An Roinn Oideachais
Department of Education

Subject Inspection: Science and Agricultural Science
Report

REPORT

Ainm na scoile/School name	Christian Brothers College
Seoladh na scoile/School address	Monkstown Park Dun Laoghaire Co Dublin
Uimhir rolla/Roll number	60180R
Dáta na cigireachta/ Date of evaluation	14-10-2022
Dáta eisiúna na tuairisce/Date of issue of report	12/12/2022

What is a subject inspection?

Subject Inspections report on the quality of work in individual curriculum areas within a school. They affirm good practice and make recommendations, where appropriate, to aid the further development of the subject in the school.

How to read this report

During this inspection, the inspector evaluated learning and teaching in Science and Agricultural Science under the following headings:

1. Teaching, learning and assessment
2. Subject provision and whole-school support
3. Planning and preparation

Inspectors describe the quality of each of these areas using the Inspectorate's quality continuum which is shown on the final page of this report. The quality continuum provides examples of the language used by inspectors when evaluating and describing the quality of the school's provision in each area.

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.

Actions of the school to safeguard children and prevent and tackle bullying

<table>
<tr><td colspan="2">During the inspection visit, the following checks in relation to the school's child protection and anti-bullying procedures were conducted:</td></tr>
<tr><td>Child Protection</td><td>Anti-bullying</td></tr>
<tr><td>1. The name of the DLP and the Child Safeguarding Statement are prominently displayed near the main entrance to the school.
2. The Child Safeguarding Statement has been ratified by the board and includes an annual review and a risk assessment.
3. All teachers visited reported that they have read the Child Safeguarding Statement and that they are aware of their responsibilities as mandated persons.</td><td>1. The school has developed an anti-bullying policy that meets the requirements of the Anti-Bullying Procedures for Primary and Post-Primary Schools (2013) and this policy is reviewed annually.
2. The board of management minutes record that the principal provides a report to the board at least once a term on the overall number of bullying cases reported (by means of the bullying recording template provided in the Procedures) since the previous report to the board.
3. The school's anti-bullying policy is published on its website and/or is readily accessible to board of management members, teachers, parents and pupils.</td></tr>
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The school met the requirements in relation to each of the checks above.

Subject inspection

Date of inspection	10-10-2022 & 14-10-2022
Inspection activities undertaken • Review of relevant documents • Discussion with senior management and teachers • Interaction with students	• Observation of teaching and learning during nine lessons • Examination of students' work • Feedback to senior management and teachers

School context

Christian Brothers College is a fee-charging boys' secondary school with an enrolment of 526 students. As well as the Junior Cycle (JC) and Leaving Certificate (LC) programmes, there is an optional Transition Year (TY) programme.

Summary of main findings and recommendations:

Findings

- The quality of teaching, learning and assessment in the lessons observed was good overall, with aspects of very good practice and satisfactory practice observed.
- Students were provided with good opportunities for subject-specific dialogue, and they demonstrated very good oral communication skills, capably constructing scientific sentences according to the depth of their individual understanding of concepts.
- Teachers prepared practical work for students, and this appropriately developed skills and their understanding of good scientific practices; some possibilities for improvement exist in developing students' capacities for open-ended investigations.
- Students capably worked collaboratively, taking on experimental work and activities eagerly.
- The quality of subject provision and whole-school support was satisfactory overall, with good support for the subjects in the school's curriculum and timetable, but there were deficiencies in the resources for required students' practical work.
- The quality of teachers' individual planning and preparation for lessons was generally good while teachers' collaborative planning practices were satisfactory.

Recommendations

- Teachers should review in detail how the sequence of planned practicals maximises opportunities for students to incrementally develop and refine their investigative and research skills, and further develop ways in which students could engage in more open-ended investigations.
- In those instances when teachers' questioning required improvement, teachers should ensure that every student is engaged in thinking and has sufficient opportunity to formulate a response.
- School management should, without delay, take action to provide appropriate resources for LC Agricultural Science so that students access resources for the required completion of the specified practical activities and student investigations.
- Teachers should more regularly engage in collective planning for teaching, learning and assessment, and integrate the school self-evaluation approaches in subject planning.

