An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection in Science

REPORT

Ainm na scoile / School name	Grennan College
Seoladh na scoile / School address	Ladywell St Thomastown Co Kilkenny
Uimhir rolla / Roll number	70640I

Date of Inspection: 06-10-2017

AN ROINN OIDEACHAIS AGUS SCILEANNA | DEPARTMENT OF EDUCATION AND SKILLS

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 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.

SUBJECT INSPECTION

INSPECTION ACTIVITIES

Dates of inspection	05-10-2017 and 06-10-2017
Inspection activities undertaken • Review of relevant documents • Discussion with principal and key staff • Interaction with students	• Observation of teaching and learning during four class periods • Examination of students' work • Feedback to principal and relevant staff

School context

Grennan College is a co-educational inter-denominational school under the patronage of Kilkenny and Carlow Education and Training Board (KCETB). The school participates in the Delivering Equality of Opportunity in Schools (DEIS) action plan for inclusion. The school has a current mainstream enrolment of 333 students. In addition to junior cycle, the school offers the established Leaving Certificate, the Leaving Certificate Vocational Programme (LCVP), an optional Transition Year (TY) programme and Post Leaving Certificate (PLC) courses.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

Findings

- The overall quality of teaching, learning and assessment ranged from good to very good.
- Students engaged in meaningful inquiry-based learning activities and carried out practical work safely and efficiently.
- The majority of students achieved the stated learning intentions though in some cases the fast pace and extensive content of lessons did not support students in this regard.
- Students were made aware of their strengths and areas for development as learners in many cases through high-quality developmental formative written feedback from teachers.
- Approaches to teaching generally matched the learning intentions and the learning needs of students, though in some lessons students were not always engaged in reinforcement of learning.
- There is good whole-school provision and support for Science but a single laboratory does not provide necessary access for student practical activities.
- The quality of subject planning and individual teacher planning for lessons was very good overall; a good collaborative science action plan has been drawn up which identifies areas that are working well and sets out targets for improvement in the short, medium and long term.

Recommendations

- Teachers should plan lessons to address the areas of lesson content, lesson pace and consolidation of learning, so that student learning is maximised.
- Teachers should ensure that students are more engaged in practices that reinforce learning.
- School management should prioritise the resolution of the critical deficit in laboratory provision leading to restricted access to the laboratory for many class groups.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING, LEARNING, AND ASSESSMENT

- The overall quality of teaching, learning and assessment ranged from good to very good.
- Students were motivated to learn and generally had a clear sense of success criteria which aided them in evaluating their own work. Most students demonstrated a knowledge appropriate to their year group and generally attained proficiency in key skills.
- The majority of students achieved the stated learning intentions, though in some cases the fast pace and excessive content of lessons did not support students in their learning. This should be reviewed by teachers so that student learning is maximised.
- Students engaged in meaningful inquiry-based learning activities and carried out practical work safely and efficiently. Students worked independently and collaboratively. Group work was effective overall though teachers should review the composition of some groups so that effective collaborative learning is maximised.
- In some lessons, students worked individually and collaborated successfully using 'think, pair, share' and recorded what they understood and areas that they found more difficult. This is very good practice.
- Positive classroom interactions supported a co-operative and productive learning environment. Teachers generally ensured that there was a high level of engagement with an appropriate level of challenge.
- Many students capably communicated the process and outcome of their investigations. In group settings, students should be provided with enhanced opportunity to report on, present and explain the process and outcomes of learning activities to the class group. In this way, student autonomy is supported and more students will take responsibility for their own learning.
- In many cases, students were made aware of their strengths and areas for development as learners through high quality affirmative and developmental formative written feedback from teachers. This practice should be extended.
- Teachers have engaged in a range of professional opportunities that develop their own pedagogical practice and are relevant to students' learning.
- Teachers identified and prepared in advance resources and activities suitable for the specific learning intentions. Some teachers gathered feedback from students so that future lessons could address any specific deficits in individual learning. This is very good practice and should be extended.
- There were short clear inputs from the teacher in many cases to aid student understanding. Teachers showed very good classroom management skills. Teachers maintained an appropriate balance between their own input and productive student participation and response.
- Approaches to teaching generally matched the learning intentions and the learning needs of students. However, in some lessons, students were not always engaged in reinforcement of learning by revisiting the lesson intentions. Teachers should address this.
- Teachers meaningfully differentiated lesson content and activities in order to cater for the varying needs and abilities of students.

- Teachers used information and communication technology (ICT) in an effective way to develop and support student learning and understanding. This technology was used successfully to present, collate and reinforce learning.
- High quality assessment practices were adopted by teachers in some lessons. Questioning strategies worked well overall, especially when questions were directed at individual students so that participation in learning was maximised. This included the use of differentiated worksheets which supported students of all abilities. Homework was assigned during all lessons.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- The principal supports a culture of collaboration and reflective practice within the science department. There is good deployment of science teachers to junior and senior cycle subjects. Time allocation for the science subjects is appropriate.
- All teachers are encouraged and supported by school management to partake in relevant continuing professional development courses. Records of teacher professional development form part of science planning. This is very good practice.
- There is very good provision for science education. Science is offered as a core subject at junior cycle. Biology and Chemistry are options at senior cycle. All TY students experience modules in Science.
- All science class groups are of mixed ability.
- The science laboratory is very well organised, resourced and maintained. It is very good that chemical storage facilities have been upgraded. However, there is a critical deficit in laboratory provision leading to some class groups gaining access to the laboratory for the double period only once in three weeks. This is unsatisfactory. This deficit was outlined in a previous inspection report. It is good that school management and the trustees have recently progressed an application to the Department for additional science laboratory facilities.
- Student involvement in co-curricular and extra-curricular science-related activities includes celebration of Science Week and involvement in Scifest and BT Young Scientist projects.
- The science department analyses and monitors state examination results and academic achievement. Teachers provide contextual reflection on trends and outcomes as part of overall science planning. This is very good practice.
- Parents are informed of student progress through regular reports following school assessments.

3. PLANNING AND PREPARATION

- The quality of subject planning and individual teacher planning for lessons was very good overall.
- A collaborative science action plan has been drawn up which identifies areas that are working well and sets out targets for improvement in the short, medium and long term. This is very good practice and fulfils a recommendation made in a previous inspection report. On review, this plan should include school self-evaluation priorities and integration of current assessment strategies.
- There is good planning regarding support for students with special educational needs, for example, the individual record form outlines how subject-specific support can be maximised.

- Science teachers share expertise, effectively collaborate and show consistency in their approach to curricular planning and extra-curricular science-related activities.
- Teachers work collaboratively to plan and implement the curriculum. Science co-ordination is carried out effectively.
- Curriculum plans are well developed overall and address specification requirements and common assessment. There is an appropriate focus on learning outcomes, key skills, activities, assessment practices and teacher reflection. On review, consideration should be given to the inclusion of methodologies and shared resources which are relevant to each section of the specification. It is very good that future identified teacher collaboration includes planning for the effective implementation of classroom-based assessments.
- The TY plan for Science includes Physics, Chemistry, Biology and Earth Science and has been well developed overall. Students develop a research project, evaluate their work and investigate science-related careers. The Transition Unit template, available on the website of the National Council for Curriculum and Assessment, could be used for development of TY planning. The inclusion of portfolio assessment is recommended.

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 of management of the school was given an opportunity to comment on the findings and recommendations of the report; the board chose to accept the report without response.

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 *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;