

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection in Mathematics

REPORT

Ainm na scoile / School name	Ballinamore Community School
Seoladh na scoile / School address	Ballinamore County Leitrim
Uimhir rolla / Roll number	91519H

Date of Inspection: 01-12-2016



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(s) of inspection	01-12-2016
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 four class periods• Examination of students' work• Feedback to principal and relevant staff

SCHOOL CONTEXT

Ballinamore Community School is a co-educational school with 318 students enrolled currently. The school provides the Junior Certificate, the established Leaving Certificate, and an optional Transition Year (TY) programme.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

FINDINGS

- The quality of teaching and learning was very good in some lessons; there was scope for improvement in others.
- Assessment and monitoring of student progress were very good in most lessons.
- Mathematics is very well supported at whole-school level.
- The quality of planning for Mathematics is good.

RECOMMENDATIONS

- In order to support the development and sharing of good classroom practice, the school should avail of the *Reflections on Practice* programme provided by the *(Project) Maths Development Team*.
- The mathematics teachers should, in collaboration, identify links between topics on the syllabus and core mathematical skills; this work should inform the programmes of work for teaching the subject.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING AND LEARNING

- The quality of teaching and learning was very good in some lessons; there was scope for improvement in others.
- Learning was differentiated effectively to suit the ability levels in some lessons. This occurred where group activities and peer assessment were used to allow students to work at their own pace and to engage with one another. In a lesson on Sets, an extension exercise was given without prior teacher instruction; this deliberate strategy provided additional challenge for students and encouraged them to think for themselves.

- In some lessons, the methodology comprised teacher instruction followed by students completing questions in class. In these lessons, there was limited student participation and engagement and this impacted negatively on the quality of learning. Methodologies that allow students to think, discuss, and be active and independent should be used more frequently.
- Highly effective use of information and communication technology (ICT) was observed in one lesson; it added a positive dynamic to the lesson and involved all students and facilitated peer and self-assessment. In this lesson, students used their mobile phones to contribute to an online sharing platform.
- A very successful learning activity was observed in a lesson on trigonometry where students were faced with certain mathematical challenges; the goal being to work together to solve the problems. The students participated enthusiastically in this task. Additionally, their learning was extended beyond trigonometry to problem solving and this outcome is in keeping with how the subject is examined.
- Questioning in some instances was excellent. In these, teachers used a combination of higher and lower-order questions to assess progress and to allow students to explore concepts in a meaningful way. Teachers asked students to explain what they noticed, where they thought they went wrong and if what they did made sense. Further use of such questioning by teachers is recommended.
- In lessons where the quality of learning was highest, activities focused on encouraging students to use logic to identify the necessary procedural steps in order to solve problems. In these lessons, the students were enabled to be independent learners. In other lessons, a less effective practice was used where the teacher simply provided the procedure for students to follow. Activities that encourage students to use logic to solve problems should be extended to all lessons.
- Assessment and monitoring of student progress were very good in most lessons. Most teachers used questioning and observation very well to assess learning. 'Show-me-boards' were used effectively in one lesson to assess progress. In some lessons, students created their own questions, which proved very beneficial to their learning. However, good practice was not evident in all lessons. In one lesson, there was very little assessment used by the teacher; consequently, it was not possible to know whether or not the students had achieved the learning outcomes intended. There is need for the sharing and implementation of good assessment practice amongst all mathematics teachers.
- The school is examining homework and other aspects of assessment practice as part of its school self-evaluation (SSE) process. There was evidence of this SSE in some of the lessons including very effective use of 'wait time' to give students time to think before answering questions, keywords being used to develop understanding, and the use of peer assessment. In other lessons, a consistent focus on SSE strategies was not readily apparent.
- The teachers have created stimulating mathematical environments by displaying posters and students' work on the walls of each classroom. The very high quality of the environment has a positive impact on learning.
- A main strength of the school was the respectful rapport between teachers and students and among students themselves.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Mathematics is very well supported at whole-school level. Timetable allocation and the provision of a wide range of resources, including ICT, to support teaching and learning in Mathematics are very good.
- There are procedures that encourage students to stay at the highest level in Mathematics for as long as possible and these work well for Leaving Certificate students. However, the analysis of Junior Certificate examination outcomes indicates a high a percentage of A-grades at ordinary level. It is recommended that these students be supported more effectively to do higher level. It may be necessary for students to be taught in mixed-ability classes up to and including third year to achieve this outcome.
- Students with special educational needs in Mathematics are very well supported. There is very effective communication about students' needs and strategies to meet those needs. It is commendable that the needs of students with very high ability in the subject are also highlighted.
- A range of valuable opportunities is provided for students to participate in extra-curricular mathematics activities. The students have been particularly successful in a number of national mathematics competitions. There is also a very vibrant *Maths Week* celebrated in the school.
- There is very good monitoring of student progress in Mathematics. The subject department completes a comprehensive analysis of student achievement against national norms. There is an individualised target setting, tracking and monitoring system in place.

3. PLANNING AND PREPARATION

- The quality of planning for Mathematics is good. The members of the subject department work effectively as a team to plan for the subject. However, there is scope to improve collaboration around lesson planning. The *(Project) Maths Development Team* is providing *Reflections on Practice* currently; a programme to support teachers to collaborate on lesson planning. The school should avail of this programme to support the development and sharing of good classroom practice.
- There is scope for improvement in the programmes of work for Mathematics. The programmes comprise simply of a list of topics for each year group and level; this is not in keeping with how the subject is examined. It is recommended that the mathematics teachers, in collaboration, identify links between topics on the syllabus and the core mathematical skills; this work should inform the programmes of work for teaching the subject.
- The TY plan for Mathematics comprises a good mix of syllabus and non-syllabus material. However, in order to progress overall planning for teaching the subject, it is recommended that project work be used more in TY Mathematics. The projects should aim at facilitating students to develop skills in mathematical and real-life contexts and should have a strong problem-solving focus. Beneficial aspects of this approach should then be used across all year groups.

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. Overall, learners have access to a basic level of provision. 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;