the JCSP is maintained in each year of the junior cycle and in addition to the interventions particular to the programme, further supports including individual and small-group withdrawal are also made available.

PLANNING AND PREPARATION

- Subject department planning in Mathematics is of a very high standard. The department's planning activities are jointly co-ordinated and the co-ordinators collaborate very effectively, provide excellent leadership and contribute hugely to the positive attitude to Mathematics evident throughout the school.
- The subject department plan for Mathematics is comprehensive and arrangements for collaborative planning, including frequent meeting and the use of a virtual learning environment are very good. To ensure that the existing good practice is captured, the mathematics teachers should now use their frequent meetings to discuss what works well in lessons, capture common misconceptions and explore how links between the different curricular strands can be exploited.
- Individual teacher planning was in the vast majority of cases very good. The most impressive element of teacher preparation for lessons was the degree to which they took ownership of the learning outcomes and the quality of the activities selected to achieve them.

The draft findings and recommendations arising out of this evaluation were discussed with the principal and mathematics 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; a response was not received from the board.

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