

# Leaving Certificate 'Computer Science' at Coola PPS

## Why Computer Science?

The accelerated expansion of computing technologies and artificial intelligence into all our lives means students need to understand the principles of computer science now, more than at any other time. Students studying this subject will gain both thinking and practical skills that are valuable well beyond the computer science classroom and into any future career.



## What is Computer Science?

The study of algorithms and programming, and the impact of computers on society. It has its roots in design, engineering, maths, psychology and human creativity. Computer Science seeks creative ways to solve problems and evaluate solutions. It is about finding automated solutions to almost any problem you can imagine.



LEAVING CERTIFICATE  
COMPUTER SCIENCE

## Who is it for?

Computer Science is for all students. It is structured to enable all students, of all abilities, to embrace this subject and succeed in every aspect of the course. Every career choice will increasingly require both digital and computer science literacy

## Why Coola for Computer science?

We are the first and only school in Sligo to be delivering Computer Science as a Leaving Certificate subject. We are one of only 70 schools in Ireland delivering this subject at leaving certificate level.



## What will I learn about ?

Through strands 1 and 2 of the specification pupils will learn a broad range skills from developing computational thinking skills like algorithms, abstraction and critical thinking to learning how to program and structure code. Pupils will learn how to program in Python, HTML and CSS, JavaScript. Finally pupils will learn about the ethical and social impact of computing technologies, Artificial Intelligence, Big Data, and more, on humans and society

Strand 1: Practices and principles  
Computers and society  
Computational thinking  
Design and development

Strand 2: Core concepts  
Abstraction  
Algorithms  
Computer systems  
Data  
Evaluation/Testing

Shown to the left is a visual representation of the LCCS Specification



Strand 3: Computer science in practice  
Applied learning task 1 - Interactive information systems  
Applied learning task 2 - Analytics  
Applied learning task 3 - Modelling and simulation  
Applied learning task 4 - Embedded systems

Figure 4: Structure of Leaving Certificate Computer Science

## Learning Experiences

The role of programming in computer science is like that of practical work in the other subjects—it provides motivation, and a context within which ideas are brought to life. Students learn programming by solving problems through computational thinking processes and through practical applications such as applied learning tasks.

### Interactive Information Systems

ALT  
1

Students will develop an interactive website that can display information from a database to meet a set of user needs.

### Analytics

ALT  
2

Students will identify a topic from other subjects or disciplines, and analyse information relevant to that topic to inform and influence decisions around that topic.

### Modelling and Simulation

ALT  
3

Students will engage with a problem that is difficult to solve analytically, but that is amenable to a solution using simulation or modelling.

### Embedded Systems

ALT  
4

Students will implement a microprocessor system that uses sensors and controls digital inputs and outputs.

## Project and Written Examination

On completion of the syllabus and coursework. The pupils will be examined in 2 areas. The brief for the project is set and marked by the State Examinations Commission (SEC) and is delivered to the school in January of 6<sup>th</sup> Year. . The project accounts for 30% of the final SEC grade.. The final exam accounting for the other 70%.

## Project and Written Examination

Below is an example of some of the projects they will complete over their 2 years.



Build an interactive website that will display information for a user from a database

Build a microprocessor system that will use sensors to interact with the outside world

Use data and analyze to model and simulate solutions to problems that we face

**DATA ANALYSIS**

## Student Achievement

Here at Coola PPS our students excel in the Practical Subjects. Students choosing Practical Subjects in this school have consistently performed higher than the national average. With this new subject we intend to continue with this trend and continue with this high achievement.