



An Roinn Oideachais
Department of Education

Subject Inspection: Science & Biology Report

REPORT

School name	Coláiste Dún an Rí
School address	Ernan's Hill Kingscourt Co. Cavan
Roll number	76313A
Date of evaluation	24-10-2023
Date of issue of report	19/12/2023

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(s) evaluated learning and teaching in Science & Biology 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 on the findings and recommendations of the report; the board chose to accept the report without response.

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

During the inspection visit, the following checks in relation to the school's child protection and anti-bullying procedures were conducted:	
<i>Child Protection</i>	<i>Anti-bullying</i>
<ol style="list-style-type: none">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.	<ol style="list-style-type: none">1. The school has developed an anti-bullying policy that meets the requirements of the <i>Anti-Bullying Procedures for Primary and Post-Primary Schools (2013)</i> 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 <i>Procedures</i>) 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/students.

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

Subject inspection

Date of inspection	24-10-2023
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with principal and key staff• Interaction with students, including focus groups	<ul style="list-style-type: none">• Observation of teaching and learning during 5 lessons• Examination of students' work• Feedback to principal and relevant staff

School context

Coláiste Dún an Rí is a co-educational post-primary school which caters for a total of 703 students. The school operates under the patronage of Cavan Monaghan Education and Training Board (CMETB) and provides the Junior Cycle, Leaving Certificate, Leaving Certificate Applied (LCA) and an optional Transition Year (TY) programme. The school also has a special unit known as the Leap Centre. Science is a core subject at junior cycle level. Biology, Chemistry, Physics and Agricultural Science are available as optional subjects in senior cycle. A taster programme includes all the science subjects in TY. Leaving Certificate Physical Education (LCPE) is also included as a module in TY with a view to its provision as a LC option in the future.

Summary of main findings and recommendations:

Findings

- The overall quality of teaching and learning was very good; the most effective lessons actively engaged learners through varied, purposeful, well-paced and interesting tasks.
- A highly effective flow of activities allowed all learners to experience challenge and success within tasks; teachers used differentiated resources to support some learners and to challenge others.
- Practical work was well organised and well managed with very good attention to health and safety procedures.
- A student focus group held during the evaluation described the provision of a range of opportunities to display their learning such as the development of posters, models, PowerPoint presentations and research tasks.
- The overall quality of planning and preparation for Science and Biology was good with some very good practices in evidence; the science team are hardworking and collegial, meetings were held regularly, and resources were shared through an online sharing platform.

Recommendations

- It is recommended that teachers structure lessons to allow a good balance between learner voice and teacher voice in lessons and plan opportunities to increase learner voice in the classroom.
- The science team should explore a common approach to assessment of student work including the identification of those areas of work in which students would best benefit from formative feedback.
- The hyperlinking of the learning intentions to suitable methodologies and resources should be incorporated into planning for junior cycle science and senior cycle biology as a next step in making the plans more accessible and helping to keep them up to date.

