

**An Roinn Oideachais agus Scileanna**

**Department of Education and Skills**

**Subject Inspection of Science, Biology and Agricultural  
Science  
REPORT**

**Christian Brothers School  
Thurles, County Tipperary  
Roll number: 65450W**

**Date of inspection: 5 April 2011**



**AN ROINN | DEPARTMENT  
OIDEACHAIS | OF EDUCATION  
AGUS SCILEANNA | AND SKILLS**

**REPORT**  
**ON**  
**THE QUALITY OF LEARNING AND TEACHING IN SCIENCE, BIOLOGY AND**  
**AGRICULTURAL SCIENCE**

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**INFORMATION ON THE INSPECTION**

<b>Date(s) of inspection</b>	5 and 6 April 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 seven class periods</li><li>• Examination of students' work</li><li>• Feedback to principal and teachers</li></ul>

**MAIN FINDINGS**

- The standard of teaching and learning observed in the main was good; some lessons were satisfactory with a minority at a very good standard.
- Science is a core subject in junior cycle.
- Subject co-ordinators are appointed. The role is rotated among members of the science team, which is good practice.
- Information and communication technology (ICT) is available for use in the sciences.
- Work has begun on the organisation of science resources into boxes to facilitate easy and efficient use. The current storage arrangement for chemicals is not satisfactory.
- To allow for a meaningful experience of practical work, the number of students in year one Leaving Certificate Agricultural Science class needs to be reviewed.

**MAIN RECOMMENDATIONS**

- Subject department plans should be further developed and expanded. The use of planning templates presented by some of the team would be very beneficial in this work.
  - New chemical storage cabinets should be obtained and the chemicals should be stored according to best safety practice.
  - As part of planning, the science team should decide on the skills which students should attain in each year in relation to the practical components of the syllabuses. These skills should give students the ability to undertake and write up practical activities from their own experience of the task.
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## INTRODUCTION

Christian Brothers School is situated in Thurles, County Tipperary and provides post-primary education currently to 632 boys. The school provides the Junior Certificate followed by an optional Transition Year (TY) programme. Students then choose either the Leaving Certificate or the Leaving Certificate Vocational Programme (LCVP). The school has a building project in development which should lead to the provision of another science laboratory.

## TEACHING AND LEARNING

- The quality of teaching and learning in the main was good with some lessons satisfactory and a minority of lessons of a very good standard. Most lessons were structured with an appropriate pace observed. In instances where the intended learning outcomes were shared at the start of the lesson learners were more focused. The structuring of all lessons in this way is recommended, allowing time for review as the lesson nears completion.
- A good rapport was evident between the learner and the teacher. Students were well behaved and a positive atmosphere pervaded.
- In some lessons ICT was effectively used to highlight important points and provide appropriate visual images.
- Some good examples of questioning were observed; these included the use of effective probing techniques to ascertain answers from the students. The use of more higher-order questions and a *learning check* for students during lessons is worth considering as it would help both teacher and learner evaluate learning.
- The further development of the keyword concept and further use of differentiation is recommended to help to support the enhancement of students' literacy and numeracy skills.
- Some of the lessons observed contained student practical activity or teacher demonstration. Students were very enthusiastic about these activities, the organisation of which varied. Students' learning was enhanced when the materials required for the task were easily available, the students worked in small groups, the task had a definite focus and there was some student participation in the demonstration. There is a need to develop students' practical skills further especially their ability to undertake and write up practical activities from their own experience of the task. This should be addressed by the science team. Increased use of an enquiry-based approach to the teaching of science subjects is recommended.
- The presence of science-related notice boards is noted. The further development of a print rich environment to include material of student origin is to be encouraged with regular updating required to support learning.
- Homework was assigned and previous work corrected in some of the lessons observed. This good practice should feature regularly in all lessons. Some monitoring of student practical copies was also noted. Follow through on students' corrections should occur with students awarded marks for their practical copies as part of their overall grade in the subjects.
- Students' progress is monitored through regular tests. Common assessments are used to ensure standardisation of learning across the year groups, which is good.

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

- Whole-school support for the sciences is good. All students study Science in mixed-ability classes. Biology, Chemistry, Physics and Agricultural Science are provided as optional subjects in senior cycle. The current uptake of the Leaving Certificate sciences varies, with between one quarter and one third of the Leaving Certificate cohort studying Biology and or Agricultural Science. Subject-option bands for senior cycle are created based on students' initial subject choices, which is positive.
- The time allocation for the sciences facilitates the delivery of all aspects of the syllabuses.
- The number of students allocated to year one Leaving Certificate Agricultural Science should be reviewed to facilitate the completion of the practical components of the syllabus.
- The science team is currently in the process of reorganising equipment for students' practical activities into topic specific boxes. This should proceed to completion in a timely fashion with all laboratory spaces set up for junior Science. The auditing of existing materials and equipment should also be undertaken with the results used to inform future resource requirements. Service and repair of relevant equipment should be organised with broken and obsolete items disposed of in the appropriate manner.
- The school has three laboratories and one demonstration room. The use of one additional classroom for the sciences is noted. Teachers are assigned to specific laboratory spaces. The physics laboratory is accessed via another laboratory and has limited electricity and gas provision. It should be judiciously used when the new science facilities are available. Rotation for access to the laboratories occurs among the science teachers which is good.
- The laboratories have no separate storage and preparation area. As a result the chemicals are stored within the laboratories. The provision of new suitable chemical storage cabinets is recommended. Chemicals should be colour coded and stored in accordance with safety guidelines.
- The conversion of room eight into a proper science facility should be considered. Appropriate storage facilities which contain basic equipment requirements for course delivery should be organised by the team.

## **PLANNING AND PREPARATION**

- Collaboration among science teachers is good. Subject co-ordination facilitates the running of the department. Minutes of department meetings are retained. This is positive.
- A common programme of work for each of the science programmes has been devised. Topics are listed on a yearly basis. Building on this good work and on the significant work done by the teachers on an individual basis, it is recommended that the programme should be written in the form of learning outcomes and that these learning outcomes should be linked to timeframes, teaching and learning methodologies and the resources to be used.

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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 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 2011*

# **Appendix**

**SCHOOL RESPONSE TO THE REPORT**

**Submitted by the Board of Management**

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

The Board of Management of Thurles C.B.S. welcomes this positive report and we accept the recommendations as part of the reflective approach existing within the school. It notes in particular the good rapport between students and teacher and the effective use of information technology.

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

Recommendations have become part of the school planning.