An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection in Mathematics

REPORT

Ainm na scoile / School name	Saint Mogue's College
Seoladh na scoile / School address	Bawnboy Belturbet County Cavan
Uimhir rolla / Roll number	70360C

Date of Inspection: 02-02-2017

AN ROINN OIDEACHAIS AGUS SCILEANNA | DEPARTMENT OF EDUCATION AND SKILLS

WHAT IS A SUBJECT INSPECTION?

Subject Inspections report on the quality of work in individual curriculum areas within a school. They affirm good practice and make recommendations, where appropriate, to aid the further development of the subject in the school.

HOW TO READ THIS REPORT

During this inspection, the inspector evaluated learning and teaching in Mathematics under the following headings:

1. Learning, teaching and assessment
2. Subject provision and whole-school support
3. Planning and preparation

Inspectors describe the quality of each of these areas using the Inspectorate's quality continuum which is shown on the final page of this report. The quality continuum provides examples of the language used by inspectors when evaluating and describing the quality of the school's provision in each area.

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.

Subject Inspection

INSPECTION ACTIVITIES DURING THIS INSPECTION

Date of inspection	02-02-2017
Inspection activities undertaken • Review of relevant documents • Discussion with principal and key staff • Interaction with students	• Observation of teaching and learning during seven class periods • Examination of students' work • Feedback to principal and relevant staff

SCHOOL CONTEXT

Saint Mogue's College is a co-educational school under the trusteeship of Cavan and Monaghan Education and Training Board (CMETB). There are 231 students enrolled currently. The school provides all programmes with the exception of Leaving Certificate Applied (LCA). Transition Year (TY) is provided as an optional programme for students.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

FINDINGS

- The overall quality of teaching and learning observed was excellent.
- The mathematics teachers collaborate very well in terms of sharing ideas; further means of sharing good practice might be explored.
- Very good use of information and communication technology (ICT) was evident throughout the evaluation.
- School management supports the mathematics teachers to be creative and innovative in their classrooms.
- Mathematics is very well supported at whole-school level.
- The quality of planning for Mathematics is very good; further use of analysis data would benefit the planning process.

RECOMMENDATIONS

- Planning for mathematics provision should be informed by an analysis of each student's achievement in the certificate examinations against intake, attendance and other relevant data.
- Teachers' collaborative practice should be extended to designing and observing lessons.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING AND LEARNING

- The overall quality of teaching and learning observed was excellent. The consistent nature of the good practice indicated that the teachers engage in a high level of collaboration in order to share ideas and resources. In a small number of lessons, while the overall practice was

very good, there was a need to encourage students to be more independent and, in one lesson, some students required more challenging tasks.

- A very wide variety of valuable approaches and methodologies was observed. Some lessons had a conceptual focus and students engaged enthusiastically in exploring ideas and concepts, other lessons had a more methodical approach. It is very good that students experience this level of variety. It is suggested that teachers extend their collaboration to planning full lessons, in order to facilitate sharing of best practice within the subject department.
- In most lessons, very effective use was made of investigation and discovery to enable students to explore and examine the key concepts so that they gained a deep understanding of the Mathematics involved.
- Group and pair work were used effectively in all lessons. Best practice was seen where the students were thinking, discussing and engaging in activities that facilitated their enjoyment of learning. In these lessons, the students completed all aspects of the work themselves; the tasks were designed to lead the students through the learning and the teachers provided encouragement but did not over-support students. There was scope for further use of this approach across the department.
- All teachers used questioning very well to monitor progress and to support students in developing their understanding. The students, in their contributions, demonstrated very good learning. They used mathematical language fluently in their discussions.
- Good practice was seen in a number of lessons where students were set the task of deriving general formulae. In one such lesson, students were guided through new material in a step-by-step manner; students would have benefited from being given an opportunity to work more independently and to reach the final outcome by themselves. It is advised to give students more opportunity to think through the strategic elements of the work and to persist when it becomes difficult.
- Very good use of ICT was evident. All students have electronic tablet devices and used them as an integral part of their learning. Geometry software is installed on all students' devices and was used in the lessons on co-ordinate geometry, for example. It is evident that the school has prioritised using ICT to promote and develop learning rather than to assist teaching; this is excellent practice. The school won *Digital School of the Year* in 2014.
- The teachers demonstrated a high level of personal enjoyment of their work and there was a focus on encouraging students to have a positive disposition to the subject. In a number of lessons, warm-up activities were used to get students active and capture their interest. In all lessons, there was a positive classroom atmosphere, students were motivated to learn and there were warm relationships between students and their teachers.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Mathematics is very well supported at whole-school level. Timetable allocation for the subject is good. The mathematics teachers were consulted by management in relation to the timing of mathematics lessons.
- There is very good practice in relation to assigning students to levels for Mathematics. First-year and TY students study Mathematics in mixed-ability groups. They are assigned to higher and ordinary-level mathematics classes in all other year groups.
- The members of the subject department have availed of an extensive range of continuing professional development (CPD) courses. They took part in the *Maths Development Team*

