

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

Subject Inspection in Science & Biology

REPORT

School name	Presentation Secondary School
School address	Grogan's Road Wexford Co. Wexford
Roll number	63661C

Date of Inspection: 14-12-2016



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 Science & Biology 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

Dates of inspection	13 and 14 December 2016
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with principal and teachers• Interaction with students	<ul style="list-style-type: none">• Observation of teaching and learning during ten class periods• Examination of students' work• Feedback to principal and science teachers

SCHOOL CONTEXT

Presentation Secondary School is a voluntary secondary school with 793 female students. The school is under the patronage of Catholic Education: An Irish Schools Trust (CEIST). The curriculum includes an optional transition year (TY) programme.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

FINDINGS

- The quality of teaching and learning observed during the evaluation ranged from satisfactory to very good, with some excellent practice noted.
- In most lessons, teachers incorporated many very good opportunities for students to engage actively, but in a small number of instances this could have been developed.
- Very good practice in the use of inquiry-based approaches to learning was observed in some lessons but this was not extensive.
- Students were motivated, worked very confidently in collaborative tasks and had a positive approach to classwork and homework.
- Whole-school provision for the subjects was good, including resourcing and support for subject-related initiatives, but there were shortcomings in timetabling and laboratory access.
- Individual and departmental planning was of a high quality and it was evident that ongoing development in teaching, learning and assessment approaches and professional collaboration is valued among teachers.

RECOMMENDATIONS

- It is recommended that the science department works collaboratively to further embed the noted very good practice in the investigative approach to Science, whenever possible and with all class groups.
- It is recommended that the science teachers collectively discuss and share approaches for increasing active student note-making, particularly in senior cycle.
- Management should ensure that each class group has access to a laboratory for practical work at least once per week.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING AND LEARNING

- The quality of teaching and learning observed during the evaluation ranged from satisfactory to very good, with some excellent practice noted.
- Lessons had very good structure including introduction, development and conclusion. At the start of lessons, the purpose was clearly communicated. In order to focus students on the skills as well as the content being covered, teachers could communicate learning intentions in terms of what students will 'be able to do'.
- Supplementary resources, including worksheets, and information and communication technology (ICT) presentations supported learning and the sequencing of activities. In the best lessons, teachers prepared resources that supported active engagement with the texts and inquiry-based learning on the part of the student.
- All lessons incorporated an activity, including laboratory investigations and experiments. In the best lessons, the teachers structured and sequenced activities so that students' understanding developed from making observations and explaining those observations to each other. This approach had a significant positive impact on the quality of the learning experience.
- In some student practical work, the focus throughout was on investigation; an inquiry-based approach was taken and this was supported with structured guidance from the teacher, including clearly-communicated messages and worksheets. This was very good practice. In these lessons, the teachers enabled students to make predictions, design investigations and analyse outcomes. In their groups, students made decisions for themselves about how to approach and record their investigations. In these instances, the quality of students' dialogue and scientific literacy was high. It is recommended that science teachers work collaboratively to further embed the noted very good practice in the investigative approach, whenever possible and with all class groups.
- Students were motivated to learn and had a clear sense of what was expected of them. Students worked especially well on collaborative tasks, performing to notably high level.
- Students see themselves as learners and demonstrate this in their positive approach to classwork, homework, and the presentation of laboratory reports.
- During instruction, teachers delivered high-quality tuition and elicited good student engagement through teacher questioning and, at times, pair work. At these times, the teachers' questions probed the depths of students' understanding. In a few instances, however, too much emphasis was placed on giving information through teacher instruction when students could have been more actively engaged.
- In some instances, students could have been more autonomous; for example, they could be encouraged to spontaneously make notes when a point is developed.
- Some teachers share ICT lesson presentations with students through an electronic platform. In one senior cycle class, students were expected to access and process the teacher's notes and to then make out notes on topics in their own words. This good practice develops active engagement in learning from texts. It is recommended that teachers discuss approaches for improving students' active note-making as opposed to passively receiving notes.
- In some of the groups visited, students were making use of their electronic devices to record practical work and to research topics. This is good practice.

- Overall, a good variety of assessment strategies was in use. In some classes, very good practice was observed in the use of 'tarsia' puzzles and 'think-pair-share' activities that facilitated reasoning and productive discussion of concepts. There was evidence of periodic use of 'traffic lights' supporting student self-assessment in topics. Some of the copybooks were very well corrected by teachers and included guiding feedback to improve student performance in their written work; this very good practice should be extended.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Whole-school support and subject provision were of a high standard. Science is core in junior cycle. Biology, Agricultural Science, Physics and Chemistry are provided for Leaving Certificate. Science features in the TY as an inter-disciplinary module with a commendable focus on investigative and student-centred learning.
- Timetabling provision was appropriate. Laboratory access is arranged collaboratively among the science teachers. Due to concurrent timetabling, however, not all classes have weekly access to a laboratory for the double period. This timetabling arrangement should be reviewed by management.
- At present, some lessons are thirty-five minutes duration; the principal reported that this has been reviewed and from next year all lessons will be a minimum of forty-minutes in line with the new Junior Cycle Framework.
- Management of resources was very good. There are four well-equipped and well-maintained laboratories, featuring modern ICT facilities. The range of contemporary science reference books in laboratories could be extended and used in research homework.
- Posters and displays in the laboratories and corridors promote and support the sciences. Student work is prominently displayed throughout the building.
- Participation in co-curricular science experiences and competitions is promoted including the *SciFest*, *Young Scientist* and a planetarium visit.

3. PLANNING AND PREPARATION

- Overall the quality of planning and preparation was good. Although greater emphasis on planning for the investigative approach and increasing learner autonomy was recommended in a few instances. Lessons were well-planned. Best practice was noted when it was apparent that the lesson was designed so that students would achieve specific learning outcomes and the aims of the syllabus/curricular programme.
- It was evident that ongoing development in teaching and learning and professional collaboration is valued among teachers. Teachers use both formal meetings and an ICT platform to network, to make collective decisions about laboratory organisation and to reflect together on their work. Teachers make good use of ICT to plan and share resources that support teaching, learning and assessment and a good range of these resources has been built up.
- The subject planning folders and the schemes-of-work were well-constructed and contained a good range of teaching, learning and assessment strategies. The schemes incorporated the self-evaluation school improvement plan (SIP) actions for literacy, numeracy and assessment for learning. It is very good practice that the department was implementing strategies in line with the SIPs and engaging in a review, determining progress and further action.
- A scheme-of-work is in place to support the implementation of the new science specification with first years. Planning for this new course is developing well and good ideas are emerging.

- It is very good that the department analyses certificate examination outcomes and sets targets on the basis of the findings. It is suggested that the department completes a five-year trend analysis of the outcomes, as this would provide information on progress. Improving particular grades has been identified as an area for development; it is suggested that the department list the agreed actions to meet this target. While the uptake of higher-level Biology is high, the department should set a target and actions to increase all the pass grade points.

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 <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;