

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection in Science & Physics

REPORT

Ainm na scoile / School name	Tullow Community School
Seoladh na scoile / School address	The Mullawn Tullow Co. Carlow
Uimhir rolla / Roll number	91356F

Date of Inspection: 15-05-2018



**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 & Physics 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.

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

Date(s) of inspection	15-05-2018
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 7 class periods• Examination of students' work• Feedback to principal and relevant staff

School context

Tullow Community School operates under the patronage of Kilkenny and Carlow Education and Training Board (KCETB), the Brigidine Sisters and the Patrician Brothers. The school has a current mainstream enrolment of 632 students. In addition to Junior Cycle, the school offers the Junior Certificate School Programme (JCSP), an optional Transition Year (TY) programme, the established Leaving Certificate, the Leaving Certificate Vocational Programme (LCVP) and Post Leaving Certificate (PLC) courses.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

Findings

- The quality of teaching and learning ranged from good to very good and there were some instances of exemplary practice.
- Students generally developed ownership and responsibility for their learning by engaging in inquiry-based learning activities in line with the new specification in junior Science.
- Teachers selected and used a variety of teaching approaches which were appropriate to the learning intentions and to students' learning needs.
- Students were made aware of their strengths and areas for development for the most part; however, developmental formative written feedback was not adequately or consistently provided in some cases.
- Curricular provision and timetabling for science education is very good overall; however, some aspects of science provision are less satisfactory.
- The quality of planning for Science is very good overall, and science teachers work effectively together to develop curricular planning.

Recommendations

- Developmental formative written feedback should be planned by teachers and implemented for all students.
- School management and teachers should develop science education by implementing measures that raise the profile of the senior physical science subjects; reference should be made to the STEM Education Policy Statement 2017-2026 and the STEM Education Implementation Plan 2017-2019.
- The practice of JCSP students not studying Science in third year or sitting the final certificate examination in junior Science should be reconsidered.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING, LEARNING, AND ASSESSMENT

- The quality of teaching and learning ranged from good to very good and there were some instances of exemplary practice.
- Positive classroom interactions supported a productive learning environment. Students generally demonstrated good knowledge, skills and understanding, and carried out practical work safely and efficiently.
- Students generally developed ownership and responsibility for their learning by purposeful engagement in inquiry-based learning activities in line with the new specification in Science. In the majority of lessons students worked independently and collaboratively. In some cases there were limited opportunities for students to collaborate, to present their findings, or to collectively report back to the teacher. Teachers should plan better opportunities for students to collaborate and to develop communication skills.
- The majority of students achieved the stated learning intentions. In some lessons, learning intentions were written on the board or screen and best practice was observed when students contributed to revisiting these at the conclusion of the lesson.
- Second-year students were completing their Classroom Based Assessment (CBA) activities during the course of the evaluation. Students were encouraged to think creatively and critically and to apply skills and learning to solve problems. Many students demonstrated their numeracy skills in using data accurately to calculate, draw graphs, and explain trends and relationships. Students were enabled to use prior knowledge from science projects to progress their CBA. This is very appropriate and is commendable.
- Students encountered learning experiences that were both challenging and supportive. In the majority of lessons, students were encouraged to reflect on their learning and to feed back to teachers on particular topics that required further attention. This is very good practice.
- Teachers selected and used a variety of teaching approaches which were appropriate to the learning intentions and to students' learning needs.
- Best practice was observed when high-quality differentiation practices supported learning and when teachers supported individual and group learning needs.
- Classroom management was very good in all lessons. Teacher expertise and enthusiasm supported and progressed student learning. Best practice was observed when there was an appropriate balance between teacher input and student active engagement.
- Individual teacher planning and preparation was of a very high quality in all lessons. Lessons were adapted based on feedback of students' knowledge and skills.
- Active revision and appropriate assessment strategies were in evidence for third-year students.
- Fifth-year physics students were encouraged to apply their skills to solving practical problems in unfamiliar contexts.
- Student achievement in summative assessments including certificate examinations is monitored. Best practice was observed when teachers reflected on trends and outcomes of certificate examinations as part of science planning. This good practice should be extended across the science department.
- Question and answer sessions worked well where questions were higher order and where teachers used individually differentiated questions as a means of maximising student participation in the learning activities.
- Appropriate homework that extended and reinforced learning was assigned in lessons.
- Students were made aware of their strengths and areas for development for the most part. In some lessons oral feedback to individual students was in evidence; however,

developmental formative written feedback was not adequately or consistently provided in some cases. Developmental formative written feedback should be planned for by teachers and implemented for all students.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- The principal supports a strong culture of collaboration and reflective practice within the science department. There is generally good deployment of science teachers to junior and senior cycle subjects; however, only one teacher should be timetabled for each class group and senior cycle teachers of physical science subjects should have junior cycle class groups on a regular basis. Time allocation for the science subjects is appropriate.
- School management encourages and supports all teachers to partake in relevant continuing professional development (CPD) as a means of improving teaching and learning. There were individual certificates of courses completed by some teachers; however, a full record of achieved and planned CPD should form part of science planning.
- Curricular provision and timetabling for science education is very good overall although some aspects of science provision are less satisfactory. Science is offered as a core subject at junior cycle for all students, but JCSP students do not study Science in third year or sit the final certificate examination in junior Science. This practice should be reconsidered to ensure equity of access. Physics, Chemistry and Biology are offered at senior cycle. In addition, Agricultural Science is available to students outside of normal school hours. TY students complete a module in Science; this provision should be reviewed so that subject specialist teachers can provide a subject sample of each of the senior cycle science subjects in TY.
- School management and teachers should develop science education by implementing measures that raise the profile of the senior physical science subjects. They should consult the STEM Education Policy Statement 2017-2016 and the STEM Education Implementation Plan 2017-2019.
- The science laboratories are maintained to a high standard and provide a very good physical and supportive learning environment for students. Many SciFest and other student projects are on display. Posters, charts and displays of students' work all contribute to supporting learning.
- Dedicated science notice boards on the school corridors display students' involvement in projects, CBAs, and co-curricular and extra-curricular activities. This is very good practice.
- Parents are informed of student progress through regular reports following school assessments and by means of parent teacher meetings.

3. PLANNING AND PREPARATION

- The quality of planning for Science is very good overall, Science teachers collaborate effectively, share resources and expertise, and work together to develop curricular planning.
- Science co-ordination is carried out very effectively. Minutes of science meetings provide evidence of extensive collaborative planning for current CBAs, common examinations, development of curricular planning for the new science specification, co-curricular activities and the effective sharing of resources.
- Teachers in the science department use collaborative reflective practice to promote a culture of evidence-based improvement. However, current school self-evaluation (SSE) priorities require further integration into science planning.
- Identified developmental priorities for the science department have been collaboratively drawn up and include curricular development focusing on TY and CBAs, further teacher collaborative practices and development of student engagement in learning. This is very good practice. SSE practices can help progress the implementation of these praiseworthy priorities.

- Templates from the Junior Cycle for Teachers (JCT) support service have been well utilised to progress curricular planning for Science in first year and second year.
- Physics planning is of high quality and includes practices and reflective comment that support students' needs.
- It is noteworthy that some science teachers share ICT skills at whole-school level. Senior cycle subject specialist teachers are encouraged to further share their expertise and specialist knowledge within the science department.

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 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 of the school's provision in 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;