pilot for introducing *Reflections on Practice*: an initiative to promote collaborative lesson planning. School management supports the mathematics teachers to be creative and innovative in their classrooms through being open to ideas and through facilitating change that improves learning.

- The layout of classrooms contributes positively to students' experience and enjoyment of learning. All rooms are set out for group work and communicate an expectation that students will work together in mathematics lessons.
- Very good provision is made for students with special educational needs (SEN). A small class group is created from second year onwards to support students who find Mathematics very difficult. The high level of communication between the SEN department and the mathematics teachers has contributed to teachers' keen awareness of students' needs and of the best strategies for supporting students.
- The subject department completes an analysis of student achievement against national norms. The small size of the cohort makes this analysis unreliable. In this context, each student's achievement should be evaluated against intake, attendance, and other relevant data. This analysis should then be used to inform decision making for Mathematics.
- Valuable extracurricular opportunities are provided for students to experience Mathematics for fun.

3. PLANNING AND PREPARATION

- Planning for Mathematics is very good. The teachers use the experience they gained from engaging in *Reflections on Practice* to share lesson ideas and to develop resources for active learning; this practice should be extended to designing lessons that further empower students to take responsibility for their own learning. The collaboration should include discussion around questioning, task design, encouraging persistence and should also involve teachers observing each other's lessons, which is a component of the *Reflections on Practice* process.
- Programmes of work that support learning very effectively have been developed for each year group and level. The programmes are constructed in a way that reflects how the subject is examined and outline a wide range of student-centered methodologies and resources. ICT features prominently as an important tool in delivering the syllabuses and in facilitating investigation, discovery and independent learning.
- The TY plan is good; it includes certificate examination topics and some non-examination material such as a statistics project. It is recommended that the TY plan be reviewed to include more material that will allow students to develop mathematical skills outside of the certificate examination syllabuses.

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 INSPECTORATE'S QUALITY CONTINUUM

Inspectors describe the quality of provision in the school using the Inspectorate's quality continuum which is shown below. The quality continuum provides examples of the language used by inspectors when evaluating and describing the quality the school's provision of each area.

Level	Description	Example of descriptive terms
Very Good	***Very good*** applies where the quality of the areas evaluated is of a very high standard. The very few areas for improvement that exist do not significantly impact on the overall quality of provision. For some schools in this category the quality of what is evaluated is ***outstanding*** and provides an example for other schools of exceptionally high standards of provision.	Very good; of a very high quality; very effective practice; highly commendable; very successful; few areas for improvement; notable; of a very high standard. Excellent; outstanding; exceptionally high standard, with very significant strengths; exemplary
Good	***Good*** applies where the strengths in the areas evaluated clearly outweigh the areas in need of improvement. The areas requiring improvement impact on the quality of pupils' learning. The school needs to build on its strengths and take action to address the areas identified as requiring improvement in order to achieve a *very good* standard.	Good; good quality; valuable; effective practice; competent; useful; commendable; good standard; some areas for improvement
Satisfactory	***Satisfactory*** applies where the quality of provision is adequate. The strengths in what is being evaluated just outweigh the shortcomings. While the shortcomings do not have a significant negative impact they constrain the quality of the learning experiences and should be addressed in order to achieve a better standard.	Satisfactory; adequate; appropriate provision although some possibilities for improvement exist; acceptable level of quality; improvement needed in some areas
Fair	***Fair*** applies where, although there are some strengths in the areas evaluated, deficiencies or shortcomings that outweigh those strengths also exist. The school will have to address certain deficiencies without delay in order to ensure that provision is satisfactory or better.	Fair; evident weaknesses that are impacting on pupils' learning; less than satisfactory; experiencing difficulty; must improve in specified areas; action required to improve
Weak	***Weak*** applies where there are serious deficiencies in the areas evaluated. Immediate and coordinated whole-school action is required to address the areas of concern. In some cases, the intervention of other agencies may be required to support improvements.	Weak; unsatisfactory; insufficient; ineffective; poor; requiring significant change, development or improvement; experiencing significant difficulties;

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