

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

**Subject Inspection in Science**

**REPORT**

<b>Ainm na scoile / School name</b>	St. Tiernan's Community School
<b>Seoladh na scoile / School address</b>	Parkvale Balally Dublin 16
<b>Uimhir rolla / Roll number</b>	91343T

**Date of Inspection: 22-03-2019**



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**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 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

<b>Date of inspection</b>	22-03-2019
<b>Inspection activities undertaken</b> <ul style="list-style-type: none"><li>• Review of relevant documents</li><li>• Discussion with principal and key staff</li><li>• Interaction with students</li></ul>	<ul style="list-style-type: none"><li>• Observation of teaching and learning during two double lessons</li><li>• Examination of students' work</li><li>• Feedback to principal and relevant staff</li></ul>

### School context

St Tiernan's Community School is a co-educational and inter-denominational school which participates in the Delivering Equality of Opportunity in Schools (DEIS) action plan for inclusion. The school has a current enrolment of 345 students. The school offers the Junior Cycle, the Junior Certificate School Programme (JCSP), the established Leaving Certificate, the Leaving Certificate Vocational Programme (LCVP), an optional Transition Year (TY) programme and the Leaving Certificate Applied (LCA).

### SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

#### Findings

- The overall quality of teaching, learning and assessment was good; elements of practice varied in quality from satisfactory to very good.
- Teaching approaches, group activities and some assessment strategies were inclusive and generally matched the learning needs of students, although written formative feedback is an area for development.
- Where practice was good or very good, students worked independently and collaboratively, developed ownership and responsibility for their learning, and engaged in meaningful inquiry-based learning activities in line with the new specification in Science.
- Where practice was no more than adequate, lessons were teacher led and lacked opportunities for inquiry-based learning
- There is generally good subject provision and whole-school support for Science.
- The quality of individual teacher planning is good; the overall quality of subject planning and curricular planning for Science is adequate.

#### Recommendations

- Developmental formative written feedback should be planned for and implemented for all students.
- Some teaching approaches should be reviewed so that there is added focus on student ownership and responsibility for learning and on inquiry-based learning, leading to more meaningful student activity.
- Planning for Science should be collaboratively developed to reflect the essence and content of the support materials available from the Junior Cycle for Teachers (JCT) and the National Council for Curriculum and Assessment (NCCA).

## DETAILED FINDINGS AND RECOMMENDATIONS

### 1. TEACHING, LEARNING, AND ASSESSMENT

- The overall quality of teaching, learning and assessment was good; elements of practice varied in quality from satisfactory to very good.
- Lessons were well planned and guided by learning intentions which in some cases were revisited. Best practice was observed when the number of learning intentions was not excessive and when teachers received feedback from students on their level of understanding of key lesson themes.
- Where practice was good or very good, students worked independently and collaboratively, developed ownership and responsibility for their learning and engaged in meaningful inquiry-based learning activities in line with the new specification in Science. Where practice was less than good, there was an inappropriate balance between teacher instruction and student activity and students were not meaningfully engaging in inquiry-based learning activities.
- Some teaching approaches should be reviewed so that there is better balance between teacher and student input to lessons, and added focus on student ownership and responsibility for learning and on inquiry-based learning, leading to more meaningful student activity.
- During a lesson on reproduction, students used digital technology to research new material in advance of the teacher collating student input and using it to effectively develop ownership of learning. Higher-order and student-directed questioning aided lesson development. In responses to questions, most students developed a knowledge appropriate to their year group. During this lesson there was appropriate focus on the Nature of Science strand. Inquiry-based learning opportunities were very good and students applied their skills effectively.
- Teacher enthusiasm positively impacted student learning in all lessons. Teaching approaches, group activities and some assessment strategies were inclusive and generally matched the learning needs of students. During a lesson on the topic of electrical circuits, student observation skills and problem solving skills were developed.
- Group work was very effective in some cases but required better planning in a few instances. Student communication skills should be further developed at whole class level. It is suggested that the appointment of a rotating rapporteur from each group to briefly present and answer questions from the class would support oral skills. This would provide students with enhanced opportunity to report on, present and explain the process and outcomes of learning activities to the entire class group.
- Many students worked collaboratively during theory and practical lessons. Best practice was observed when short clear meaningful inputs from the teacher aided student understanding.
- Positive differentiation strategies supported learning in most cases. However, carefully chosen composition of some groups and more focused group tasks where students are clearly aware of success criteria would enhance student attitude and attention to achievement in the assigned tasks.
- Well-designed student worksheets and the assignment of appropriate homework supported and consolidated learning.
- Generally, developmental written formative feedback was not adequately provided by teachers. Developmental formative written feedback should be planned for and implemented for all students.
- There was very good focus on co-curricular areas during some lessons. The use of Venn diagrams by students to develop their understanding of reproduction was very effective.

