

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection in Science & Chemistry

REPORT

Ainm na scoile / School name	Beara Community School
Seoladh na scoile / School address	Castletownbere Beara Co Cork
Uimhir rolla / Roll number	91387Q

Date of Inspection: 26-10-2016



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 [Science & Chemistry](#) 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.

Subject Inspection

INSPECTION ACTIVITIES DURING THIS INSPECTION

Dates of inspection	25-10-2016 and 26-10-2016
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 six class periods• Examination of students' work• Feedback to principal and relevant staff

SCHOOL CONTEXT

Scoil Phobail Bhéara is a co-educational school providing education to post-primary students in the Beara Peninsula. It operates under the joint patronage of the Mercy Order and Cork Education and Training Board (ETB). It has a current enrolment of 327 students. It provides the following programmes; Junior Certificate, Junior Certificate School Programme (JCSP), Transition Year (TY), established Leaving Certificate and Leaving Certificate Applied (LCA).

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

FINDINGS

- Overall, teaching and learning was of very high quality, although one lesson had considerable scope for improvement.
- Overall, lessons were student-centred and characterised by positive teacher-student rapport, high standards of student behaviour and attention, and relaxed interactions.
- In a practical lesson that was observed where teaching and learning was effective, learning intentions were clearly outlined, linked to previous learning, and students worked in a purposeful and skilful manner.
- There is very strong support for the sciences in the school, with the option to study a science subject available in every programme.
- A good start has been made with regard to planning for the new science subject specification at junior cycle, and particularly noteworthy is linking the teaching of key skills to scientific content.

RECOMMENDATIONS

- The practice of clearly emphasising learning intentions and revisiting these during the lesson should be employed on a wider basis in teaching.
- A problem-solving, investigative approach to student practical work should be used to a greater extent in junior cycle.
- In some instances, a stronger commitment to teacher marking and formative feedback on assigned homework and written practical work is required.
- The science department should ensure that an integrated approach across the science strands be used in the planning and teaching of the new science specification and that learning outcomes related to the nature of science strand be explicitly linked to the contextual strands.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING AND LEARNING

- Overall, teaching and learning was of very high quality, although one lesson had considerable scope for improvement.
- In general, lessons were student-centred and characterised by positive teacher-student rapport, high standards of student behaviour and attention, and relaxed interactions.
- Laboratories were rich in visual and verbal stimulus material.
- While the aims of the lesson were outlined in all instances, student understanding of intended learning was enhanced when the learning intentions were clearly outlined in student-friendly language. The practice of clearly emphasising learning intentions and revisiting these during the lesson should be usefully employed on a wider basis in teaching.
- Commendably, active learning opportunities were provided in all lessons. On occasion, greater structure to the activities and clarity of roles for students in pair activities was required to ensure greater engagement by all students.
- Overall, good linkage was made with previous learning. In most lessons, student input contributed effectively to lesson development.
- In one instance, the teacher clearly recognised students' special needs, including verbal, written and social needs, and effectively used teaching methodologies to address these needs, while at the same time enhancing students' knowledge of and interest in Science. Concrete materials were effectively used to enhance learning with these students.
- In practical lessons, the quality of teaching and learning varied. Where practice was most effective, learning intentions were clearly outlined and linked to previous learning, and students worked in a purposeful and skilful manner. The review of previous learning to set the scene was enhanced through very good use of a mind map, followed by student explanation of the processes involved.
- In another practical lesson, planning should have taken cognisance of the need to ensure that all students were sufficiently challenged and that new learning would take place. Planning should also have ensured that cognisance was taken of lesson structure and pace. A problem-solving investigative approach to student practical work was recommended in this lesson.
- Overall, clear explanations were characteristic of lessons observed.
- Questioning was used in all lessons to ascertain learning and to develop lesson content. It was most effective when higher-order questioning was used and student answering was supported by the teacher when necessary.
- In some lessons, a stronger commitment to teacher marking and formative feedback on assigned homework and written practical work was required.
- There was a fine emphasis on promoting students' oral literacy and scientific vocabulary in lessons observed. This saw students responding to questions and engaging in discussion in pairs with varying degrees of success.
- An appropriate emphasis on the development of students' numeracy skills was observed in lessons. On occasion, a step-by-step approach to developing mathematical content was recommended in order to ensure that student learning was enhanced.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- There is very strong support for the sciences in the school. Science is a core subject in junior cycle; modules of Physics and Science, containing elements of Agricultural Science, Biology and Chemistry, are offered in TY; all four Leaving Certificate science subjects are part of an open subject choice for Leaving Certificate; Agriculture and Horticulture is one on the vocational specialisms in LCA and Basic Science is offered to students who do not complete the junior certificate examination.
- Weekly timetable provision for the sciences is very good.
- Despite many very positive aspects to the teaching of, and provision for, the sciences in the school, the uptake levels in Leaving Certificate Chemistry are slightly below uptake of the subject at national level. While acknowledging that subject option bands are based on student preference, nevertheless, management and staff should continue to explore ways that would encourage increased uptake in the subject.
- A very good range of co-curricular and extracurricular activities enhance the scientific learning experiences of the students.
- There is a good level of resources and equipment, including information and communication technology, available to support teaching and learning in the sciences. The school has two, well-resourced, laboratories and a demonstration room, with appropriate storage and preparation areas adjoining.
- The focus on health and safety procedures in the science department is very good. Chemicals are segregated according to best practice guidelines.
- In planning for future staff needs, management should be mindful of the need for all teachers to have the opportunity to teach the new junior science specification. This would enable the sharing of expertise to maximum effect.
- Class and termly assessments are carried out, with teachers using a collaborative approach to paper setting. This is good practice. Parents are kept informed on student progress by means of reports, which are sent home four times a year, and at parent teacher meetings.
- Commendably, the school has made significant investment in staff professional development. There was some evidence of the impact of this in the lessons observed. It is worth evaluating the impact of such continuing professional development (CPD) in a formalised manner. It was reported that the school implements peer observation to some extent. Further use of peer observation within the science department should be considered.

3. PLANNING AND PREPARATION

- A good level of coordination is evidenced by minutes of department meetings. To facilitate the sharing of expertise, particularly as the science department plans for the implementation of the new science specification at junior cycle, it is recommended that teaching and learning be included on the agenda of all meetings.
- A good level of planning documentation relating to Science, TY sciences and Chemistry was observed. It was good to note that in many instances, learning outcomes were outlined and timeframes for the completion of these outcomes were included. Building on this good practice, it is recommended that teaching and learning strategies be linked to these learning outcomes.

- A good start has been made with regard to planning for the new science subject specification. The teaching of key skills has been linked to scientific content. Building on this good practice, it is recommended that an integrated approach across the strands be used in the planning and teaching of the learning outcomes. Learning outcomes related to the nature of science strand should be explicitly linked to the contextual strands.
- A significant level of resources in Chemistry and Science have been developed to support teaching. The development of student self-assessment tools in relation to learning outcomes is very good.
- Commendably, all students have the opportunity to study science. To further enhance the provision for students with additional needs who are not studying the junior certificate programme, it is recommended that the school devise a level two science course specifically tailored to meet the needs of those students, incorporating elements of science that would prepare students for life.
- A very good range of topics is covered in TY. Commendably, students have the opportunity to study aspects of the sciences relating to everyday life that are not included in current syllabuses.
- Overall planning for lessons was good or very good.

The draft findings and recommendations arising out of this evaluation were discussed with the principal, deputy principal and subject 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.

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 <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;