Detailed findings and recommendations

1. Teaching, learning and assessment

- The overall quality of teaching and learning was very good. All lessons were well prepared and resources were chosen that enhanced and supplemented the lesson content. The most effective lessons were structured to actively engage learners through varied, purposeful, well-paced and interesting tasks. In one lesson, very good use of a simulation application was observed which allowed learners to observe the effects of modifying temperature and pressure on particles in matter.
- All teachers shared the learning intentions with students at the outset of lessons and related them to prior learning. There was a very good focus on subject-specific key words. In the majority of instances, teachers set out key words at the beginning of the lesson and encouraged discussion as to their meaning while in a minority of instances teachers focused on key words as they arose in the course of the lesson. Both practices proved very effective.
- A highly effective flow of activities allowed all learners to experience challenge and success within tasks. Learners processed new information linking it to previous learning and to everyday activities. Teachers adopted a differentiated approach to teaching in the form of resources to support some learners and to challenge others. Teachers also provided individualised assistance to learners and small groups where required; such forms of differentiated scaffolds for learners were highly effective in engaging the learners and in encouraging purposeful work.
- Learning was supported through well-facilitated brainstorming activities and the use of simulation applications. In a minority of instances, there was an over reliance on teacher talk and opportunities were missed to allow learners to discuss their learning. It is recommended that teachers be mindful of maintaining a good balance between learner voice and teacher voice in lessons and plan opportunities to increase learner voice in the classroom.
- The teachers provided a safe, caring environment, and interactions between students and teachers were very respectful. Classroom management was excellent.
- Practical work was well organised and well managed with very good attention to health and safety procedures. A code of conduct for laboratory practice was signed by all learners at the start of the school year.
- Overall, assessment was good with some very good practice evident. Oral questioning was the dominant methodology and used well to check students' progress, knowledge and understanding. Teachers were highly effective in the use of a range of questioning techniques, including directed, open and follow-on questions.
- Homework was set in all lessons during the evaluation. Homework tasks ranged from workbook and worksheet activities to research tasks. Student written work and copybooks were generally tidy and well maintained. Students' work was regularly corrected in most instances and, from time to time, constructive and encouraging comments were documented which focused on progress and improvement. The science team should explore a common approach to assessment of student work and encourage students to follow up on teacher advice and feedback.
- Highly effective practice was observed where directional formative feedback was provided to students on the quality of their work in assessment tests. A template was used, which promoted reflection and asked students to identify actions they can take to improve their achievement. The template also included directional feedback from the teacher. There was scope to extend this very good practice of formative feedback to other areas such as in student notebooks and folders. The subject department should discuss, identify and plan areas of work in which students would best benefit from formative feedback.
- A student focus group was held during the evaluation and students talked confidently about their learning in Science and Biology. Learners described the provision of a range of opportunities to display their learning such as the development of posters, models,

presentations and research tasks. The learners reported that they enjoyed a range of activities in lessons and that they could approach a teacher for extra help if required.

2. Subject provision and whole-school support

- The overall quality of subject provision and whole-school support for junior cycle Science and senior cycle Biology was very good.
- The school has three laboratories which were bright and well maintained with a high level of subject-specific terminology and student-generated work displayed on walls.
- The laboratories were well resourced with science equipment as well as data projectors, internet access and whiteboards. Appropriate safety equipment was in place. Chemicals were correctly stored in accordance with best-practice guidelines. Teachers of science had actively engaged in recent subject-specific continuing professional development (CPD) and the outcomes from this professional development had been discussed and shared with the science team.
- Students were facilitated to participate in science-related extra-curricular and co-curricular activities, for example, SCIFEST, BT Young Scientist and Technology Exhibition as well as a range of activities during Science Week. In addition, it is commendable that the school holds an in-house STEM week. These activities helped students to extend their learning beyond the classroom and teachers are commended for giving of their time to support students in this regard.

3. Planning and preparation

- The overall quality of planning and preparation for Science and Biology was good with some very good practices in evidence. The science team were hardworking, collaborative and collegial. Meetings were held regularly and resources were shared through an online-sharing platform. A range of differentiated worksheets and other resources were shared on the subject department platform in order to support and enhance student learning. Teachers regularly added to this folder, as resources were devised and sourced.
- A comprehensive subject plan was in place for senior cycle Biology and identified learning outcomes, methodologies, resources to be used. The plan was modified periodically as teachers amended their practice in lessons and as new resources were developed. It was good practice that the plan contained hyperlinks to resources and this good practice could be extended to methodologies and assessments.
- The junior cycle plan showed very good practice in the development of the units of learning for each year group. It was commendable that the learning outcomes had been broken down into appropriate learning intentions and linked to junior cycle key learning, action verbs, key skills and modes of assessment. This good practice was a work in progress and links to suitable methodologies and resources could be incorporated as a next step.
- The science department action plan was linked to the school self-evaluation targets. A strengths analysis was carried out and targets were set which included the scheduling of science CBA assessments. The science team discussed and analysed student achievement using outcomes from class assessments, state examinations, the Chief Inspector's Report (2022) and a results tracker to set targets for learners.

The draft findings and recommendations arising out of this evaluation were discussed with the principal, deputy principals 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 quality of the school's provision of each area.

Level	Description	Example of descriptive terms
Very Good	<i>Very good</i> 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 <i>outstanding</i> 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	<i>Good</i> 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	<i>Satisfactory</i> 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	<i>Fair</i> 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	<i>Weak</i> 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;