## 2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Subject provision and whole-school support for science education in the school is generally good. Science is an optional subject at junior cycle and the uptake is currently low. Optional subjects are sampled in first year before students are required to make a choice. School management and science teachers should develop actions to address the low uptake.
- Science is provided for all TY students. At senior cycle, Biology and the subject Physics and Chemistry are offered to students. All LCA students study an elective course in Science.
- The school has three science laboratories which are well organised and maintained.
- The science department has a health and safety section as part of the science plan; however, there is no risk assessment section. This should be developed and included in the overall school's health and safety policy document.
- Laboratory digital technology facilities are good and support student learning. Students have very good access to laboratory facilities in order to conduct investigative activities.
- Students are encouraged to partake in co-curricular and extra-curricular activities.
- Reports are sent to parents on four occasions throughout the year following assessments. Students with special needs are well supported and teachers are well informed of students' individual learning needs. School awards and pastoral care time each morning support student confidence and wellbeing. The well-developed academic tracking and student profiling system supports student achievement and attainment.
- All teachers are encouraged and supported to partake in relevant continuing professional development courses. In-house expertise is shared across the subject department and at whole-school level.

## 3. PLANNING AND PREPARATION

- The quality of individual teacher planning is good overall. Teachers were well prepared for lessons, and resources that supported student investigative practical activities were prepared in advance of lessons.
- The overall quality of subject planning and curricular planning for Science is adequate.
- A collaborative subject plan has been developed and the good action plan identifies areas for further development including teacher collaborative practices, Science Week activities and links with primary schools. The very good primary school science initiative facilitates science laboratory visits by sixth-class pupils from primary schools in the catchment area. The plan also outlines appropriate differentiation practices, links to DEIS planning including literacy and numeracy, JCSP statements and health and safety practices.
- The science plan does not currently reflect the essence and content of the support materials available from the JCT and the NCCA. Teachers should collaboratively address this by including references to the new specification in Science, and integrating into planning the eight key skills from the Junior Cycle Framework and practices through which they can be developed over the three years of Junior Cycle. The JCT templates should be utilised as a focus for effective collaborative planning. Planning for assessment should focus on written formative feedback to students and the development of students' practical, investigative and research skills.
- The science plan should also include reflections on student examination results, a record of teacher professional development, and strategies that support current school self-evaluation priorities.
- The curriculum plan outlines topics and dates of implementation for each year group but lacks sufficient detail and requires significant development. Science action verbs should be used to develop the curriculum plan for each year group. Teaching approaches, resources

and assessment strategies linked to each section of the course should form part of the modified curriculum plan.

- Teachers work collaboratively to co-ordinate Science at junior cycle. Minutes of science department meetings indicate the wide range of areas discussed. It is good that teaching, learning and assessment practices form an increasingly important part of these discussions.

The draft findings and recommendations arising out of this evaluation were discussed with the principal 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**

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## **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 board of management acknowledges the report's finding that the quality of teaching rated up to and included very good on the continuum. The board and senior management will support the science department through CPD and peer observation to achieve the highest rating for teaching in all lessons. Our science department will further collaborate with the school's JCT co-ordinator to improve curricular planning which will reflect and make use of support materials from JCT and the NCCA.

The report noted that subject provision and support for science education is generally good in St Tiernan's with science available to all students. The school will continue to operate the excellent science initiatives including the Science Programme for Primary Schools, science week activities, links to DEIS planning, JCSP statements and the promotion and implementation of health and safety policies.

The Board wishes to affirm our science teachers for striving to improve the teaching and learning experience of students in St. Tiernan's. The focus of our school planning under DEIS and SSE guidelines is Assessment for Learning. We have incorporated AfL strategies in our new customised school journal. We have focussed on DEIS planning in all staff meetings and subject planning meetings. The science department have implemented creative AfL strategies that have improved student engagement and learner autonomy. The report affirms the good practice of positive differentiation strategies. Senior management in conjunction with the science team and wider staff will prioritise the recommendation of developing written formative feedback.



## 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
<b>Very Good</b>	<b>Very good</b> 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 <b>outstanding</b> 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
<b>Good</b>	<b>Good</b> 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
<b>Satisfactory</b>	<b>Satisfactory</b> 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
<b>Fair</b>	<b>Fair</b> 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
<b>Weak</b>	<b>Weak</b> 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;