

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

**Subject Inspection in Science and Physics**

**REPORT**

|   |   |
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| <b>Ainm na scoile /<br/>School name</b>       | Rockford Manor Secondary School         |
| <b>Seoladh na scoile /<br/>School address</b> | Stradbrook Rd<br>Blackrock<br>Co Dublin |
| <b>Uimhir rolla /<br/>Roll number</b>         | 60081P                                  |

**Date of Inspection: 11-04-2019**



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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 and 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.

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.

## **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

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| <b>Dates of inspection</b>  | 10-04-2019 and 11-04-2019  |
| <b>Inspection activities undertaken</b> <ul style="list-style-type: none"><li>• Review of relevant documents</li><li>• Discussion with principal and science teachers</li><li>• Interaction with students</li></ul> | <ul style="list-style-type: none"><li>• Observation of teaching and learning during three double and one single class periods</li><li>• Examination of students' work</li><li>• Feedback to principal, deputy principal and relevant staff</li></ul> |

### School context

Rockford Manor Secondary School is a voluntary secondary school for girls with a current enrolment of 294 students. In addition to Junior Cycle, the school offers the established Leaving Certificate, the Leaving Certificate Vocational Programme (LCVP), the Leaving Certificate Applied (LCA) and an optional Transition Year (TY) programme.

### SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

#### Findings

- The overall quality of teaching, learning and assessment was very good; there were some elements of exemplary practice.
- Students were engaged in meaningful learning activities, worked independently and collaboratively and developed a very good level of ownership of their learning.
- Differentiation strategies were well integrated in all lessons, students were very well supported and received developmental feedback on assignments in oral and written format.
- Teachers embrace professional development that enriches students' learning, work as a team and share resources and expertise.
- The overall quality of subject provision and whole school support for Science and Physics is good; senior management has committed to the implementation of core Science from September 2019; one science laboratory is in need of refurbishment.
- The overall quality of individual and collaborative planning for Science and Physics is very good; well-developed comprehensive plans are in place for Science and Physics; further planning for some modes of assessment and the integration of some key skills will be necessary.

#### Recommendations

- School management, as resources permit, should plan for the refurbishment of the older science laboratory and chemical storage area.
- Teachers should plan for the development and assessment of students' practical skills in Science and Physics.
- To develop the curricular plans, teachers should further collaboratively plan for the integration of all eight key skills, as outlined in the Junior Cycle Framework document, into students' experience of science education over the three years of junior cycle.

## DETAILED FINDINGS AND RECOMMENDATIONS

### 1. TEACHING, LEARNING, AND ASSESSMENT

- The overall quality of teaching, learning and assessment was very good; there were some elements of exemplary practice. There was a high level of student focus and motivation to learn.
- Teacher expertise and enthusiasm impacted positively on student learning. Teachers are aware of and responsive to changes in science education.
- Opportunities were provided for students to apply their learning. For example during a lesson in Physics, students worked in pairs and successfully applied critical thinking, problem solving and peer assessment skills to advance their learning. Students were purposefully engaged in a rota of problem-solving activities and received a high level of challenge and support from the teacher.
- Lessons were well structured and had good developmental and consolidating phases.
- Teachers planned sequences of differentiated learning activities suitable to the learning activities of lessons and facilitated purposeful independent and collaborative work.
- Short, clear teacher inputs during lessons supported learning and were effective in creating a good balance between teacher input and student activity.
- Teachers put keywords on the board to advance and consolidate students' literacy skills. Teachers made expert use of digital technology to inspire, advance and consolidate learning.
- Students were engaged in meaningful learning activities, worked independently and collaboratively and developed a very good level of responsibility for and ownership of their learning.
- Students were engaged in meaningful inquiry-based learning activities in all lessons. For example, during a lesson on the theme of renewable energy, students successfully completed a renewable town project task and actively debated the pros and cons of the viability of renewable energy provision in modern society.
- There was a high level of student autonomy, enjoyment and motivation and students had high expectations of themselves.
- Differentiation strategies were well integrated in all lessons, students were very well supported in lessons and received developmental feedback on assignments in oral and written format.
- Students had a clear sense of success criteria and a positive approach to presenting their research and investigative findings. To further reinforce learning, it is suggested that teachers put solutions to problems on the board as a visual reminder of correct procedures.
- Practical work was carried out safely and efficiently and students were encouraged to think creatively and critically about their investigations and to predict the outcomes of their research questions. During a lesson in Science on the theme of acids and bases and during a lesson on diffusion, students conducted research, predicted results and successfully tested their hypothesis and appropriately applied success criteria to determine a favourable outcome to their investigations.
- Teachers used a range of questioning techniques very well. They used individual questions effectively as a means of maximising student participation. In a small number of cases, students' verbal contribution to lesson development could have been increased by the students presenting to their peers and contributing more to developing and summarising learning at the conclusion of lessons.
- Students were provided with opportunities for self and peer evaluation. They received a high level of formative feedback on assignments in oral and written format. In some cases the feedback could be more developmental in nature.

