

Subject Overview Computing – Year 8

The Year 8 Computing curriculum at Rastrick Polaris is designed to support all pupils through sequenced lessons and scaffolded activities, ensuring every student can succeed. Students will delve into digital graphics using Adobe Photoshop to manipulate images, advance their programming skills with Scratch by using subroutines and lists, and learn Python programming by applying constructs of sequence, selection, and iteration. The curriculum also covers data representation, helping students understand how instructions are stored and executed within a computer system and how various data types are represented digitally in binary. Finally, students will explore cybersecurity, identifying threats and learning prevention methods.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge & Skills	<p>Unit 1 Digital Graphics - Image Editing with Photoshop (7 Lessons)</p> <p>Using Adobe Photoshop 2022 to digitally manipulate images and show what an image looks like before and after an effect is applied.</p>	<p>Unit 2 Advanced Scratch: Programming essentials Part II (7 Lessons)</p> <p>Using subroutines to decompose a problem that incorporates lists in Scratch.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;">Assessment 1</p> <ul style="list-style-type: none"> • Photoshop • Advanced Scratch </div>	<p>Unit 3 Introduction to Python programming (6 Lessons)</p> <p>Applying the programming constructs of sequence, selection, and iteration in Python.</p>	<p>Unit 3 Cont Introduction to Python programming (6 Lessons)</p> <p>Applying the programming constructs of sequence, selection, and iteration in Python.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;">Assessment 2</p> <ul style="list-style-type: none"> • Photoshop • Advanced Scratch • Python Programming </div>	<p>Unit 4 Data Representation (7 Lessons)</p> <p>Understand how instructions are stored and executed within a computer system. Understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits.</p>	<p>Unit 5 Cyber security: Threats and Preventions (6 Lessons)</p> <p>Identifying security threats to computer systems and how to put prevention methods in place.</p>
Beyond The Curriculum	<p>Places to visit National Museum of Computing (Bletchley Park)</p> <p>Websites to explore BBC Bitesize Computing (KS3)</p> <p>Wider reading / periodicals "Code: The Hidden Language of Computer Hardware and Software" by Charles Petzold</p> <p>Enrichment clubs / competitions / trips Coding Club – IT2</p>	<p>Places to visit Science and Industry Museum (Manchester)</p> <p>Websites to explore Code.org</p> <p>Wider reading / periodicals "Lauren Ipsum: A Story About (Almost) Everything" by Carlos Bueno:</p> <p>Enrichment clubs / competitions / trips Coding Club – IT2</p>	<p>Places to visit Life Science Centre (Newcastle upon Tyne)</p> <p>Websites to explore Scratch (MIT Media Lab):</p> <p>Wider reading / periodicals "Hello World: You Can Learn to Code" by Hannah Fry and Thomas Ford</p> <p>Enrichment clubs / competitions / trips Coding Club – IT2</p>	<p>Places to visit The Centre for Computing History (Cambridge)</p> <p>Websites to explore Khan Academy - Computer Science</p> <p>Wider reading / periodicals "Algorithms to Live By: The Computer Science of Human Decisions" by Brian Christian and Tom Griffiths:</p> <p>Enrichment clubs / competitions / trips Coding Club – IT2</p>	<p>Places to visit Local Universities with Computer Science Departments</p> <p>Websites to explore Computer Science Unplugged:</p> <p>Wider reading / periodicals "Computational Thinking" by Jeannette M. Wing:</p> <p>Enrichment clubs / competitions / trips Coding Club – IT2</p>	<p>Places to visit Local IT Repair Shops/Computer Manufacturers:</p> <p>Websites to explore CS First (Google)</p> <p>Wider reading / periodicals Articles on the history of computing</p> <p>Enrichment clubs / competitions / trips Coding Club – IT2</p>