KEY STAGE 3 COMPUTER SCIENCE 2025-26

<mark>Intent</mark>

Students must understand and apply the fundamental concepts and principles of Computer Science. They should develop the capacity to think logically, problem solve, and make appropriate decisions in a resilient way. They will analyse problems in computational terms through practical problem solving experience. Students will be able to think creatively, innovatively, analytically, logically and critically. Students must understand the components that make up digital systems and how they communicate with one another, and also the impacts of digital technology to the individual and wider society.

<mark>Catholic Ethos</mark>

Across our curriculum we emphasise how technology can develop key catholic values such as the common good, justice and equity, quality and excellence, professionalism, collaboration, and the dignity of work and workers. The consideration of the moral consequences and ethical issues that conflict with these values is built into our teaching.

<mark>Year</mark> Group	AUTUMN TERM	SPRING TERM	SUMMER TERM
7	ImplementationComputer SystemsUsing Google classroom, Drive, GmailCollaborating Online and Presenting to an AudienceKey digital literacy skillsComputational thinking Bebras challenge Prep - Start Prepping Week beginning 16 October 	Data modellingRecognise and use cell references.Use the fill handle.Create simple working formulae.Understand models and simulations.Add formula to a spreadsheetUnderstand the difference between absolute and relativecell referencing.ProgrammingSequences using Python TurtleBasic ShapesAdvanced shapesData representationUnderstand what a binary number isConverting Denary to Binary NumbersConverting Binary to Denary NumbersIntro	HTML Website design Use HTML to create a website Pupils will learn the basics of HTML and CSS, and how to create a responsive design which adapts to any size of screen for viewing on, say, a mobile phone or a PC. They will learn how to create text styles and add content, including text and graphics, in a specified position on a page, as well as navigation links to other pages on their website and to external website



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Impact	Google Form multiple choice tests,	Google Form multiple choice tests,
Baseline tests Google Form multiple choice tests, Inspiring digital enterprise awards	Inspiring digital enterprise awards (iDEA) certificates	Inspiring digital enterprise awards (iDEA) certificates Final assessment
(iDEA) certificates BEBRAS test		

Year	AUTUMN TERM	SPRING TERM	SUMMER TERM
<mark>Group</mark> 8			

Implementation	Algorithms	Data representation
		8 Bit conversions - Binary to Denary and
Computer Systems/Input/Output/Storage	Use FLOWOL to understand the use of Algorithms	Denary to Binary Extension: binary addition
	in everyday life situations. Being able to use step	and binary subtractions
Physical computers to open up -	by step instructions to solve a problem.	Lossy/Lossless/Images/Colour Bit
Input/Output/Storage DevicesOpen a few old		Depth/Metadata
computers (Identify parts/find definitions and	Data modelling	
create short presentation)	Representing Data - Graphs and Charts.	App creation
	Creating a Dashboard and manipulation	
	of dashboard data. Pivot tables &	Using APPshed to create functioning
Networks/topologies (Unplugged activity -	Slicers.	applications for phones and other devices
using string)Building a network	Creating a Dashboard and manipulation of	Pupils learn how to build their own apps using
Bebras challenge/ Computational thinking -	dashboard data. Pivot tables & Slicers.	App Shed. It will give them all the tools and
Practice and prepare for Bebras challenges	advanced functions if else vlookup absolute	resources to build a working web app which
	reference	can



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Computational thinking	Programming Python	be used on any HTML5 compatible device. In the unit they will evaluate existing apps.	
Bebras challenge Prep - Start Prepping Week	Moving into Python (Using Thonny) - Outputs	mock up their own designs and build, test	
beginning 16 October	(print command) strings, concatenation)	and evaluate their own apps. By the end of this unit they will have an understanding of	
Students undertaker challenge	Variables + outputs +	a good user interface, know the difference	
	Mathematical Operators	between web apps and native apps, and be	
Understand and use the 4 elements of		able to find and create resources such as	
Computational Thinking in order to solve		backgrounds T	
problems. I.e.: Pattern Recognition,			
Decomposition, Abstraction and Algorithms			

	Impact Baseline tests Google Form multiple choice tests, Inspiring digital enterprise awards (iDEA) certificates BEBRAS test	Google Form multiple choice tests, Inspiring digital enterprise awards (iDEA) certificates	Google Form multiple choice tests, Inspiring digital enterprise awards (iDEA) certificates Final assessment
Year Group 9	AUTUMN TERM Implementation Use of AI - Ethical use, https://curriculum.code.org/hoc/plugged /9/ Use of AI - Ethical use, etc https://curriculum.code.org/hoc/plugged /9/ Cyber Security	SPRING TERM Programming Intro and Print Statements, Syntax Errors Raw Input and Variables Mathematical Operators	SUMMER TERM Game development with game maker Using project development to create games for the audience



	Network Threats and Vulnerabilities/Law - computer Misuse Act/Encryption/ Decryption/Cyberchef	IF Statements Count (random, randint, etc) Loops and Maths Quiz Extension	In this unit pupils will be introduced to the GameMaker Game Editor/programming environment and begin by reverse-engineering an existing game.
	Computational thinking Bebras challenge Prep - Start Prepping Week beginning 16 October Students undertake challenge Understand and use the 4 elements of Computational Thinking in order to solve problems. i.e. Pattern Recognition, Decomposition, Abstraction and Algorithms Define "algorithm."		They will then progress to planning and developing their own games, learning to incorporate variables, events and actions, and making use of object-orientated programming techniques. Finally they will learn to test and debug their programs. Assessment will be by means of an Assessment Portfolio.
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