

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection in Mathematics

REPORT

Ainm na scoile / School name	Carndonagh Community School
Seoladh na scoile / School address	Carndonagh Lifford County Donegal
Uimhir rolla / Roll number	91406R

Date of Inspection: 26-10-2017



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. 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.

SUBJECT INSPECTION

INSPECTION ACTIVITIES

Date of inspection	26 October 2017
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 nine class periods• Examination of students' work• Feedback to deputy principal and relevant staff

School context

Carndonagh Community School has a current enrolment of 1029: 512 boys and 517 girls. The school participates in the Delivering Equality in Schools (DEIS) initiative. All of the Junior and Leaving Certificate programmes are provided. Transition Year (TY) is an optional programme for students.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

Findings

- The quality of teaching and learning was consistently very good; the students' experience was characterised by very high-quality engagement.
- Learning was well differentiated in all lessons, but there was scope for additional challenge for higher-achieving students in a few lessons.
- Notes copies are used to provide students with a comprehensive study aid; however, students were observed to be overly dependent on them for a portion of some lessons.
- Whole-school support for Mathematics is very good.
- Planning for Mathematics is of a very high quality; there is scope to extend the professional learning from *Reflections on Practice*.

Recommendations

- Lesson tasks in all classrooms should be designed to provide sufficient challenge for higher-achieving students.
- Approaches that encourage students to become independent learners should be extended to all lessons.
- The mathematics teachers should further use the valuable professional learning from *Reflections on Practice* to share good practice.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING AND LEARNING

- The quality of teaching and learning was consistently very good. All lessons were well structured around shared learning intentions which were checked at appropriate points in the lesson.
- Teachers' instructions and explanations were clear and effective. Very good use was made of key words to explain mathematical concepts. Most lessons proceeded at an appropriate pace. However, learning would have benefited from a slower pace in a few lessons.

- Very high-quality student engagement was noted in all lessons. Students interacted purposefully with teachers and peers. They demonstrated very good understanding of the mathematical concepts taught. While students were given opportunities to be active in all lessons, at times there was a need for a better balance between student and teacher input.
- Students demonstrated very effective problem solving, critical thinking and investigation skills. They engaged very well in mathematical discussion to explain their reasoning. However, some of the mathematical discussions were conducted through one-to-one teacher and student interaction and this limited the number of students involved. In order to optimise the value of this very effective practice, it is recommended that group or pair discussions be further facilitated.
- The quality of assessment was very good. Higher-order questioning strategies were used to assess learning, involve students, and examine concepts. Excellent practice was observed when teachers used students' correct, and incorrect answers, to develop learning. Individual whiteboards were used very effectively to monitor learning and group work. Teachers observed progress and provided valuable feedback orally and in students' copies.
- In all lessons, teachers modelled a systematic approach to solving mathematical problems. This good practice was reflected in the very high-quality work evident in students' copybooks. Students were given the opportunity to deepen their understanding through examining the links between connected topics, such as algebra and geometry.
- In most lessons, students wrote examples in a notes copy, which is intended to act later on as a comprehensive study aid. However, students were observed to be overly dependent on the notes copies for a portion of some lessons. Alternative approaches that encourage students to become confident tackling mathematical problems presented in unfamiliar contexts should be extended to all lessons.
- Learning was well differentiated in all lessons. Students engaged in activities that allowed them to work at their own pace, and assistance was provided for students experiencing difficulty. However, there was a need for additional challenge to be provided for higher-achieving students in a few lessons. Lesson tasks in all classrooms should be designed to provide sufficient challenge for all students.
- Highly-effective practice was noted when learning built on students' existing understanding in increments small enough for students to learn independently. Additionally, students were encouraged to persist. However, in a few lessons there was an over-emphasis on students reaching the correct answer without fully understanding all the mathematics involved. The highly effective practices described above should be extended to all lessons.
- The relationships between students and teachers were observed to be warm and respectful. Teachers were affirming of students' efforts and showed great care for their learning.
- A wide range of resources was used to engage students. Information and communication technology (ICT) was used very effectively. In particular, geometry software was very well integrated into the work of lessons.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Whole-school support for Mathematics is very good. A wide range of resources including ICT is provided. Senior management provides time for teachers to collaborate, and to engage in projects such as numeracy initiatives between the school and its feeder primary schools.
- The members of the mathematics department participate actively in continuing professional development (CPD) sourced from outside the school and within. Some mathematics

teachers have participated in *Reflections on Practice*: an initiative to promote collaborative lesson planning and peer review.

- The teachers have created stimulating mathematical environments in their classrooms. The layout of the rooms supported student active collaboration, with desks arranged to facilitate group work. This arrangement contributed positively to students' experience and enjoyment of learning and communicated an expectation that students work together in mathematics lessons.
- Valuable extra-curricular opportunities are provided for students to experience Mathematics for fun. During the evaluation, students participated enthusiastically in some very vibrant Maths Week events.
- Very good provision is made for students with special educational needs (SEN) in Mathematics. Communication between the SEN department and mathematics teachers is very good. A mathematics support programme is provided for students as required.
- A comprehensive analysis of student achievement is carried out under the attainment strand of the DEIS planning process. This analysis shows a systematic approach to maintaining and improving higher-level uptake in the Junior and Leaving Certificate examinations.

3. PLANNING AND PREPARATION

- Planning for Mathematics is of a very high quality. Plans include programmes of work for each year group and level, assessment-for-learning strategies, and current DEIS priorities. The learning outcomes from each strand of the syllabuses are also included, alongside resources to support learning and whole-school literacy and numeracy strategies. The plan is shared electronically and it is very good that hyperlinks to relevant resources are included.
- It is good practice that a modular arrangement is used for the delivery of TY Mathematics. However, all modules comprise mainly material that is on the certificate examination syllabuses. The TY maths plan should be reviewed to include non-syllabus material which will facilitate the development of essential skills.
- Collaboration amongst members of the mathematics department is exceptionally good. Teachers work together to plan lessons and create resources for learning. The mathematics teachers should further use the professional learning from *Reflections on Practice* to share practice.
- Individual teacher planning was of a very high standard. There is a welcome for new ideas and approaches which has facilitated a creative approach to lesson planning. Teachers have opportunities to share their professional learning from CPD with colleagues.
- In-class learning support was provided in one lesson. It was evident that the teachers involved had agreed roles, discussed expectations and planned the lessons together. The excellent approach to planning contributed to the effectiveness of the methodology in meeting the students' identified needs.

The draft findings and recommendations arising out of this evaluation were discussed with the deputy 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 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;