



The Ridgeway School & Sixth Form College

...Inspiring Learners For Their Future

*'Our shared vision is that our students, colleagues and families will be part of a **FAIR** community.'*

*We will support our school **Family** to **Achieve** their potential, and **Inspire** students to **Reach** the very best destinations.'*



Computer Science Curriculum Overview

RESPECT | HONESTY | ENDEAVOUR | CREATIVITY | COMMUNITY

Year 7-9 Curriculum Overview

Year 7	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
	E-Safety and The Internet <ul style="list-style-type: none"> • File Management and social media • Keeping your Data Safe 	Zoo Spreadsheet <ul style="list-style-type: none"> • Basic and Advanced Formulas • Spreadsheet Charts 	Kodu and Scratch <ul style="list-style-type: none"> • Initial Programming Concepts • Using Variables 	Cryptography and Problem Solving <ul style="list-style-type: none"> • Cryptography and Problem Solving 	Inside a computer <ul style="list-style-type: none"> • Software and Hardware 	Microbits <ul style="list-style-type: none"> • Microbits Hardware • Microbit Makecode Programming
Year 8	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
	Intro to Python <ul style="list-style-type: none"> • Python Programming 	Spreadsheet Modelling <ul style="list-style-type: none"> • Advanced Formulae • Modelling in Spreadsheets 	Computer Crime and Cybersecurity <ul style="list-style-type: none"> • Computer Crime • Computer Legislations 	Graphics and Sound <ul style="list-style-type: none"> • Data Representation • Boolean Logic and Logic Gates • Sounds and Images 	Python Turtle <ul style="list-style-type: none"> • Python Turtle Basics • Loops and Functions with Turtle 	AI and Machine Learning <ul style="list-style-type: none"> • Artificial Intelligence
Year 9	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
	Computational Thinking <ul style="list-style-type: none"> • Logical Thinking • Abstraction and Decomposition 	Networks <ul style="list-style-type: none"> • The Internet and Connectivity • Client-Server and Encryption 	Control and Modelling <ul style="list-style-type: none"> • Using Flowcharts to solve a problem 	Python Next Steps <ul style="list-style-type: none"> • Advanced Programming Concepts • Loops and Lists • Functions returning values 	Computer Knowledge <ul style="list-style-type: none"> • Computer Architecture • Memory and Storage 	Wider Impact <ul style="list-style-type: none"> • Ethical, Cultural and Moral Issues in IT

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KS4 Curriculum Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 10	<p>Paper 2 - Algorithms</p> <ul style="list-style-type: none"> Algorithms and Logical Thinking Abstraction and Decomposition Design with Flowcharts and Pseudo Code Errors and Trace Tables 	<p>Paper 2 - Searching and Sorting</p> <ul style="list-style-type: none"> Errors and Trace Tables Searching and Sorting Algorithms Programming Techniques and Project 	<p>Paper 2 - Programming Techniques</p> <ul style="list-style-type: none"> Programming Techniques and Project Selection, Sequential and Iteration Variables, Loops and Functions Lists and Arrays File Handling 	<p>Paper 2 - Producing Robust Programs</p> <ul style="list-style-type: none"> Defensive Design, Authentication and Validation Checking and Maintainability <p>Testing, Logic and Syntax Errors</p>	<p>Paper 2 - Translators and Facilities of Language</p> <ul style="list-style-type: none"> Boolean Logic and Logic Gates High Level and Low Languages Integrated Development Environment 	<p>Paper 1 - System Architecture</p> <ul style="list-style-type: none"> The Purpose of the CPU and its Components CPU Performance and Fetch, Decode and Execute Embedded Systems
Year 11	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6

	<p>Paper 1 - System Architecture</p> <ul style="list-style-type: none"> • The Purpose of the CPU and its Components • CPU Performance and Fetch, Decode and Execute • Embedded Systems • Primary Memory and Secondary Storage 	<p>Paper 1 – Memory and System Software</p> <ul style="list-style-type: none"> • Primary Memory and Secondary Storage • Data Storage: Numbers, Images and Sound • File Handling 	<p>Paper 1 - Computer Networks</p> <ul style="list-style-type: none"> • Network Types and Performance Factors • Network Hardware and Topologies • Protocols and the Concept of Layers 	<p>Paper 1 - Network Security and Ethical Concepts</p> <ul style="list-style-type: none"> • Network Security • Purpose of System and Utility Software • Ethical, Cultural, Environmental Concepts 	<p>Revision</p> <ul style="list-style-type: none"> • Revision Based Work 	<p>Revision</p> <ul style="list-style-type: none"> • Revision Based Work
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KS5 Curriculum Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 12	<p>Components of a Computer</p> <ul style="list-style-type: none"> • Processor Components and Performance • Input, Output and Storage Devices • Thinking Abstractly, Ahead and Procedurally 	<p>Systems Software</p> <ul style="list-style-type: none"> • Operating System Functions and Types • Programming Language Translators • Thinking Logically and Pattern Recognition, Problem Solving 	<p>Software Development</p> <ul style="list-style-type: none"> • System Analysis Methods • Programming Paradigms • Programming Techniques and Object Oriented 	<p>Exchanging Data</p> <ul style="list-style-type: none"> • Compression and Encryption • Database Concepts and Normalisation • Programming Techniques and Object Oriented 	<p>Networks</p> <ul style="list-style-type: none"> • Internet Communications • Network Security and Threats • Programming Techniques and Object Oriented • Programming Project 	<p>Data Types</p> <ul style="list-style-type: none"> • Data Types, Binary and Hexadecimal • Floating Point and Bitwise Manipulation • Programming Techniques and Object Oriented • Programming Project

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 13	<p>Algorithms and Data Structures</p> <ul style="list-style-type: none"> ● Hash Tables, Graphs and Trees ● Programming Project 	<p>Algorithms and Data Structures</p> <ul style="list-style-type: none"> ● Data Structures ● Hash Tables, Graphs and Trees, Linked Lists, Queues ● Programming Project 	<p>Boolean Algebra</p> <ul style="list-style-type: none"> ● Boolean Algebra and Logic Gates ● Programming Project 	<p>Legal and Cultural Issues</p> <ul style="list-style-type: none"> ● Computing Related Legislations ● Ethical, Moral and Cultural Issues ● Searching and Sorting Algorithms 	<ul style="list-style-type: none"> ● Revision Based Work 	<ul style="list-style-type: none"> ● Revision Based Work