

Year 9 Topics

In year 9 we teach the following modules over the course of the year. Each module draws on prior learning from previous years and builds on understanding from the KS2 programme of study. Each module develops and deepens the Core knowledge that will underpin all areas of the curriculum at KS3 and KS4. The range is designed to complete the picture for key stage 3 that gives knowledge of computer science and data and programming skills for future study. There is also an ICT element for transferrable skills in all subjects.

Topic	Rationale	Knowledge acquisition	Key vocabulary	Skills and enrichment
Databases – Designing, creating and using a relational database for a given scenario	Students need to understand what databases are, how they are used in real life.	<ul style="list-style-type: none"> • What are databases? • Examples of real-life databases • Understanding of how and what information is retained about us 	Data, fields, data types, validation, records, field names, input masks. Organised file structures GDPR	<ul style="list-style-type: none"> • independence • problem solving • reading • literacy • IT skills – Microsoft Access • research • numeracy • working collaboratively • self-management • self-monitoring
	They also need to be able to plan and set up a new database using database tools and techniques including:	<ul style="list-style-type: none"> • Knowledge of what fields and records are • Using a data collection form • Planning a database table 	Fields, field names, data types, field length, validation, records, primary key.	
	creating tables, adding records using forms, searching the database using queries and presenting	Setting up and using a new database: <ul style="list-style-type: none"> • Adding fields • Specifying field data types and field lengths • Toggling between design view and datasheet view. • Adding records • Sorting and filtering records 	Microsoft access, database, data type, validation, formatting, field, field name, record, input mask, drop down list, combo box, records, design view, datasheet view, sorting, filtering, relationships, referential integrity, toggling.	

	information using reports.	<p>Relational databases – setting up several tables and linking them together using primary and foreign keys fields.</p> <ul style="list-style-type: none"> • Designing a suitable data input form • Creating a form in design view or using a wizard • Customising and formatting forms • Adding records using a form <p>Knowing what sort of information to extract from a database</p> <ul style="list-style-type: none"> • Setting up a simple query in design view • Running a query • Designing a report using design view or wizard • Running a report on a query • Changing a table or query and updating a report 	<p>Referential integrity, data collection, design view, form view, data entry, wizard, formatting</p> <p>AND, OR, relational (<>), complex queries, parameter queries</p> <p>Design view, report view, header, footer, date stamp, layout, print preview, export, rtf file, pdf format, tabular, columnar.</p>	
Topic	Rationale	Knowledge acquisition	Key vocabulary	Skills and enrichment
Travel and Tourism	<p>Students need to understand the different needs of customers to enable them to provide travel and tourism products</p> <p>They will also need to research products and services to plan a holiday for a</p>	<p>Customer travel and holiday needs:</p> <ul style="list-style-type: none"> • dates/time of year • travel requirements • accommodation requirements • available budget • purpose of travel <p>Range of holidays & services e.g.</p> <ul style="list-style-type: none"> • package, all inclusive, tailor-made, special interest, family-friendly cruises, 'glamping', short breaks, multicentre. <p>Range of accommodation, e.g.</p> <ul style="list-style-type: none"> • budget hotels, luxury hotels, holiday parks, youth hostels 	<p>Travel requirements, road, air, rail, cruise, accommodation requirements, budget, discounts, purpose of travel, accessibility, customer preferences, package holidays, all inclusive, tailor-made, special interest, family-friendly cruises, glamping, short breaks, multicentre, budget hotels, luxury hotels, holiday parks, youth hostels, activities, excursions, sporting activities, sources of information, tourist information centres,</p>	<ul style="list-style-type: none"> • independence • problem solving • reading • effective writing • oracy • literacy • IT • Research • Numeracy • communication • working collaboratively • creativity

