

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection in Science & Physics

REPORT

Ainm na scoile / School name	Christian Brothers Secondary School
Seoladh na scoile / School address	Thomas St Wexford
Uimhir rolla / Roll number	63640R

Date of Inspection: 19-09-2018



An Roinn Oideachais
agus Scileanna
Department of
Education and Skills

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 & Physics 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.

CHILD PROTECTION

During the inspection visit, the following checks in relation to the school's child protection procedures were conducted:

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.

The school met the requirements in relation to each of the checks above.

SUBJECT INSPECTION

INSPECTION ACTIVITIES

Dates of inspection	18-09-2018 and 19-09-2018
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with principal, deputy principal and key staff• Interaction with students	<ul style="list-style-type: none">• Observation of teaching and learning during six class periods• Examination of students' work• Feedback to principal and relevant staff

School context

Wexford CBS is a voluntary secondary school for boys under the patronage of Edmund Rice Schools Trust. The school has a current enrolment of 642 students. The school offers the Junior Cycle, the established Leaving Certificate, the Leaving Certificate Vocational Programme (LCVP) and an optional Transition Year (TY) programme.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

Findings

- The overall quality of teaching, learning and assessment was good; while there were some elements of satisfactory and very good practice; there were also some evident weaknesses that impacted on students' learning.
- Positive classroom management strategies were generally in evidence and students were in the main focused and motivated to learn.
- Where less satisfactory practice was observed, students were not sufficiently engaging in inquiry-based learning, differentiation strategies required improvement, and student evaluation of learning was not in evidence.
- There is good curricular provision and timetabling for science education in the school.
- Individual teacher planning for the majority of lessons was good, and teachers work together to devise learning opportunities across and beyond the curriculum.

Recommendations

- Teaching approaches should be reviewed so that there is a more appropriate balance between teacher instruction and student activity, and greater focus on inquiry-based learning and differentiation strategies in line with the Junior Cycle Framework.
- Teachers should ensure that students are more engaged in meaningful practices that reinforce learning and that support enhanced student ownership of and responsibility for learning.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING, LEARNING, AND ASSESSMENT

- The overall quality of teaching, learning and assessment was good; while there were some elements of satisfactory and very good practice; there were also some evident weaknesses that impacted on students' learning.
- Students were motivated to learn through positive classroom interactions in most lessons. During a lesson on the human reproductive cycle, for example, the supportive and affirmative atmosphere encouraged positive student engagement.
- Effective classroom management strategies were generally in evidence. Best practice was observed when teachers ensured that there was a high level of engagement with an appropriate level of challenge. For example, during a lesson on respiration and photosynthesis, students worked collaboratively and purposefully to successfully develop their knowledge and skills.
- Most lessons were well planned and structured. Teachers identified and prepared in advance resources and activities suitable for the specific learning intentions. However, a significant minority of lessons were teacher-led without sufficient opportunities for meaningful student contribution. Lessons were successful when guided by learning intentions and when students actively contributed to the fulfilment of these intentions. It is recommended that teachers create more opportunities for students to reflect on and evaluate their own learning during lessons.
- Student problem-solving skills were maximised when they were provided with opportunities to think creatively and critically. Best practice was observed when students applied skills and learning to solving problems in unfamiliar contexts. For example, senior cycle physics students developed good problem-solving skills during a lesson based on the theme of focal lengths of mirrors and lenses.
- Learning was effective when students worked independently and collaboratively and had a clear sense of attainable learning outcomes. Where less satisfactory practice was observed, students were not sufficiently engaging in inquiry-based learning, student note-taking was excessive, differentiation strategies required improvement and student evaluation of learning was not in evidence.
- Teaching approaches should be reviewed in many lessons so that there is a more appropriate balance between teacher instruction and student activity, and greater focus on inquiry-based learning and differentiation strategies in line with the Junior Cycle Framework.
- Teachers should ensure that students are more engaged in meaningful practices that reinforce learning and enhance student ownership of and responsibility for learning.
- Students carried out practical activities safely and efficiently. Students developed good practical and observation skills during a lesson on the theme of rates of chemical reactions and preparation of gases.
- Information and communication technology (ICT) was generally used appropriately to present, collate, support and reinforce learning. Useful and informative teacher demonstrations also advanced learning.
- Teachers purposefully supported literacy and numeracy skills during some lessons. Key words and concepts were highlighted on the board and in some cases teachers circulated to check students' understanding of scientific and mathematical concepts.

