

**An Roinn Oideachais agus Scileanna
Department of Education and Skills**

Subject Inspection in Science & Biology

REPORT

School name	Presentation Secondary School
School address	Cannon Street Waterford
Roll number	64970U

Date of Inspection: 06-12-2018



**An Roinn Oideachais
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 Science & Biology 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 of the school was given an opportunity to comment in writing on the findings and recommendations of the report, and the response of the board will be found in the appendix of this report.

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	05 & 06-12-2018
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with the senior management team and science teachers• Interaction with students	<ul style="list-style-type: none">• Observation of teaching and learning during six lessons• Examination of students' work• Feedback to acting principal and relevant staff

School context

Presentation Secondary School has an enrolment of 403 girls. It participates in the Delivering Equality of Opportunity in Schools (DEIS) action plan for inclusion. The school provides the Junior Cycle programme, the Junior Certificate School Programme, the established Leaving Certificate, the Leaving Certificate Applied and a compulsory Transition Year (TY) programme.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

Findings

- The quality of teaching and learning in the lessons observed was generally good, and, while most lessons were good or very good, the overall range was from very good to weak.
- The quality of learning was good when lessons were structured with opportunities for active student learning that was both productive and challenging, and there was a high level of enjoyment in learning, but, in a few instances, there was an inappropriate amount of teacher instruction that did not support learning.
- In science lessons, students' capacities in investigation were generally good, with some scope for greater emphasis on student self-direction and on communicating findings.
- The quality of assessment was generally good, and was often formative, but there was scope to extend the use of formative feedback.
- The quality of subject provision and whole-school support was very good; a very high quality learning environment is provided in the school and in the three modern laboratories which are very well organised and resourced.
- Subject planning is generally good but the subject plans for Science are satisfactory; they are focused on content and would benefit from the explicit integration of key skills and the Nature of Science strand learning outcomes.

Recommendations

- All teachers should plan lessons with sufficient time allocated to active student learning and avoid using long periods of teacher instruction and handing out abundant notes on topics.
- All teachers should review lesson planning for Science investigations to ensure that, whenever possible, students are guided toward and given more self-direction in the investigations.
- All teachers should use more focused formative feedback during lessons and on students' written work and explicitly link the feedback given to action that the student can take to improve the quality of their work.

- All members of the subject department should review the subject plan for Science so that it is more clearly grounded in developing key skills and the incremental and progressive development of the Nature of Science strand learning outcomes.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING, LEARNING, AND ASSESSMENT

- While very good to good teaching and learning practices were observed in most lessons, there were instances when practices were satisfactory and weak. Within the school, there is the potential and skill among members of the Science and Biology subject department to extend the very good practices in place.
- The quality of teaching and learning was very good when there was an appropriate balance between the time spent on teacher instruction and student activity. In these lessons, teachers set well-designed productive tasks, including scientific investigations. During the activities, the teachers' circulated productively and guided students in making progress with their work. All students in the class were actively engaged and challenged, and, in most instances, individuals were supported in their learning. In conducting activities, students were confidently and competently using subject terminology and explaining their thinking to each other.
- The quality of teaching and learning was weak when the teacher led the lesson for overly-long periods with a predominance of the teacher's voice. There was very little questioning to engage students, to check their understanding or to deepen their learning. There were missed opportunities to integrate student-centred tasks and there was very limited in-class support for individual students. In addition, the teacher regularly gave abundant handouts on topics. The overall effect was that students were passive, some students were making little progress in learning concepts, beyond rote learning, and a number of students lacked confidence in their ability to attain in the subject.
- In Science lessons observed, the students were developing skills in *Investigating in Science* and this is in keeping with the new Junior Cycle Science specification. Students were actively learning to pose testable hypothesis, carry out investigations and analyse their findings in ways that were generally appropriate to their stage in the Junior Cycle Science programme. They had a well-developed sense of enjoyment in the learning of Science and relatively good scientific literacy.
- In Science lessons, there was evidence that students would benefit from more opportunities to develop their abilities in *Communicating in Science*, particularly in reporting on their investigative findings, in learning how to organise the data collected during investigations and in developing their ability to design and lead their investigations from start to finish. To support lesson planning for this, the science department should review the science plan to ensure that there is sufficient, incremental and progressive development of the learning outcomes from the *Nature of Science* strand, and that teachers include more student-led investigations in their lesson planning.
- Very good practice was observed when teachers encouraged students to extend their contributions further. Many teachers used the 'think-pair-share' technique to good effect and this enabled all learners in the class to compose a response to key questions. Another useful strategy used involved requesting students to begin explaining their observations with the word 'When', and expecting students to give full sentences when answering questions.

