

Computing Year 8

Computing effects our daily lives, stimulates curiosity and broadens student's horizons, both in the understanding of the wider surrounding platforms and providing access to a range of job opportunities. The computing curriculum provides students with the opportunity to develop a love and appreciation of computing and realise their full creative potential through the breadth and depth of knowledge and skills.

Curriculum overview:

	Autumn term:	Spring:	Summer:
Half term 1	App Inventor Can you explain the App Inventor interface? Can you set up a basic talking app? Create an advanced talking app with additional features. Create a doodling App and a Game App using a ball feature Create an advanced gaming app. Create their own App using learnt skills and techniques Review and reflect on their own learning?	Cybersecurity Explain the difference between data and information. Critique online services in relation to data privacy. Identify what happens to data that is entered online. Understand the need for the Data Protection Act. Recognise how human errors pose security risks to data. Implement strategies to minimise the risk of data being compromised through human error. Define hacking in the context of cybersecurity. Explain how a DDoS attack can impact the users of online services. Identify strategies to reduce the chance of a brute force attack being successful? Understand the need for the Computer Misuse Act (1990). List the common malware threats. Examine how different types of malware cause problems for computer systems. Question how malicious bots can have an impact on societal issues. Compare security threats against their probability and their potential impact to organisations. Explain how networks can be protected from common security threats. Identify the most effective methods to prevent cyber-attacks.	Developing the Web Describe what HTML is. Use HTML to structure static web pages. Modify HTML tags using inline styling to improve the appearance of web pages. Display images within a web page. Apply HTML tags to construct a web page structure. Describe what Cascading Style Sheets (CSS) is. Use CSS to style static web pages. Assess the benefits of using CSS to style pages instead of in-line formatting. Describe what a search engine is. Explain how search engines 'crawl' through the World Wide Web and how they select and rank results. Analyse how search engines select and rank results when searches are made.

	Important vocabulary:		Important vocabulary:		Important vocabulary:	
	Palette Viewer, Components Properties, Blocks Emulator QR Code. Accelerometer TextBox	Canvas FillParent SpeedSetting ImageSprite Variables Procedures	Data, information, cybersecurity, cybercriminals, profiling, user behaviour, privacy policies, data protection, data subject, data portability, malware Social engineering, phishing, blagging, shouldering, name generator attack, scam Cyberthreats, ethical hacking, penetration testing, brute force attacks,	Anti-malware, firewall, end-user authentication, folder permissions/privileges, botnet, trojans, biometrics, two-factor authentication (2FA), CAPTCHA Blagging, , DDoS, brute force, hacking, spyware, adware, firewall, two-factor authentication (2FA), backups, CAPTCHA, Internet Service Provider (ISP), auto- updates script kiddies, DoS (denial of service), DDoS (distributed denial of service), Computer Misuse Act (1990) malware, viruses, trojans, worms, adware, spyware, bots, botnet	HTML, tags, formatting Image, tag, attribute, directory, render CSS, style, formatting,	
Half term 2	Animation Identify how to add, delete, and move objects, scale and rotate objects. Understand how to use a material to add colour to objects. Effectively add, move, and delete keyframes to make basic animations Learn how to play, pause, and move through the animation using the timeline. Join multiple objects together using parenting. Competently use edit mode and extrude. Understand how to use loop cut and face editing. Apply different colour to different parts of the same model. Effectively use the proportional editing and knife tool, including subdivision. Understand how to set up the camera, add and edit lighting. Compare different render modes.		Python Describe what algorithms and programs are and how they differ. Recall that a program written in a programming language needs to be translated in order to be executed by a machine Write simple Python programs that display messages, assign values to variables. Locate and correct common syntax errors. Describe the semantics of assignment statements. Use simple arithmetic expressions in assignment statements to calculate values. Receive input from the keyboard and convert it to a numerical value. Use binary selection (if, else statements) to control the flow of program execution. Use multi-branch selection (if, elif, else statements) to control the flow of the program execution. Use iteration (while loops) to control the flow of program execution. Combine iteration and selection. Use Boolean variables as flags		Developing for the Web Use search technologies effectively. Discuss how the choice of search terms affects the information you find. Create hyperlinks to allow users to navigate between multiple web pages. Implement navigation to complete a functioning website. Complete summative assessment.	

Important vocabulary:		Important vocabulary:		Important vocabulary:	
Object Sphere, cone Scale, add Move, rotate Keyframe, parenting Edit mode, extrude	Proportional editing Loop cut, face Knife tool, lights Camera, vertex Focus, ray tracing	Algorithm, program, programming language, program translation and execution, interpreter, programming environment, input, output, variables, operators, expressions, integer and string type, walk-through	relational (or comparison) operators, logical (or Boolean) conditions, randomness, Selection, randomness, Iteration, selection, counting,	head, body, Search term, keywords, hyperlink, crawler, spider, index, query, ranking	




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Head of Year :

What are our curriculum aims for your child in year 8?

-  Our curriculum aims for all students in year 8 to experience a broad selection of topics, some which will be subject transferable across different subjects.
-  To enable students to realize the creativity within computing and iMedia, understanding the importance of Cyber security, how to use and understand coding.
-  Gain experience in Developing the Web and using software to create new Apps.

How can I help my child be successful in Computing?

-  Review key vocabulary with your child to help them transfer it to their long-term memory.
-  Ask students to explain what they have learnt that week, this also helps build long-term memory.
-  Help them explore computing safely, encouraging good practice regarding cybersecurity.
-  Encourage creativity using various available software.

How will you assess my child's progress?

Continuous monitoring of the students' progress via Google classrooms, with work submitted weekly, marked and returned.

To monitor the progress in students' knowledge and skills they will sit a short assessment for each topic, with time to mark their work and correct mistakes.