Detailed findings and recommendations

1. Teaching, learning and assessment

- The quality of teaching, learning and assessment in the lessons observed was good overall, with some very good practice and some satisfactory practice observed.
- Good and productive dialogue was observed throughout lessons. Teachers' explanations of concepts were generally of a high quality.
- Teachers provided good opportunities for students to use subject-specific dialogue, and this was mainly through the use of questioning and scientific practicals.
- Questioning was generally good. When used very well, questions promoted thinking, elicited deeper understanding, enabled connections to be made between concepts and provoked analysis of experiments. The questions encompassed in-class assessment that informed teaching and progressed learning. Questions were directed at named students, and all students expected to be asked and were ready to respond.
- When less effective, questioning did not sufficiently engage learners in deeper thinking of the concept, as it focused mainly on recall, or was global and the questions were being answered by the more vocal learners.
- Teachers prepared presentations as an aid to teaching and learning. When used well, these incorporated learning intentions and learning checks. In some instances, when practice was less than satisfactory, teachers' presentations had too much content or were used to present abstract concepts whereas concrete experiences would have been a better choice in a lesson held in a laboratory.
- Overall, during lessons observed, students were very attentive and motivated to learn; they expected to work and to achieve and they enjoyed their learning. Students capably worked collaboratively, conducting experimental work and activities eagerly.
- Students demonstrated very good skill in speaking clearly and accurately, and they capably constructed good scientific sentences, according to the depth of their individual understanding of concepts.
- Good practices in inclusion were observed when teachers recognised varied ability and prepared tasks that provided differentiation. There was some good use of choice boards for homework. Teachers also strategically provided one-to-one in-class support during tasks. When Ukrainian students were present, dual language slides supported learning.
- In some lessons observed, teachers placed good emphasis on enabling students to develop ownership of their own learning. In these instances, the teacher encouraged students to write notes using their own words as new concepts were encountered. Very good practice was also observed when students were enabled to extend each other's answers, and when students took feedback from their teacher and improved their work.
- In the senior cycle lessons, it was very positive to observe that the teaching strategies employed enabled the development of students' critical thinking skills and the application of knowledge.
- Teachers prepared practical work for students, and this appropriately developed their scientific skills. Teachers placed suitable emphasis on developing students' understanding of good scientific practices before and during investigations.
- In the best lessons, students were very well guided by teachers to develop skills in posing testable hypotheses, analysing data, drawing conclusions and reporting on their investigations, both orally and in written format. Good practice was observed when teachers helped students to more effectively collate experimental results and this supported their interpretation of data.
- Less well developed, however, was learners' skills in designing open-ended investigations and carrying out their own investigations, as the experimental method was usually prescribed beforehand. This merits consideration so that skills in designing investigations are progressively developed through the first and second year of each course. Students should reach a high level of capacity to do extended experimental investigations in JC and an independent investigative study in LC.

- The quality of students' written laboratory reports varied and some enhancement of this skill could be achieved. Where satisfactory, report writing was strategically included with the practical activity or homework. Some teachers guided students in free writing and they drafted good reports.
- Teacher correction of tests provided a valuable assessment of students' progress in subjects. The correction of homework was generally acceptable level of quality.

2. Subject provision and whole school support

- Subject provision and whole-school support for the subjects was satisfactory overall.
- Management supports the subjects well in the school's curriculum and in the time allocated. All students are given access to Science; it is a core subject in the school's JC programme.
- Agricultural Science is a new subject in the school's LC programme for the past two years. Currently, one sixth-year class studies Agricultural Science but no group in fifth year. It is good that Agricultural Science is available to all TY students in an eight-week module, as this promotes the subject.
- Teacher deployment is generally good. In all instances where student teachers on placement are deployed, they are co-timetabled for lessons with the class group's qualified teacher. It would be useful for the teachers involved to regularly critique how this arrangement is supporting students' learning with those who lead learning.
- There are five laboratories. There is very good access to these for double and single lessons.
- While the laboratories are fairly well-stocked with materials for students practical work in Science, it would be useful to audit all resources to ensure there is sufficient quantities of equipment for students' hands-on practical work.
- The storage of chemicals should also be audited in line with current guidance.
- There were deficiencies in the resources for required students' practical work in Agricultural Science. Management should, without delay, provide appropriate resources for the curriculum, and especially expedite the plan to erect a polytunnel and plant existing raised beds with suitable crops. A range of items including propagators, test kits, seeds, charts, data sensors and better electronic balances are also needed.