## **2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT**

- The overall quality of subject provision and whole school support for Science and Physics is good. Science is currently an optional subject at junior cycle, but senior management has committed to the implementation of core Science from September 2019.
- There is currently a class group of physics students in sixth year. Senior management and teachers have confirmed that the uptake is sufficient for Physics to be timetabled in fifth year for the next academic year.
- Chemistry is currently timetabled in fifth and sixth year; unfortunately, uptake is insufficient for school management to provide this subject in the next academic year. There are two Biology class groups in fifth and sixth year and school management has confirmed that there will be a similar timetabling arrangement for the next academic year. A well-designed and well-planned science module is provided for all TY students. Consumer Science is offered as an elective course to LCA students.
- Time allocation to the various science subjects and modules facilitates ongoing investigative practical activities.
- Deployment of teachers to science subjects is very good. Senior management and the science department facilitate and support Professional Masters in Education (PME) students.
- There are two science laboratories and laboratory access for practical investigations is very good. One science laboratory is in need of refurbishment. School management, as resources permit, should plan for the refurbishment of the older science laboratory and chemical storage area.
- Students are encouraged to partake in a range of co-curricular and extra-curricular activities; many students greatly benefit from their participation in the Science club which is currently open to all junior students.
- Science teachers develop their professional skills by their involvement in regular continuing professional development. For example, teachers' participation in the TL21 project has benefited staff collaboration and parental involvement in student learning.
- School reports are available to parents following major student assessments and examinations.
- There is a strong awareness by teachers and senior management of inclusive interventions and supports that help all students to achieve.

## **3. PLANNING AND PREPARATION**

- The quality of individual and collaborative planning for Science and Physics is very good overall. Well-developed and comprehensive plans are in place. School self-evaluation (SSE) themes have been integrated into science planning. The plans outline many areas including good strategies for assessment, e-learning, integration of TL21 into student learning, and some long-term planning and target setting. To build on this good practice, teachers should plan for the development and assessment of students' practical skills in Science and Physics.
- The curricular plans focus on key areas including literacy and numeracy development, assessment for learning, resources and cross-curricular links. There are links to Classroom Based Assessments (CBAs) in junior science curricular plans. It is praiseworthy that teachers have recorded reflections on CBAs indicating what worked well and how the process can be improved in future. To develop the curricular plans, teachers should further collaboratively plan for the integration of all eight key skills into students' experience of science education over the three years of junior cycle.
- Teachers have collaborated and have linked with other schools for Subject Learning and Assessment Review (SLAR) meetings.

- TY science planning has been very well developed to focus on important applications of Science. Well-designed and well-planned modules in Physics, scientific inquiry, Earth and Space, Chemistry and Biology are in place and the science department has commendably adopted the transition unit template for this work. There is appropriate focus on the applications of Science and on problem solving.
- Minutes of science department meetings indicate very good collaborative practices and sharing of resources. Key areas relating to the development of Science Technology, Engineering and Mathematics (STEM) education are collectively discussed and actions are taken to implement important strategies.
- Commendably, the science department has identified areas for development of science education. These include added focus on differentiation, promotion of STEM during Science week, the further integration of digital technology into student learning, and further teacher professional collaboration in TL21 and its implications in the classroom.
- Teachers were very well prepared for lessons and identified in advance relevant activities and resources that impacted positively on student learning.

The draft findings and recommendations arising out of this evaluation were discussed with the principal, deputy 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 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;   |