	specific customer.	<ul style="list-style-type: none"> providing a range of activities, e.g. excursions, sporting activities, dance classes, special events taylor-made facilities and amenities, e.g. play areas, crèche, gym, beauty salon, barbecue area 	destination features, holiday type, travel arrangements, excursions, health risks and precautions, safety and security concerns, information and advice	<ul style="list-style-type: none"> self-management self-monitoring
	Researching suitable destinations e.g. <ul style="list-style-type: none"> sources of information, e.g. websites, guidebooks, tourist leaflets, atlases, holiday brochures, tourist information centres. 			
	Forming a plan: <ul style="list-style-type: none"> destination, including features that would appeal to customer holiday type accommodation travel arrangements and times cost breakdown and total costs times and dates of travel activities, excursions health risks and precautions safety and security concerns 			
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Creative Media Production	Students need to understand the different genres, audiences and purposes of media products.	Purposes of different magazine genres: <ul style="list-style-type: none"> entertain inform promote advertise associated products appeal to target audience gain market share 	Genre, entertain, inform, promote, advertise, target audience, market share	<ul style="list-style-type: none"> ICT Desktop publishing Digital editing independence problem solving reading

	They need to be able to use digital tool and techniques to produce a front cover for a magazine for a specific genre, audience and purpose	<p>The relationship between purpose and target audiences of magazines within a specific genre.</p> <p>Defining the demographics for magazines within a specific genre:</p> <ul style="list-style-type: none"> • Age • Gender • Psychographics • Other demographic considerations 	Demographics, purpose, target audience, genre, psychographics, age, gender	<ul style="list-style-type: none"> • effective writing • oracy • literacy • research • communication • working collaboratively • creativity
		<p>Codes and conventions of magazine covers:</p> <ul style="list-style-type: none"> • masthead (title) • sell-lines/cover lines • strapline, tagline or slogan • price and bar code • cover model or celebrity photo 	Codes, conventions, masthead (title), sell-lines, cover lines, strapline, tagline, slogan, price, bar code, cover model, celebrity photo	
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Enterprise	<p>Students need to understand the different methods of promotion used by enterprises.</p> <p>They need to be able to use IT to explain the methods of promotion and branding used by a specific enterprise.</p>	<p>The promotional mix</p> <ul style="list-style-type: none"> • Message and Medium • Advertising methods • Sales promotions • Personal selling • Public relations • Direct marketing 	<p>Message, medium, moving image, print, ambient, digital, audio, incentives, coupons, competitions, money off, loyalty incentives, 'buy one get one free', discounts, face-to-face, by telephone, via email, through video or web conferencing exhibitions, sponsorship, press releases, media, direct mail (junk mail), mail order catalogues, magazines, telemarketing.</p>	<ul style="list-style-type: none"> • oracy • literacy • IT • research • communication • working collaboratively • creativity
		<p>Branding</p> <ul style="list-style-type: none"> • Brand name, logo, slogan, trademark, brand personality, brand image, unique selling point, USP, brand loyalty 	<p>Brand name, logo, slogan, trademark, brand personality, brand image, unique selling point, USP, brand loyalty.</p>	

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Photo editing	<p>Students need to have an awareness of techniques used in the media and their effect on society.</p> <p>They also need to develop their digital photo editing skills on industry standard software.</p>	<ul style="list-style-type: none"> • What is air brushing? • How is airbrushing used in the media • Possible effect on society & individuals • Use of layers • Background removal • Professional image manipulation techniques to add and remove features on a digital image • Selection and deselection techniques • Adding text to an image • Changing text properties • Text alignment including onto a defined vector • Advanced photo enhancement techniques • Advanced digital image sampling techniques • Independently using photo editing techniques to meet a specific purpose 	<p>Airbrushing, touch-ups, editing pixel, bitmap, manipulation, representation, layers, background, png, jpg, bmp, rubber stamp tool, bitmap/ raster graphic, collage, selection, deselection, magic wand, quick selection, Gaussian blur, properties, alignment, hexadecimal colours, font style, font size, saturation, hue, filters, resolution, quality, compatibility, compression.</p>	<ul style="list-style-type: none"> • oracy • literacy • ICT • digital editing • Photoshop skills • communication • working collaboratively • creativity • analysis • evaluation
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Programming in Python	<p>Students need to be able to use rudimentary programming techniques in Python</p>	<ul style="list-style-type: none"> • Opening and editing, running and debugging programs • Variables – temporary storage of information during the running of a program that can be used during the running of it. EG giving a user a personal greeting • Selection – IF/Else statements to branch to different outcomes during the running of a program. 	<p>IDE, virtual PC, debugging, running, shell window, memory location, string, concatenation, else, else, nested ifs.</p>	<ul style="list-style-type: none"> • oracy • literacy • ICT • logic • programming • problem solving • reading • communication • working collaboratively • analysis