3. Planning and preparation

- Teachers' individual planning for lessons was generally good. In most instances, teachers prepared lessons to provide a very good balance between the development of knowledge and skills.
- An appropriately detailed subject plan supports teachers in meeting the curricular requirements of both subjects. It is good that there is place in the plans to record reflection on their implementation and that a detailed assessment plan is agreed.
- In practice, however, JC science teachers mostly use a synopsised one-page plan listing chapters of a book, and this is too linear to be flexible enough to best meet the specified requirements of the science specification.
- In both subject plans, action should be taken to adapt the linear sequencing of chapters to one that optimises a more flexible approach to learning, such as units of learning. In addition, more detail is needed so that planning for the incremental development of students' skills in scientific practices is clearer. The plans should also be demonstrably adapted year-on-year to meet the specific needs of particular cohorts.
- Teachers' collaborative, subject department planning was satisfactory. Teachers should engage in further collective review of teaching, learning and assessment practices. They could more regularly critically discuss progress with learner outcomes, particularly investigation and research outcomes.

- The integration of the school self-evaluation process was unclear in the subject plans and lessons observed. Planning should include agreed whole-school approaches to teaching, learning, literacy and numeracy.

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.

Appendix

SCHOOL RESPONSE TO THE REPORT

Submitted by the Board of Management

Part A Observations on the content of the inspection report

In this first, post Covid-19 inspection, the school's Board is pleased that the quality of teaching, learning and assessment in the lessons was good overall and that the students were provided with good opportunities for subject specific dialogue. The school's Board are happy that students worked well collaboratively, taking on experimental work and activities eagerly.

The Board takes its duties in relation to Child Protection and Anti-Bullying very seriously and was glad that the Inspectors found that the school met all the requirements in relation to the associated checks.

Part B Follow-up actions planned or undertaken since the completion of the inspection activity to implement the findings and recommendations of the inspection.

During this SSE Review year 2022-23, our school will continue to use the SSE process to identify and reflect on the impact of COVID-19 on our students' educational experiences and outcomes, their wellbeing, their motivation to learn and their engagement in learning.

The school has secured funding to provide appropriate resources for LC Agricultural Science and has already initiated the provision of a Poly-tunnel, raised beds and other resources to assist with the subject's specified practical activities and student investigations.

The Board and subject teachers recognise and appreciate the need for further collective and collaborative planning among the teachers and that when required, teachers' questioning will ensure that all students are engaged in thinking. Teachers have already begun to review and enhance the sequence of planned practicals so that our students can continue to develop and refine their investigative and research skills, especially open-ended investigations.

The Inspectorate's Quality Continuum

Inspectors describe the quality of provision in the school using the Inspectorate's quality continuum which is shown below. The quality continuum provides examples of the language used by inspectors when evaluating and describing the quality of the school's provision of each area.

Level	Description	Example of descriptive terms
Very Good	*Very good* applies where the quality of the areas evaluated is of a very high standard. The very few areas for improvement that exist do not significantly impact on the overall quality of provision. For some schools in this category the quality of what is evaluated is *outstanding* and provides an example for other schools of exceptionally high standards of provision.	Very good; of a very high quality; very effective practice; highly commendable; very successful; few areas for improvement; notable; of a very high standard. Excellent; outstanding; exceptionally high standard, with very significant strengths; exemplary
Good	*Good* applies where the strengths in the areas evaluated clearly outweigh the areas in need of improvement. The areas requiring improvement impact on the quality of pupils' learning. The school needs to build on its strengths and take action to address the areas identified as requiring improvement in order to achieve a *very good* standard.	Good; good quality; valuable; effective practice; competent; useful; commendable; good standard; some areas for improvement
Satisfactory	*Satisfactory* applies where the quality of provision is adequate. The strengths in what is being evaluated just outweigh the shortcomings. While the shortcomings do not have a significant negative impact they constrain the quality of the learning experiences and should be addressed in order to achieve a better standard.	Satisfactory; adequate; appropriate provision although some possibilities for improvement exist; acceptable level of quality; improvement needed in some areas
Fair	*Fair* applies where, although there are some strengths in the areas evaluated, deficiencies or shortcomings that outweigh those strengths also exist. The school will have to address certain deficiencies without delay in order to ensure that provision is satisfactory or better.	Fair; evident weaknesses that are impacting on pupils' learning; less than satisfactory; experiencing difficulty; must improve in specified areas; action required to improve
Weak	*Weak* applies where there are serious deficiencies in the areas evaluated. Immediate and coordinated whole-school action is required to address the areas of concern. In some cases, the intervention of other agencies may be required to support improvements.	Weak; unsatisfactory; insufficient; ineffective; poor; requiring significant change, development or improvement; experiencing significant difficulties;