

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection in Mathematics

REPORT

Ainm na scoile / School name	Ratoath College
Seoladh na scoile / School address	Jamestown Ratoath Co. Meath
Uimhir rolla / Roll number	76088T

Date of Inspection: 01-02-2019



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agus Scileanna
Department of
Education and Skills

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. Teaching, learning 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.

CHILD PROTECTION

During the inspection visit, the following checks in relation to the school's child protection procedures were conducted:

1. The name of the DLP and the Child Safeguarding Statement are prominently displayed near the main entrance to the school.
2. The Child Safeguarding Statement has been ratified by the board and includes an annual review and a risk assessment.
3. All teachers visited reported that they have read the Child Safeguarding Statement and that they are aware of their responsibilities as mandated persons.

The school met the requirements in relation to each of the checks above.

SUBJECT INSPECTION

INSPECTION ACTIVITIES

Dates of inspection	31-01-2019 and 01-02-2019
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with principal and key staff• Interaction with students	<ul style="list-style-type: none">• Observation of teaching and learning during seven class periods• Examination of students' work• Feedback to principal and relevant staff

School context

Ratoath College is a co-educational school under the management of Louth and Meath Education and Training Board (LMETB). It has a current enrolment of 571 boys and 469 girls. The school provides all of the curricular programmes, including an optional Transition Year (TY) programme for students.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

Findings

- The overall quality of teaching and learning in the lessons observed was good.
- Almost all lessons were well planned; learning was most effective when well-designed tasks were provided to guide students' thinking and to facilitate the development of a range of key skills.
- There was highly effective use of group work, pair work, and digital learning technologies to allow students to be active, independent, and confident learners; in a significant minority of lessons students were more passive.
- The quality of assessment to monitor progress was very good; however, questioning could have been further used to promote deep learning.
- Overall, whole-school support for Mathematics is very good; arrangements for level choice and the subject department's practice in relation to mock examinations require attention.
- The quality of teacher collaborative practice is good overall; there is a need for a more inclusive collaborative planning process.

Recommendations

- In all lessons, learning tasks should be designed to encourage students to actively engage and participate, and to become independent learners.
- In fifth and sixth year, the range of student abilities should be mixed in the higher-level classes, and a similar arrangement should be adopted for ordinary-level groups.
- Mock examination papers should only comprise material that has been covered in mathematics lessons, and consideration should be given to the necessity of mock examinations in light of upcoming changes in Junior Cycle.
- Planning time should be further used to share ideas, collaboratively plan lessons, and to observe teaching and learning.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING, LEARNING, AND ASSESSMENT