- In some cases, students were provided with constructive, developmental written feedback from teachers. This good practice should be extended to help all students to identify clear strategies for improvement.
- Question and answer sessions worked well in lessons where students were encouraged to think and reflect, where questions were of higher order and were differentiated, where the focus was not only on students who raised their hands and where teachers used individual questions to maximise inclusion and participation in learning. When questioned, many students displayed good levels of knowledge and understanding.
- Appropriate homework tasks were corrected and assigned during lessons. It is recommended that students are set a research task in advance of the introduction of new topics and given the opportunity to present and be questioned on their acquired knowledge.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Curricular provision and timetabling for science education is generally good. Science is optional at junior cycle while Physics, Chemistry, Biology and Agricultural Science are offered at senior cycle. TY students experience modules in the science subjects.
- Students are encouraged to partake in co-curricular and extra-curricular activities including SciFest, field trips and science week events.
- Reports are sent to parents following major school assessments. State examination results are analysed. Teachers should engage in contextual reflection on trends and outcomes as part of overall science planning in an effort to ensure that students are accessing subjects at the appropriate level and are achieving to the best of their abilities.
- School management generally deploys science teachers well. However, not all teachers teach both junior and senior cycle science subjects. Deployment to both cycles would allow junior students to experience specialist teachers across the sciences and give all teachers experience in teaching the new specification in Science.
- School management encourages and supports all teachers to attend continuing professional development (CPD) courses. It is essential that all science teachers remain upskilled regarding the new science specification. Records of teacher CPD should form part of science planning. New teachers in the school should have strong mentoring and support both from school management and from subject department colleagues.
- Resources were generally well utilised to support learning. The further integration of ICT into teaching and learning is recommended and a science department policy in this regard should be considered in order to maximise the effectiveness of this resource.

3. PLANNING AND PREPARATION

- Individual teacher planning for the majority of lessons was good. Teachers have worked collaboratively on subject planning strategies that embrace the new science specification. Templates from the Junior Cycle for Teachers (JCT) resource have been well utilised to develop curriculum planning in Science. This work is ongoing.
- Teachers work together to devise learning opportunities across and beyond the curriculum. However, in order to streamline science planning into the future, co-ordination of Science should be carried out by a teacher who is currently teaching the new specification and attending CPD provided by the JCT. This role could be carried out on a voluntary rotation basis as is current practice in many schools.

- Minutes of recent science department meetings document very good collaborative practices including discussions on common assessments, teaching and learning strategies, planning for classroom based assessments (CBAs) and systems for sharing resources.
- The science plan is comprehensive and well developed overall. It outlines current science provision and addresses some new specification requirements. The plan outlines innovative areas including trialling the presentation of the completed extended experimental investigations (EEIs) of third-year students to second years, the inclusion of student practical assessment and extended use of reflective practice methodologies for teachers and students.
- The physics plan outlines the selected textbook chapters that are covered each term and references areas such as assessment, resources and numeracy. This plan requires review to include teaching and learning strategies, ongoing assessment practices, and targets for subject development.
- Curricular plans for Science require further development to reflect the essence of the new specification in Science. Some areas for development include the integration of science action verbs, differentiation and learning outcomes to match the needs and interests of students, integration of key skills including literacy and numeracy, and a whole-school approach to developing teaching and learning as part of the Junior Cycle Framework.
- Transition Year science plans outline the content of modules in the senior science subjects; however, the material included is from the Leaving Certificate in the main. While some of this material is useful in providing a subject sample, further diversity in TY planning to include project work and applications of each subject is recommended.

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 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 of quality 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 <i>very good</i> 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;

Appendix

SCHOOL RESPONSE TO THE REPORT

Submitted by the Board of Management

Part A Observations on the content of the inspection report

The Board of Management welcomes the positive findings of the recent subject inspections in Science and Physics that affirms much of the positive work ongoing in the school. The school's engagement with the ETBI'S Instructional Leadership Programme underlines the school's continuing commitment to fostering high standards in teaching and learning in the school. The BOM is committed to building on its strengths and is progressing actions to address the areas identified as requiring improvement.

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

The Board of Management (BOM) of the CBS Secondary School, Wexford accepts and welcomes the positive Subject Inspection report for Science & Physics, which indicated that the overall quality of teaching, learning and assessment was good and that there were some elements of satisfactory and very good practice. This assessment, in accordance with the Inspectorate quality continuum, indicates that the strengths in this area clearly outweigh the areas in need of improvement. Notwithstanding these strengths, the BOM and School Management are fully committed to addressing those areas identified for improvement.

At its meeting of 17/09/2018, the BOM approved a new leadership and development plan that seeks to embed the ethos of the school as set out in the E.R.S.T. Schools Charter and agreed new roles and responsibilities based on a distributed leadership model to focus resources in the following prioritised areas:

- Support and promote the school ethos, high quality in student care, learning and teaching and the development of student voice, participation and leadership.
- Collaborate with colleagues in ongoing review and critique of school policies in line with SSE principles and in promoting a culture of professional responsibility and accountability.
- Foster and maintain a positive learning environment within the school ensuring an ongoing focus on academic excellence among all students.
- To lead on the development and finalisation of the school's ICT strategy including policies and resources to create and maintain a learning organisation.
- Promote and facilitate the development of opportunities for all members of the school community, staff and student to respond to the evolving needs of the staff, school and to changes in education on an ongoing basis.

The BOM has delegated the assignment/re-assignment of Roles and Responsibilities to the Principal and looks forward to working with the principal, deputy principal, assistant principals and dedicated staff to the achievement of an excellent teaching and learning environment at CBS Wexford.

The BOM also notes that the school's child protection procedures met all requirements.

Subject planning issues will be addressed by the respective subject areas.

The BOM wishes to highlight that the school has been engaged with the Droichead programme for some time now as a model of mentoring support for teachers.