

**An Roinn Oideachais agus Scileanna**

**Department of Education and Skills**

**Subject Inspection of Science and Physics  
REPORT**

**Oatlands College  
Mount Merrion, Co Dublin  
Roll number: 60050E**

**Date of inspection: 13 February 2014**



**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>Dates of inspection</b>	12 and 13 February 2014
<b>Inspection activities undertaken</b> <ul style="list-style-type: none"><li>• Review of relevant documents</li><li>• Discussion with principal, deputy principal and teachers</li><li>• Interaction with students</li></ul>	<ul style="list-style-type: none"><li>• Observation of teaching and learning during seven class periods</li><li>• Examination of students' work</li><li>• Feedback to principal, deputy principal and teachers</li></ul>

**MAIN FINDINGS**

- The quality of teaching and student learning ranged from very good in the majority of cases to fair in some cases.
- There was a very good atmosphere for learning in all lessons and students exhibited a keen motivation to learn and on examination showed a very good knowledge and understanding of lesson themes.
- Best practice was observed when students were placed at the core of learning through active assigned tasks and through group work.
- Appropriate differentiation strategies were employed by teachers to help ensure that there was a good level of challenge and to cater for the range of abilities of students, though a minority of lessons require improvement in this regard.
- Varied methodologies including active student practical investigation, effective demonstration and innovative use of information and communication technology (ICT) all supported learning and understanding of key lesson objectives.
- Assessment strategies, including an appropriate range of questions and effective and meaningful formative written feedback for students, were in the main employed well to support and consolidate learning.

**MAIN RECOMMENDATIONS**

- Teaching approaches for some lessons should be reviewed to ensure that student activity is placed at the core of learning.
  - Differentiation strategies should be improved in some lessons to ensure that students of all abilities are appropriately supported and challenged.
  - Subject planning, schemes of work and in particular Transition Year (TY) planning all require review and development.
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## **INTRODUCTION**

Oatlands College is a voluntary secondary school which serves an urban catchment area with a current enrolment of 539 students. Science is offered as a core subject at junior cycle and Physics, Chemistry and Biology are options at senior cycle. In addition, modules in these subjects form a core part of the optional TY programme.

## **TEACHING AND LEARNING**

- The quality of teaching and student learning ranged from very good in the majority of lessons to fair in some cases and with scope for development in one instance. Best practice was observed when the teacher did not lead the learning and when students were placed at the core of learning through active assigned tasks and through pair work, group work and ongoing class interactions. Therefore, in these instances, teaching approaches should be reviewed to ensure that student activity is prioritised and that the balance between teacher instruction and student activity is firmly in favour of the latter.
- The vast majority of lessons were well structured. In most cases lesson objectives were shared with students at the outset, a good practice that should be extended. In some cases, writing lesson objectives on the board would have helped to act as a visual reminder for students of the key purpose of the lesson. In addition, most lessons were appropriately summarised in advance of the teacher setting homework assignments.
- The majority of teachers were very well prepared for lessons. In a minority of cases enhanced pre-lesson planning was necessary for improved lesson development and continuity.
- There was a very good atmosphere for learning in all lessons. Students exhibited a keen motivation to learn and to contribute to lessons when the opportunity allowed. Students demonstrated a very good understanding of lesson themes.
- Differentiation strategies were employed appropriately by teachers in the majority of lessons. This approach helped ensure that students experienced an appropriate level of challenge commensurate with their aptitudes, backgrounds and experiences. This was not the case in a minority of lessons. Therefore, differentiation strategies should be improved in some lessons to ensure that students of all abilities are appropriately supported and challenged.
- Methodologies employed were varied and this approach helped support a variety of modes of learning. During practical investigations students were actively engaged. For example in one lesson students accurately and appropriately tested whether water is a good conductor of heat while in another lesson students discovered the properties and functions of cells in the body by making models of each type of cell. Teachers should plan for the further integration of practical activities into lessons.
- Many teachers demonstrated a high level of competence, expertise and skill in the management, organisation and delivery of lessons. Student problem-solving skills were well developed in some lessons. Key concepts were appropriately explained by teachers. In many cases these ideas were frequently supported by interactive applets, well-chosen video clips or short demonstrations where students played an active role. Further appropriate use of ICT should be employed by teachers in some lessons.
- Students' interest was enhanced when links were made to real-life applications of Science and when an appropriate cross-curricular approach was employed by teachers.

- Scientific literacy and numeracy development were well integrated into each lesson. This worked particularly well when key words were placed on the board and when teachers circulated the classroom providing individual support to students with their assignments.
- Assessment strategies, including an appropriate range of questioning strategies and effective and meaningful formative written feedback for students were generally well used to support and consolidate learning. The practice of writing positive and directive comments on students' written work should be extended. Consideration should be given to the allocation of a portion of marks in school science examinations for practical work completed and accurately recorded.
- Examination results are analysed and academic student achievement is monitored. The uptake of higher level and the portion of students receiving a high grade is good.

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

- There is very good provision for science education. Science is a core subject at junior cycle and modules in Physics, Chemistry and Biology are mandatory in TY. Physics, Chemistry and Biology are offered at senior cycle. Students are well supported in making an informed subject choice for senior cycle and the uptake of these subjects is very high.
- Time provision for all science subjects is in line with syllabus recommendations with the exception of first-year provision which falls short by one class period.
- The four science laboratories are very well maintained, equipment is appropriately stored and best practice is employed for the storage of chemicals. Access to the laboratories is very good.
- Students with special needs receive a high level of support and benefit from effective interventions.
- Formal examinations take place on two occasions throughout the year and reports are sent to parents following each examination.
- Laboratory ICT facilities are good and include data-projectors, computers and internet access.
- 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**

- Well-developed science and physics plans are in place. Further development should include prioritised target setting for the development of these subjects over the next three years. The schemes of work should be developed to link each learning outcome to its assessment strategy, resources utilised and teaching methods employed.
- The TY plan for Physics should be developed as a subject department plan with reference to the template recommended by the Department for writing up the TY programme. The focus should be on student skills development through practical activities with aspects of subject sampling built in. The amount of content should be commensurate with the time available for the module.
- Minutes of department meetings reveal a collaborative approach to subject planning. Topics discussed include state examination results, literacy and numeracy strategies, Transition Year provision and health and safety.

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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 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.

*Published October 2014*

# **Appendix**

**SCHOOL RESPONSE TO THE REPORT**

**Submitted by the Board of Management**

**Area 1 Observations on the content of the inspection report**

**Area 2 Follow-up actions planned or undertaken since the completion of the inspection activity to implement the findings and recommendations of the inspection.**

A prioritised development plan for the next three years in this subject.  
Review of TY plan for Physics.