	Students need to understand how to use number and maths functions in Python	<ul style="list-style-type: none"> • Addition and subtraction of numbers. • Making a simple calculator in Python to take in 2 numbers, add them and display the answer • Casting – changing variable datatypes • Comparison operators – use of < and > logical operators • Inputs and outputs – combination of selection techniques to perform different maths functions and display the outcome (Text game program where score changes depending on input from user) 	Integers, floating point, real numbers, input, process, output, string, string variable, logic, greater than and less than, relational, values, random, iteration	
	Students need to be able combine maths functions with the turtle path sequences	<ul style="list-style-type: none"> • Drawing regular mathematical shapes • Use of loops for repeated instructions • Combining maths functions with the turtle path sequences to angles can be calculated from user specifying the number of sides • Complex shapes achieved by using loops within loops • Complex irregular shapes achieved by lifting the pen up and placing it down at locations 	For loop, iteration, sub routines repetition, efficiency, logic sequence	
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Online safety (Teaching online safety guidance)	Students need to learn how to make the best use of the internet and technology in a safe, considered	<p>How and when to seek support with online issues</p> <ul style="list-style-type: none"> • sign posting at school, home, police • personal data, privacy settings, online golden rules <p>How to evaluate what you see online</p>	Data, privacy settings, social media, sharing, online grooming, sexting, copyright law, protection, copyright, patent' cyberbullying, trolling, appropriate behaviour, permanence, consequences, stalking, plagiarise,	<ul style="list-style-type: none"> • oracy • literacy • ICT • Reading • research • communication

	<p>and respectful way, so they are able to reap the benefits of the online world.</p>	<ul style="list-style-type: none"> • age restrictions, impact of confidence (including body confidence), impact of quality of life, physically and mental health (Suicide, self-harm and eating disorders), content and how it can be used and shared <p>How to recognise techniques for persuasion</p> <ul style="list-style-type: none"> • online content which tries to make people believe something false is true and/or mislead, techniques that companies use to persuade people to buy something, ways in which games and social media companies try to keep users online longer, criminal activities such as grooming <p>How to identify online risks</p> <ul style="list-style-type: none"> • discussing the ways in which someone may put themselves at risk online, risks posed by another person's online behaviour, positive and negative risk taking, online reputation and the positive and negative aspects of an online digital footprint. 	<p>profile, virus, infect, malware (worms, trojan horse, spyware), anti-virus software, reliability, authenticity, misinformation, disinformation, online reputation, digital footprint, influencers, advertising, gifted, bloggers.</p>	<ul style="list-style-type: none"> • working collaboratively • analysis • evaluation
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Flash animation	Students need to be able to use a variety of tools and techniques to produce a short animation.	<ul style="list-style-type: none"> • Opening a flash document • awareness of FLA, SWF file formats • Editing and previewing • Creating vector graphics using the tools • Motion tweens – getting objects to smoothly glide across the screen. Objects to rotate or change appearance or form • Shape tweens – converting bitmaps to vectors and getting a shape to morph into another shape • Ken Burns effect – when the camera apparently pans across an image • Drag and drop interactive animation where the user can click and interact with objects 	Vector graphic, fill, stroke, selection, sub-selection, transform, tween, timeline, key frame, layers, path, fade, alpha, code snippets, action script, object oriented programming, behaviours.	<ul style="list-style-type: none"> • independence • problem solving • reading • literacy • IT skills – Flash animation • numeracy • working collaboratively • self-management • self-monitoring
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Advanced spreadsheet skills and techniques	Students need to have an awareness and understanding of advanced spreadsheet skills and techniques.	<ul style="list-style-type: none"> • IF statements, countifs and conditional formatting • Advanced formatting – hiding cells, locking cells • 3D Cell referencing – linking cells and formula on several worksheets • Creating an interactive quiz • Automatic analysis of user responses and feedback given using countif functions and nested IFs • Score lookup up in a table and output message produced on the spreadsheet 	Functions, formula, If-statement, nested IFs, conditional formatting, criteria, rules, macros, feedback, output, interface.	<ul style="list-style-type: none"> • independence • literacy • problem solving • logic • IT skills – Excel • numeracy • working collaboratively • self-management • self-monitoring • research