

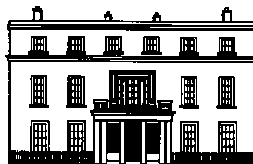
An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Science
REPORT**

**St Mary's College
St Mary's Road, Arklow, County Wicklow
Roll number: 61780A**

Date of inspection: 8 May 2012



**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

INFORMATION ON THE INSPECTION

Date(s) of inspection	8 May 2012
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 five class periods• Examination of students' work• Feedback to principal, deputy principal and teachers

MAIN FINDINGS

- Student enthusiasm and motivation, supported by affirmation of student effort by the teacher, was a key feature of all lessons.
- Students were supported in their learning through the use of appropriate and varied teaching methods which included a strong focus on autonomous and investigative learning in some lessons.
- Effective literacy and numeracy strategies were integrated into classroom activities through good use of the board or information and communication technology (ICT) to highlight key words.
- Consolidation of lesson objectives through the introduction of applications of Science in real life, worked very well in many lessons.
- Modes of assessment included good questioning strategies although some lessons would benefit from more focused use of directed questions.
- Individual and subject department planning for Science is very good overall.

MAIN RECOMMENDATIONS

- The overall structure of lessons should be improved by teachers sharing lesson objectives with students at the outset and by summarising the lesson.
 - Assessment for learning (AfL) strategies should be improved by the provision of formative written feedback to students in their copybooks.
 - Appropriate use of ICT should be further utilised in lessons.
 - The science plan requires development to include agreed priorities for the development of Science in the school.
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INTRODUCTION

St Mary's College Arklow is a voluntary secondary school with an enrolment of 529 female students and serves an urban and rural catchment area. Junior Science is an optional subject and Biology and Chemistry are currently offered at senior cycle. All students study Science as part of the optional Transition Year (TY) programme.

TEACHING AND LEARNING

- Learning objectives were shared with students in a minority of lessons. Therefore, the structure of lessons should be improved by teachers sharing lesson objectives with students at the outset and by summarising the lesson so that learning is further consolidated.
- Revision for forthcoming examinations formed a key part of many lessons observed. Very good links were established with prior learning at the outset of lessons. This approach supported continuity, integration of new material and seamless lesson development.
- Classroom management and organisation facilitated learning. The size of work groups should be limited to a maximum of three students to improve active learning.
- Key features of lessons observed included affirmation of student effort, very good rapport between teachers and students and high expectations of students. The level of challenge was appropriate in the majority of lessons though in a minority of lessons it required considerable improvement.
- Students were supported in their learning through the use of appropriate and varied teaching methods including a strong focus on autonomous and investigative learning in some lessons. Short clear teacher inputs to lessons ensured that learning was focused and consolidated. Key student skills which focused on analysis and critical thinking were developed in many instances and during practical investigations.
- Effective literacy and numeracy strategies were integrated into classroom activities through good use of the board or ICT to highlight key words. Strategies outlined in the science plan were well implemented and played a key role in supporting learning. Teachers circulated classrooms checking students' work and ensuring that students were supported individually in the development of their learning.
- ICT was expertly used in some lessons while in others the opportunity to support learning through ICT was not availed of. It is therefore recommended that teachers plan for the appropriate integration of ICT through the identification of appropriate resources for each section of the course.
- Modes of assessment included good questioning strategies though more focused use of directed questions in some lessons is necessary. Students responded confidently to questions on their work.
- AfL strategies should be improved by the provision of formative written feedback to students in their copybooks. The allocation of a portion of the school examinations to the completion and recording of student practical work would further support an overall improvement in the quality of laboratory notebooks.
- Examination results are analysed and academic student achievement is monitored. This data should be used more extensively to further inform teaching and learning, the improved uptake of higher level, and the school's AfL strategies.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- The overall uptake of junior Science is high. Students are well supported in making an informed subject choice. Class groups are formed in Biology and Chemistry each year. Leaving Certificate physics is not currently part of the school curriculum. However, the school has been successful in promoting and supporting the subject to such an extent that a fifth-year physics class group will be formed in the next academic year. In meeting with senior management and the science teachers, suggestions discussed to support small numbers choosing Physics in future years included networking with local schools and combining fifth and sixth-year physics students into a single class group.
- All TY students study Science. The science programme for TY includes practical modules in Physics, Chemistry and Biology. The content and focus of the TY plan for Science promotes the development of appropriate skills in line with overall TY programme objectives.
- The school's two laboratories, chemical storage and preparation areas are well organised. Laboratory access for double periods is restricted due to lack of overall laboratory provision. School management needs to plan for increased laboratory provision in the future. Teachers are commended for working collaboratively to prioritise access to laboratories for double periods.
- Teachers are aware of students' individual needs, plan for differentiation and have forged effective links with the learning support department.
- The school's health and safety policy was last updated in November 2010. Science laboratory rules are signed by students and parents in advance of students partaking in practical laboratory activities. This is praiseworthy.
- The commitment of teachers to encouraging students to engage in a range of science-related co-curricular and extra-curricular activities is good.
- The school operates a policy of continuous assessment up to Christmas. Formal examinations take place at summer for first, second and fifth-year students. Third and sixth-year students sit pre-examinations in February.
- Relevant continuing professional development (CPD) courses and membership of a professional association are supported by management. Deployment of science teachers to year groups at junior and senior cycle should ensure that capacity building within the department is optimised.

PLANNING AND PREPARATION

- Individual and overall planning for Science is very good. However, the science plan requires further development to include agreed priorities for the development of Science in the school. Long-term planning should further focus on identified areas to enhance learning including; AfL, scientific literacy and numeracy, teacher upskilling, effective teaching methods including ICT. Overall science provision into the future at junior and senior cycle also deserves attention as do facilities and infrastructure.
- Comprehensive and collaborative plans and schemes of work have been developed. The agreed schemes of work should be further developed to include methodologies, assessment strategies and resources for each section of the course.
- Science department planning meetings are regularly convened by the co-ordinator and minutes reveal the wide range of relevant topics discussed. The themes of recent meetings included discussion on leadership of learning, literacy and numeracy and the development of independent 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 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.

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