- The overall quality of teaching and learning in the lessons observed was good; the quality of practice ranged from excellent to fair across lessons. Almost all lessons were well planned, with teachers preparing a range of useful resources in advance. In one lesson there was a significant need for better planning. The mathematics teachers should collaborate further in order to share good practice and to facilitate greater consistency in the quality of teaching and learning.
- Teacher instructions and explanations were clear in all lessons. In most lessons, the learning focused on the conceptual aspects of the work and this is highly effective practice. In other lessons, learning was overly focused on the procedural elements. It is recommended that students be given further opportunities to understand the underlying meaning and reasons for what they are learning.
- In some lessons, students worked in groups or pairs. They demonstrated very good group-work skills; they listened to each other, they shared ideas, and they were confident in feeding back to the class as a whole. They enjoyed this methodology and were able to work at their own pace. They were developing a range of key skills including the ability to use mathematical language fluently so that they will be able to explain their reasoning in examinations.
- In some lessons there was an appropriate balance between student and teacher activity. This highly effective practice was evident when well-designed tasks were provided to guide students' learning, with input from the teacher in the form of encouragement and questioning. Some lessons were overly teacher led, with students listening passively for extended periods of time. A variety of engaging activities should be included in all lessons.
- One very well delivered lesson, in the school's Autism unit, *Aonad Arkle*, was observed. A significant strength of this lesson was the teacher-student relationship and the encouragement provided. The lesson was part of a Level 2 Learning Programme (L2LP) and was creatively designed to provide sufficient variety while allowing for necessary repetition of key concepts and skills.
- Digital learning technologies in the form of presentations, quizzes and geometry software were very effectively integrated into lessons. There was highly effective use of tablet devices to facilitate students' use of technology in the classroom.
- Very good assessment was noted when mini-white boards or technology were used to monitor individual student's progress. Additionally, teachers assessed progress very effectively through observation as students worked. Excellent practice occurred when probing teacher questions were used to deepen students' learning. Less effective assessment took the form of one-to-one teacher-student questioning, often with the same students answering. The effective assessment practice observed should be extended to all lessons.
- Some classes maintain a notes copy for Mathematics, which is intended to act later on as a comprehensive study aid. Good use of the notes copy was observed where the notes made were the students' own, rather than teacher notes transcribed from the board. In some lessons, students were observed to be overly dependent on the notes copies and were unable to complete the lesson tasks independently. Alternative approaches that encourage students to think for themselves and become confident tackling mathematical problems presented in unfamiliar contexts should be extended to all lessons.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Whole-school support for Mathematics is very good, overall. Concurrent timetabling is provided to enable students to study the subject at a level appropriate to their ability. A very good range of resources including digital technology is provided. Four fifty-minute periods are allocated per week to Leaving Certificate Mathematics and while this provision is in line with syllabus guidelines, a need for additional time was reported by teachers, particularly for the delivery of higher-level.
- Students are assigned to mixed-ability class groups in first year. They are predominantly maintained in their first-year groups with some students assigned to higher and ordinary level classes at the beginning of second year. Mathematics classes are mixed ability in TY. The very good practice in the Junior Cycle and TY allows students and teachers to maintain high expectations for achievement.
- In fifth and sixth year, classes are set as a top higher level, second from the top higher level and so on. There is a similar arrangement for Leaving Certificate ordinary-level Mathematics. In order to ensure that students are encouraged to study Mathematics at the highest level possible, for as long as possible, the abilities should be mixed in the higher-level classes and a similar arrangement should be adopted for ordinary-level groups.
- The mathematics department's practice in relation to mock and 'mini-mock' certificate examinations requires review. The integrated nature of mathematics examination questions makes it very difficult for complete topics to be left out. By the time of the mock examinations, not all topics have been covered in lessons which means that students may not be able to attempt parts of some questions. In light of upcoming changes in Junior Cycle, students will also be engaging in classroom-based assessments (CBAs) for Mathematics. Therefore, the continuing need for Junior Cycle mocks should be considered.
- A very good range of extracurricular activities, including a vibrant Maths Week, are provided to enhance students' enjoyment of Mathematics and to extend their learning.

3. PLANNING AND PREPARATION

- The quality of teacher collaborative practice is good overall. Administrative tasks, maintenance of the subject plan, and some reflective practice are effectively completed by the teaching team. However, there is a need for more cohesive leadership in the mathematics department to develop an inclusive collaborative planning process. Planning time should be used to share ideas, collaboratively plan lessons, and to observe teaching and learning. Additionally, the lessons planned for L2LPs should be included in the collaborative planning process.
- The subject plan is of a very high standard. It comprises electronically stored programmes of work, minutes of mathematics department meetings, links to online resources and shared digital presentations, handouts and question sheets. All teachers are on this system and share resources.
- Considerable work has been done in ensuring that the new Junior Cycle specification's learning intentions, statements of learning and key skills are incorporated as an integral part of the programmes of work. However, some work remains to be done on including links between mathematical concepts and this should be completed over time.
- While it is good that the mathematics teachers analyse the students' performance in the certificate examinations, there is scope for deeper reflection and action planning on foot of

the analysis. This action planning should optimise the impact that good teaching and learning strategies, and decisions regarding level choice have on achievement.

The draft findings and recommendations arising out of this evaluation were discussed with the principal, deputy principals, 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 of 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 <i>very good</i> 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;