Year 9 Computing and IT Curriculum Overview

#	Topic	Learning Aims
01	**Introduction to Year 9** Course overview	1. Know what you will be studying in Year 9 Computing 2. Use Teams and OneDrive to find and organise your work 3. Complete the retrieval grid and baseline test
02	**Python PowerUp** Advanced Python programming skills	1. Consolidate inputs, outputs, selection and loops 2. Use strings, lists and functions to build larger programs 3. Read data from files to control turtle drawings
03	**AI & Machine Learning** Defining AI, real-world applications and hands-on training	1. Define artificial intelligence and machine learning 2. Find real examples of AI and ML in everyday life 3. Train a machine to recognise images
04	**Bebras Computational Thinking Challenge** Annual national computational thinking competition	1. Use logical thinking to solve Bebras challenge problems 2. Work independently under timed conditions 3. Show computational thinking skills such as breaking problems into smaller steps
05	**HTML & CSS** Web page structure, styling and a Mission to Mars project	1. Write HTML to build a structured web page 2. Use CSS to style your page — colours, fonts, borders and layout 3. Use tags and class selectors to build a multi-section page 4. Create a Mission to Mars web page using all your HTML and CSS skills
06	**Networks** Network types · Hardware · Internet & data transmission · Network security	1. Describe the difference between a LAN and a WAN 2. Explain what a NIC, switch and router do 3. Identify factors that affect network speed and performance 4. Describe the structure of the internet — ISP, router, DNS 5. Explain packet switching and the role of protocols like HTTP and HTTPS 6. Name common cyber threats: malware, phishing, ransomware 7. Describe technical and non-technical ways to protect a network
07	**Cybersecurity** Cyber attacks, protection methods and the WannaCry case study	1. Identify types of cyber attack including malware and social engineering 2. Know technical and non-technical ways to protect against attacks 3. Investigate the WannaCry / NHS attack and its impact 4. Practise everyday cybersecurity habits to stay safe online
08	**Digital Representation** Pixels, resolution, colour depth, RGB and file size	1. Explain how images are stored as binary numbers 2. Define pixel, resolution and colour depth 3. Describe the RGB colour model and how it creates colours on screen 4. Calculate the file size of an image from its resolution and colour depth 5. Know how binary represents characters using ASCII
09	**Image Editing — Affinity Photo** Raster vs vector · Adjustments · Layers · Masks · Compositing	1. Explain the difference between raster and vector graphics 2. Navigate the Affinity Photo workspace confidently 3. Adjust brightness, contrast and saturation on a photo 4. Use selection and crop tools to isolate parts of an image 5. Use layers, opacity and blend modes to combine images 6. Use layer masks to hide parts of a layer without deleting them 7. Create a composite image from two photos
10	**Audiobook — Audacity** Recording, editing and exporting audio	1. Record a clear, expressive voiceover using Audacity 2. Edit your audio — trim, amplify and add fades 3. Layer music and sound effects on separate tracks 4. Export your finished audiobook as an MP3
11	**Video Editing — Canva** Timeline editing, transitions, text overlays and export	1. Navigate the Canva video editor — timeline, toolbar and media panel 2. Trim clips, add transitions and apply text overlays 3. Export your video in the right format
12	**Web Design — RocketCake** Planning, building, testing and improving a multi-page website	1. Explain what makes a website usable and review real sites 2. Plan your website with a mind map, mood board and wireframes 3. Build a multi-page website with working navigation in RocketCake 4. Understand copyright rules for images and content you use online 5. Test your website with real users and improve it based on feedback
13	**Event Planning** Presentations · Graphic design · Spreadsheets · Peer review	1. Create a PowerPoint with a theme, animations and transitions 2. Design a logo, poster and ticket for your event 3. Use spreadsheet formulas to calculate costs and profit 4. Evaluate your work using peer feedback and a checklist