

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Science and Physics
REPORT**

**Castlecomer Community School
Castlecomer, Co Kilkenny
Roll number: 91360T**

Date of inspection: 21 January 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

INFORMATION ON THE INSPECTION

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| Dates of inspection | 20, 21 January 2014 |
| Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with principal, deputy principal and teachers• Interaction with students | <ul style="list-style-type: none">• Observation of teaching and learning during seven class periods.• Examination of students' work.• Feedback to principal, deputy principal and teachers. |

MAIN FINDINGS

- The high quality of individual planning helped to ensure that teachers were very well prepared for lessons and that resources and equipment were sourced in advance.
- The positive classroom atmosphere and good rapport, supported high levels of student interest and motivation.
- Teachers have high expectations of students.
- A range of appropriate teaching and learning approaches were used and in many lessons students were actively engaged in their learning.
- Good differentiation approaches were utilised to cater for the range of student abilities though some development in this regard will be necessary in a small number of cases.
- A wide range of assessment strategies, including good questioning techniques were used to evaluate students' progress in the majority of lessons though further development of assessment for learning (AfL) strategies will be necessary in some cases.

MAIN RECOMMENDATIONS

- Strategies and approaches should be developed to engage all students more actively in some lessons.
 - Subject planning, schemes of work and Transition Year (TY) planning require further development and review.
 - AfL strategies should be more fully integrated into students' learning experiences; in particular, the practice of providing formative written feedback to students should be expanded.
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INTRODUCTION

Castlecomer Community School is a co-educational post-primary school with a current enrolment of 598 students. The school offers a range of programmes including the Leaving Certificate Vocational Programme (LCVP), the Leaving Certificate Applied (LCA), Post Leaving Certificate (PLC) courses and an optional TY programme. Science is offered as a core subject at junior cycle and Physics, Chemistry, Biology and Agricultural Science are options at senior cycle. Science modules form part of the extensive TY programme.

TEACHING AND LEARNING

- Lessons were guided by intended learning outcomes which were clear, differentiated as necessary, shared with students and revisited at the conclusion of most lessons. This good practice should be extended. All lessons were well structured. Teachers were very well prepared and resources, materials and equipment were sourced in advance.
- Students were affirmed and supported by teachers for their efforts and contributions.
- All teachers demonstrated a high level of competence, expertise and skill in the management, organisation and delivery of lessons.
- Teachers have high expectations of students. The positive classroom atmosphere and good rapport, supported good levels of student interest and motivation.
- A range of appropriate teaching and learning approaches were used and in the majority of lessons students were actively engaged in their learning. In a small number of cases the balance between teacher instruction and student learning required improvement. Therefore, in these instances, active learning approaches and strategies should be planned for and implemented. When topics are introduced and developed due account should be taken of students' views and lessons should be adapted as necessary to facilitate this as a priority.
- Good use of various methodologies including information and communication technology (ICT) advanced and supported student learning and understanding in almost all lessons. The further utilisation of photographs, animations, video and applets as an aid to the understanding of more difficult concepts would have further supported student learning.
- Appropriate differentiation approaches were utilised to cater for the range of student abilities though some development in this regard will be necessary in a small number of cases. Pair and group work generally supported differentiated learning though this could have been further advanced through improved student mobility between groups and by restricting the size of some groups in order to maximise active learning for all group members. The further use of appropriate worksheets in some cases would have placed added focus on the tasks to be completed and would have particularly benefited those students who may have greater difficulties with the subject.
- The whiteboard was used to highlight key words and concepts and as an aid to problem solving in many cases. In this way, and through good use of the keyword journals in first year, students' literacy and numeracy skills were developed and supported. Good focus and attention was placed on subject-specific language. This is praiseworthy as it supports overall scientific literacy development.
- Investigative practical activities formed a key focus of many student activities and were very well organised and implemented. It is important that teachers plan the extent of these activities in such a way that all students can complete the entire task set out in the time available.
- A wide range of assessment strategies, including good questioning techniques were used to evaluate students' progress in the majority of lessons though further development of

AfL will be necessary in some cases. AfL strategies should be more fully integrated into students' learning experiences; in particular, the practice of providing formative written feedback to students should be expanded.

- There was effective use of appropriate and challenging questioning. Best practice was demonstrated when questions were directed at individual students. A good depth of knowledge and understanding was demonstrated by students. The clear focus on homework assignments and correction was a key assessment feature. Examination results are analysed and student academic achievement is monitored.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- The overall provision for science subjects in the school is very good.
- Students are very well supported in making an informed subject choice for Leaving Certificate.
- There is appropriate provision for students requiring learning support.
- Time provision for all science subjects is in line with syllabus recommendations.
- The three science laboratories and preparation areas are very well organised and maintained. Currently access to the laboratories for double periods is meeting student needs.
- Health and safety practices are very good overall and appropriate policies are in place.
- Students are encouraged to partake in a number of co-curricular and extra-curricular activities including Coder Dojo, Sci-Fest, the BT Young Scientists' Competition and Science Week events. Participation in these events promotes the profile of Science in the school.
- Laboratory ICT facilities are good and include teacher laptops, data-projectors, computers and internet access.
- In-service and relevant continuing professional development (CPD) courses are supported by school management for all science teachers. Whole-staff CPD has supported teacher up-skilling in the following areas: child-protection, classroom management, differentiation, and inclusion strategies for students with additional needs.
- Teachers share good practice and initiate professional dialogue visiting each other's class groups as part of the ongoing school improvement plan. This is very good practice.

PLANNING AND PREPARATION

- Good science and physics plans are in place and these outline key areas including how Science and Physics are organised and delivered in the school. A detailed analysis and review comparing school state examination results to national norms is included in the science plan and should be extended across senior cycle science subjects.
- The future development of the plan should include a section on medium to long-term targets for the development of Science and Physics. Areas for possible inclusion and development include further literacy and numeracy strategies, five-year teacher professional development plan for the science department and monitoring the uptake of senior cycle science subjects for boys and girls. Planning for Science as part of junior cycle reform will be necessary in the near future.
- Schemes of work for Science and Physics are available. The schemes of work should avoid listing chapter numbers from a textbook and should use the syllabus learning outcomes as its basis. Further development should include linking each learning outcome to its assessment strategy and to resources utilised and teaching methods employed.

- The content and focus of the TY plan for Science is very good overall. The future focus of TY planning should be on skills development and on including teaching approaches, assessment and evaluation strategies into all TY science modules. _____

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 on the findings and recommendations of the report; the board chose to accept the report without response.