

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection in Science & Chemistry

REPORT

Ainm na scoile / School name	The Intermediate School
Seoladh na scoile / School address	Iveragh Road Killorglin Co. Kerry
Uimhir rolla / Roll number	61360B

Date of Inspection: 19-10-2016



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	18 and 19 October 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 nine class periods• Examination of students' work• Feedback to principal and relevant staff

SCHOOL CONTEXT

The Intermediate School is a co-educational school providing education to students of Killorglin and its surroundings. Its current enrolment is 546. It offers the Junior Certificate, Leaving Certificate and Leaving Certificate Vocational Programme.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

FINDINGS

- The quality of teaching and learning ranged from very good or good in almost all instances to fair in one instance.
- Good practice was observed when learning intentions were clearly shared with the students in lessons and reviewed at the end.
- Students' participation and engagement was particularly high where they clearly enjoyed investigating outcomes relating to practical work or when they engaged purposefully in meaningful group tasks.

RECOMMENDATIONS

- It is recommended that learning intentions be shared with students in all lessons and that these learning intentions be used by students as a framework for self-assessment of their learning.
- Increased use of the investigative approach to the teaching of Science is recommended.
- In facilitating the use of an enquiry-based approach to the teaching of Science and in line with recommendations made in previous inspections, the school should timetable a double lesson for first-year Science.
- Formative, written feedback and student peer assessment should be used to a greater extent across the science department.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING AND LEARNING

- The quality of teaching and learning ranged from very good or good in almost all instances to fair in one instance.
- Overall, lessons were well structured. Student learning was enhanced where short student activities were interspersed with class discussion, questioning and clear teacher explanation.
- Good practice was observed when learning intentions were clearly shared with the students in lessons and reviewed at the end. Building on this good practice, it is recommended that learning intentions be shared with students in all lessons and that these learning intentions be used by students as a framework for self-assessment of their learning.
- Questioning was well used to ascertain students' learning. Some higher-order questioning effectively supported lesson development. In some instances, students' questioning of their peers enhanced their own learning. The use of group and pair work and the lesson atmosphere which facilitated such peer teaching is a significant strength. On occasion, the use of 'show-me-boards', 'think-pair-share' and increasing 'wait-time' was suggested as a means of engaging more students in the questioning process.
- The effectiveness of group work varied in lessons observed. It was most successful where students were assigned specific roles.
- In one lesson, it was recommended that students' prior learning be ascertained when introducing a new topic. In this lesson, a mandatory investigation was demonstrated in advance of students conducting the investigation themselves. This approach is not in line with the discovery-based approach recommended in the syllabus or subject specification.
- Students engaged at a very high level in practical lessons. Very good cognisance was taken of safety practices, although occasionally, a very small minority of students had the tendency to remove their safety goggles. Teachers should be vigilant with regard to this practice.
- Students' participation and engagement was particularly high when they were provided with opportunities to investigate outcomes relating to practical work. When planning for a series of lessons in relation to any specific topic, a discovery-based approach to teaching the topic should be used where possible. This would allow for greater development of problem-solving skills and, in the case of the new science subject specification, greater integration of the nature of science strand into the teaching of other strands.
- In one lesson, a new topic was effectively introduced by students' review of previous learning using an interactive video clip, with built-in interactive assessment. The teacher used students' responses to clarify and consolidate learning. This is good practice.
- A very positive atmosphere and very good teacher-student rapport was observed in all science lessons and this enhanced students' learning experiences.
- A good level of written work was observed in students' homework and practical copybooks. There was some evidence of student correction and teacher monitoring and feedback. It is recommended that increased use of formative feedback be used by the teacher. Students should use peer assessment when appropriate.
- Overall, there was a good focus on development of key terminology. Where it is deemed necessary to read the textbook, it is recommended that students engage in such reading. In

this process, the students are encouraged to employ previously learned comprehension strategies.

- Effective integration of numeracy was observed in lessons as appropriate.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Management and teachers' support for the sciences is commendable. This is evidenced by; the complete range of science subjects available for Leaving Certificate; the fact that Science is a core subject in junior cycle; the range of resources available and the commitment to upgrading the facilities, including developing a new science block.
- Overall, timetabling supports the teaching and learning of the sciences. However, in line with recommendations made in previous inspections and to facilitate the greater use of the investigative approach to teaching Science, the school should timetable a double lesson for first-year Science. This is particularly important in light of the increased focus on using an investigative approach to teaching Science in the new subject specification and to facilitate a plenary session following student practical work.
- A very good range of co-curricular and extracurricular activities, including students' participation in the BT Young Scientist and SciFest competitions, and astronomy workshops, provide meaningful learning experiences. This is commended.
- The science department monitors student progress in a range of ways including questioning, topic tests and whole-school assessments which occur four times a year. The current trialling of on-line assessments is noteworthy. Commendably, the inclusion of students' practical work is a component of the terminal examinations. Students' achievement in certificate examinations is very good.
- The use of student self-assessment tools for some of the Leaving Certificate sciences is good.
- There is a good level of safety equipment in the laboratories. Very good work has been done to ensure the safe storage of chemicals.

3. PLANNING AND PREPARATION

- Planning for teaching and learning in the science department is of a very high quality. For all science subjects and for each year group, time-bound learning outcomes are explicitly linked to practical work and strategies for literacy and numeracy. This is very good.
- A self-evaluative approach supports the planning processes undertaken by the science department. In particular, the science department's consideration and analysis of the junior cycle statements of learning when planning, is exemplary.
- It is clear that effective co-ordination structures, which are supported by department meetings, facilitate the development of such plans.
- To facilitate the sharing of expertise within the department, it is recommended that teaching and learning be put on the agenda of all department meetings. A shared electronic folder should also be set up.
- Planning for lessons was good or very good in almost all instances.

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 board accepts the report as the final inspection report available for publication and wished to respond formally to the report. The Board agrees that the response submitted will be included as an appendix to the published report. The board's response is submitted below.

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;

Appendix

SCHOOL RESPONSE TO THE REPORT

Submitted by the Board of Management

Area 1 Observations on the content of the inspection report

I would like to acknowledge the findings of the report and thank the inspectors for their work. I would also like to thank the teachers of the science department in this school who do such a good job in educating the students of the ISK. This department constantly strives and endeavours successfully to achieve best practice in their profession.