Subject Overview Computing – Year 9

The Year 9 Computing curriculum at Rastrick Polaris, part of a five-year learning journey , offers students advanced digital graphics editing using Adobe Photoshop for image manipulation. They will then explore computer networks, learning about hardware and communication components. Building on previous years, students will advance their Python programming skills to include arrays, sub-programs, and extended programs. The curriculum also introduces game development, teaching students to design and code 3D games using tools like Gamemaker/Construct. Finally, students will learn sound editing with Audacity, applying effects and creating unique audio clips.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge & Skills	**Unit 1 Advanced Digital Graphics - Image Editing with Photoshop (7 Lessons)** Using Adobe Photoshop 2022 to digitally manipulate images and show what an image looks like before and after an effect is applied.	**Unit 2 Networks: from semaphores to the internet (7 Lessons)** Recognising networking hardware and explaining how networking components are used for communication. **Assessment 1** • Photoshop • Networks	**Unit 3 Advanced Python programming (6 Lessons)** Building on the programming constructs of sequence, selection, and iteration in Python to include arrays, sub programs and extended programs.	**Unit 3 Cont Advanced Python programming (6 Lessons)** Building on the programming constructs of sequence, selection, and iteration in Python to include arrays, sub programs and extended programs.	**Unit 4 Game Development (X Lessons)** Understand how to design and code a 3d game using Gamemaker/Contruct **Assessment 2** • Photoshop • Networks • Python Programming • Games Development	**Unit 5 Sound Editing with Audacity (6Lessons)** Using Audacity to apply effects to different examples of audio and then placing tracks of audio together to create unique songs and audio clips.
Beyond The Curriculum	**Places to visit** National Museum of Computing (Bletchley Park) **Websites to explore** BBC Bitesize Computing (KS3) **Wider reading / periodicals** "Code: The Hidden Language of Computer Hardware and Software" by Charles Petzold **Enrichment clubs / competitions / trips** Coding Club – IT2	**Places to visit** Science and Industry Museum (Manchester) **Websites to explore** Code.org **Wider reading / periodicals** "Lauren Ipsum: A Story About (Almost) Everything" by Carlos Bueno: **Enrichment clubs / competitions / trips** Coding Club – IT2	**Places to visit** Life Science Centre (Newcastle upon Tyne) **Websites to explore** Scratch (MIT Media Lab): **Wider reading / periodicals** "Hello World: You Can Learn to Code" by Hannah Fry and Thomas Ford **Enrichment clubs / competitions / trips** Coding Club – IT2	**Places to visit** The Centre for Computing History (Cambridge) **Websites to explore** Khan Academy - Computer Science **Wider reading / periodicals** "Algorithms to Live By: The Computer Science of Human Decisions" by Brian Christian and Tom Griffiths: **Enrichment clubs / competitions / trips** Coding Club – IT2	**Places to visit** Local Universities with Computer Science Departments **Websites to explore** Computer Science Unplugged: **Wider reading / periodicals** "Computational Thinking" by Jeannette M. Wing: **Enrichment clubs / competitions / trips** Coding Club – IT2	**Places to visit** Local IT Repair Shops/Computer Manufacturers: **Websites to explore** CS First (Google) **Wider reading / periodicals** Articles on the history of computing **Enrichment clubs / competitions / trips** Coding Club – IT2