

**An Roinn Oideachais agus Scileanna**

**Department of Education and Skills**

**Subject Inspection of Science and Physics  
REPORT**

**Newtown School  
Newtown Road, Waterford  
Roll number: 65010R**

**Date of inspection: 18 November 2011**



**A N R O I N N | D E P A R T M E N T O F  
O I D E A C H A I S | E D U C A T I O N  
A G U S S C I L E A N N A | A N D S K I L L S**

**REPORT**  
**ON**  
**THE QUALITY OF LEARNING AND TEACHING IN SCIENCE AND PHYSICS**

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**INFORMATION ON THE INSPECTION**

<b>Date(s) of inspection</b>	17 and 18 November 2011
<b>Inspection activities undertaken</b> <ul style="list-style-type: none"><li>• Review of relevant documents</li><li>• Discussion with principal and teachers</li><li>• Interaction with students</li></ul>	<ul style="list-style-type: none"><li>• Observation of teaching and learning during eight class periods</li><li>• Examination of students' work</li><li>• Feedback to principal and teachers</li></ul>

**MAIN FINDINGS**

- The quality of teaching and student learning was very high.
- Lessons had clear aims and learning objectives, were well managed and structured and had very good continuity with prior learning.
- Student initiative and activity were encouraged through investigative learning and supported by the positive and affirmative classroom atmosphere in all lessons.
- Learning was reinforced by making it relevant to students' everyday experiences and by paying attention to subject-specific language.
- Planning for Science and Physics is well advanced through the comprehensive and collaborative plans and schemes of work, though some development of these plans is necessary.
- Formative assessment is used effectively as a means of encouraging students to reflect on and to improve the quality of their work.

**MAIN RECOMMENDATIONS**

- The use of information and communication technology (ICT) should be extended to further support student learning.
  - The current process of updating and reviewing the school's health and safety statement should be prioritised so that the revised document forms part of school policy in the current academic year.
  - Subject planning should be developed by setting long-term targets for the development of Science and Physics and by adopting the template recommended by the Department for writing up the TY science programme.
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## **INTRODUCTION**

Newtown School is a co-educational fee-paying secondary school guided by a Quaker ethos and which accommodates day students and boarders. The school has a current enrolment of 302 students. Science modules form part of the compulsory TY programme.

## **TEACHING AND LEARNING**

- Lesson aims and outcomes were clearly communicated to students at the outset. In some cases writing lesson objectives on the board would also help to act as a visual reminder for students of the key purpose of the lesson. Teachers should also consider setting research tasks for students in advance of lessons.
- Teachers demonstrated a high level of competence and skill in management, organisation and delivery of lessons. Teachers had high expectations of students commensurate with their abilities and learning styles. Short, concise teacher inputs into lessons helped ensure that all students were supported in their class, group and individual learning.
- Practical activities were a key feature of all lessons. Student initiative and activity were encouraged through investigative learning and were supported by the positive and affirmative classroom atmosphere in all lessons. Practical demonstrations were appropriately utilised to reinforce learning in some lessons.
- Resources, including ICT were used effectively to enhance learning in the majority of lessons. The inclusion of a relevant applet or animation in some cases would have further supported learning and understanding and it is recommended that teachers plan for this in advance of some lessons. Health and safety practices were good, in line with science department policy.
- Learning was reinforced by making it relevant to students' everyday experiences. Good focus and attention was placed on subject-specific language. This is praiseworthy as it supports scientific literacy. For some lessons, it is recommended that key words be placed on the board to further aid this process.
- There was effective use of appropriate and challenging questioning in all lessons observed. This was used very effectively towards the conclusion of some lessons to test students' knowledge and to help ensure that stated learning objectives had been achieved. Students demonstrated a good depth of knowledge and understanding.
- Modes of assessment supported learning and included the appropriate use of classroom assignments. Formative assessment is used effectively as a means of encouraging students to reflect on and improve on the quality of their work. For example, the overall quality of students' laboratory notebooks is very good and is supported by teachers' positive annotation and feedback to students on an ongoing basis. This approach should be extended. There was evidence to confirm that class testing is a regular feature of assessment.
- Academic student achievement is very good overall. The proportion of students receiving a high grade in Science and Physics and the uptake of higher level are very good in state examinations.

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

- There is very good provision for Science education. Science is a core subject at junior cycle and is mandatory in TY. Physics, Chemistry Biology and Agricultural Science are offered at senior cycle. Students are well supported by teachers, school management and the guidance department in making an informed subject choice for senior cycle.

- Time allocation to Science at junior cycle and to the range of science subjects at senior cycle is satisfactory. However, distribution of lesson periods throughout the week is somewhat restricted by the allocation of two double periods to each class group at junior cycle rather than the more standard practice of one double and two single class periods. Consideration should be given to reviewing this practice.
- The content of the TY science programme is very good. There is a clear focus on development of students' practical skills through research, investigation and project work. This is in line with Department TY guidelines.
- Students are encouraged to partake in a number of co-curricular and extra-curricular activities including the Tyndall lecture series, science Olympiads, BT Young Scientists' Competition and Sci-Fest.
- Formal examinations take place at Christmas and summer for the majority of classes. Third and sixth-year classes sit pre-examinations in February. Reports are sent to parents on three occasions during the year. Assessment for learning (AfL) practices are promoted through the school's effort marks system whereby students receive feedback on their progress every six weeks. This is very good practice.
- Teachers collaborate to set common examinations where feasible, especially at junior cycle. It is praiseworthy that practical copies are assessed and a portion of marks is awarded for the satisfactory completion of student practical work.
- School management has addressed some concerns in the four science laboratories since the previous science inspection. For example gas and electrical systems have been updated and colour-coded chemical storage has been initiated. This process is ongoing. School management is encouraged to consider the further enhancement of science facilities as resources permit. It is acknowledged that the school is considering the inclusion of a science block in a future planned infrastructural development.
- ICT facilities have been enhanced since the previous science inspection in 2005. Teachers share resources on the school's network. Internet access, computers and data-projectors have been installed in three laboratories.
- The school's health and safety policy should be updated and reviewed annually in line with best practice. This matter should be prioritised.
- In-service and relevant continuing professional development (CPD) courses are supported for all science teachers. Teachers who are new to Science are well supported by colleagues and school management.

#### **PLANNING AND PREPARATION**

- There was very effective individual teacher planning in evidence in advance of lessons observed. Planning for Science and Physics is well advanced. Collaborative plans and schemes of work have been developed. Subject planning should be developed by setting long-term targets for the development of Science and Physics and by adopting the template recommended by the Department for writing up the TY science programme.
- The voluntary role of coordinator of Science is carried out very effectively. Formal, minuted science department planning meetings are convened every term. Science teachers also meet informally on an ongoing basis to collaborate on many aspects of science provision.

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.

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