- Generally, good formative assessment was noted in teachers' practice during most lessons, but correction of students' written work was often limited or absent. It is recommended that individual teachers' practice should ensure more focused use of formative feedback in lessons, and that the feedback given on students' written work, including laboratory reports and research pieces, be specific enough to support action the student can take to make improvements in their work.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- The quality of subject provision and whole-school support was very good.
- There is adequate timetabling provision for Science and good provision for Biology. This year, junior cycle class groups have two one-hour periods per week for Science. In planning for and managing the Junior Cycle programme in the school, senior management is mindful of and considering the number of class periods for Science next year.
- All students study Science as part of the school's Junior Cycle programme. For the Leaving Certificate, the school offers Biology and Chemistry each year, and most years it also provides Physics. Within the TY programme, all students take modules in these three science subjects.
- A very high quality learning environment is provided in the three modern, well-equipped laboratories. The layout and signage provides good access for students to equipment for practical work. All laboratories are fitted with a data projector for teacher use. Laboratory chemicals are safely stored, well-organised and well-maintained, and there is an established system in place to source consumables for every-day investigations. Laboratory access is very good and is equitable as almost all lessons in the subjects take place in a laboratory.
- There is strong encouragement for students to participate in extra-curricular opportunities in the sciences. The school places high value on these experiences and on extending learning opportunities for students. Students have participated in *SciFest* competitions and in *I WISH* (Inspiring Women in Stem) events. Senior management and science teachers also build and maintain productive links with Waterford Institute of Technology, including *Calmast*, their *STEM* Outreach Hub. This also supports the school in its DEIS action planning for equality of opportunity.
- As part of whole-school planning and the school self-evaluation process, the improvement of formative assessment has been selected. The school is working to develop the formative assessment commentary from teachers in the student progress reports.

3. PLANNING AND PREPARATION

- Subject planning is generally good. Science and biology teachers share resources for lesson planning and they work together to develop curricular planning.
- The science department meets formally once per year. Ways of extending this ought to be explored in order to enhance the developmental nature of planning. It is recommended that the department includes discussion on teaching and learning practices as a standing item for meetings. Meetings of the subject department team should take place more regularly to enable the extension of such discussions and the agreement of collective practices.
- The subject plans for Science are satisfactory; they are mainly focused on topics and content. Lesson planning for the *Nature of Science* learning outcomes of the Junior Cycle

Science specification could be strengthened. To address this, it is recommended that the programmes of work for first, second and third year be developed so that they are clearly grounded in skills and the incremental and progressive development of the *Nature of Science* strand learning outcomes.

- A range of strategies that develop students' literacy and numeracy were planned for and used effectively. The DEIS whole-school actions for literacy and numeracy have been integrated within the subject plans. It is suggested that teachers regularly discuss how all themes within the DEIS action plan are transacted through the science subjects.

The draft findings and recommendations arising out of this evaluation were discussed with the acting principal, key staff and subject teachers at the conclusion of the evaluation.

Appendix

SCHOOL RESPONSE TO THE REPORT

Submitted by the Board of Management

Part A Observations on the content of the inspection report

The Board of Management of Presentation Secondary School, Waterford welcomes the positive affirmation of teaching in this report and the students' well-developed sense of enjoyment in the learning of science. The Board of Management acknowledges the recognition of the quality of subject provision and whole school support, alongside the very high quality learning environment. The Board is pleased to see that the report noted the strong encouragement for the students to participate in extra-curricular opportunities in the science areas.

Part B Follow-up actions planned or undertaken since the completion of the inspection activity to implement the findings and recommendations of the inspection.

The Science team will continue to plan for self-directed and active student learning in all science classes.

They recognise the value of formative feedback and will endeavour to continue to incorporate it into all lessons.

The Science teachers will continue to ensure that the Nature of Science strand learning outcomes are explicitly integrated into the subject plan.

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;