

KS3 COMPUTING

Purpose

The purpose of this curriculum plan is to provide an overview of the curriculum for KS3 Computing. It makes clear *when* things are studied and perhaps most importantly the key concepts of studying it. It also tells us what's inside each Scheme of Learning in terms of the broad concepts, assessment points and how these might link to other units within and outside KS3 Computing

Guide to terminology

Topic – this should briefly describe the area of the curriculum being focused on.

Key Concepts – ideas and concepts are often transferable within subjects and across subjects. By identifying the key ideas and concepts it should make it easier to see patterns and trends over time. What are the concepts in your subject? Does the curriculum provide opportunities to explore them?

Knowledge & understanding milestones – These are the specific educational gains for studying this topic. List the main skills they will develop, consolidate or learn by studying this topic. When you put all of these together you will have a clearly defined knowledge base that needs to be achieved by the end of each year. Your assessments therefore will test to what extent students have securely grasped this essential knowledge.

Scaffolding for SEND to ensure quality first teaching – as discussed in the Ofsted overview of research document differentiated activities/task have little to no impact on pupils' attainment.

Careers – what careers input will be included in SOL, as described in the Gatsby Benchmarks careers must be included in everyday teaching not just a bolt on.

Vocabulary – What are the most common words, phrases or vocabulary that will be explored in this unit / topic? You cannot list them all of course but provide a selection of the most relevant ones here. How do classroom displays support students with this vocabulary?

Assessment Dates - this covers a range of types of assessment and will depend on the range of methods that your subject uses to assess understanding (eg ongoing assessment, formative feedback). How and when do you check student understanding? When do you use retrieval practice to support better retention of knowledge and understanding? How will you use this information in planning and reviewing SOL?

Year 7

COMPUTING	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Topic	Powerful Presentations My Opie/All about me.	Surfing Safely Graphics and E-safety	Cashflow Kings Spreadsheets	A Great Game! Block Coding	Cool Control Control Systems	Awesome Animation Cyber Security (NEW 2020)
Key concepts	Login, Networks, Office 365 Personal Studio Photos Presentation Software and personalisation	Basic Vector Graphics, Page Layout and E-Safety Introduction Research Techniques	Spreadsheets use, Research , Data Entry and graph production. Modelling and conclusions, report writing	Programming Constructs Decomposition Game Design Code Efficiency	Input, Process, Output Flowcharts Problem Decomposition Iterative testing	Keyframe Animation Bones Tweening Risks – Mitigation Malware Social Engineering
Knowledge & Understanding Milestones	Username and Passwords, email, OneDrive, I mapper, Teams, SharePoint, Layout, Transitions, Images	Nodes Bezier Curves Layers SMART -E-Safety Layout Skills	Cell Formatting Formulas and Functions (Sum, IF, What IF) Borders/ Page Links Graph Setup Report and conclusions.	Backdrop's/Sprites Animation/Scripts Wait/Collisions Variables/Incrementing Iterations Interactions/IFs	Basic System I-P-O Decision-Selections Subroutines Complex Systems.	Basic Keyframe Arm wave Speech Walking! Likelihood Vs Impact
Scaffolding for SEND to ensure quality first teaching.	Additional demonstrations, Ensure good file management and saving of file, Task Summary on SP Learning Ladder for AFL range of progress	Additional demonstrations Task Summary on SP Learning Ladder for AFL range of progress	Additional demonstrations, keypoints on mini whiteboards Task Summary on SP Learning Ladder for AFL range of progress	Online Resources Self-Pace/Videos Saved - Solutions Skills Audit Extension Tasks	Additional demonstrations Online Resources Self-Pace/Videos Task Summary on SP Learning Ladder for AFL range of progress	Additional demonstrations Task Summary on SP Assessment Ladder for AFL range of progress
Careers input	Presentations for employment and job interview.	Vector Graphics for business marketing and engineering.	Spreadsheet for business modelling and accountancy.	Games Design Computer Programmer Project Manager	Robotics engineer and Systems analysts	Cyber Security Expert Animator
Links (prior knowledge, future knowledge)	In subject: Keyboard, Passwords Basic Layout Skills MFL – Talking About Self	In subject: IT Web design Digital Art – Photography ART – Julian Opie	In subject: Basic OS Use Basic numerical operators and graph layout	Maths- Co-ordinates Small Basic Programming	In subject: GUI Use – File Saving Programming Constructs CAM/Automation	In subject: Stop Frame Animation E-Safety
Key Vocabulary	Login, UserName, Password, Network, File Management, Cloud, Transition, Effect, Animation	Node, Layer, Bezier, Import, Export Browser, Accept, Reliable, Bias	Cell, Column, Row, Cell Reference, Active Cell, Worksheet, , Format, Formula, Function, Bar Chart, Pie Chart, Analysis	Variables Sequence Iterations Conditions/Selection Incrementing	Input, Process, Output Terminator Actuator Decomposition Iterative Subroutine Decision/Selection	Animation Key Frame Sequence Silhouette Generated Export
Review & Assessment Dates (including opportunities for retrieval practice)	Mastery Check during lessons. Interim AFL for presentation Final Presentation graded. www-ebi	Mastery Check during lessons. Interim AFL for graphic product Final E-Safety Poster graded. www-ebi	Mastery Check during lessons. Interim AFL for Solution Final Spreadsheet and report graded www-ebi	Mastery Checks Joke/Maze/Shark/ Game Planning – Peer/EBI WWW Final Game - graded	Mastery Check during lessons. Project Analysis-AFL Final Control report graded www-ebi	Mastery Check during lessons. Interim AFL for Project Final animation afl graded www-ebi

Year 8

COMPUTING	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Topic	Computer Systems Bits and Bytes – How computers work	Active IT Video Editing/Animation	Dangerous Database Introduction to Flat Files (Updated 2019)	Screen Saver! Programming: Small Basic 1	Bubble or Bucket (New 2020) Sorting/Searching/ Data Representation	Loud and Local(New 2020) Desk Top Publishing/ Social Media
Key concepts	Basic Computer System Binary – Denary Conversion, Binary Addition, Character Representation Fetch Decode Execute	Storyboarding Media Selection Narrative Transitions -Effects Exporting	Fields, Records, Query, Reports Storing Data – Forms Outputting Data - Reports	Sequence Selection Iteration Turtle – Shapes - Graphics IDE – Small Basic	Sorting Algorithms Searching Algorithms Boolean Logic Concepts Graphic-Bitmap - Vector	Newspaper production Effective groupwork Graphic Design Social Media Campaign Project Management
Knowledge & Understanding Milestones	Input and Output Device Binary numbers and Character Representation Computer Components CPU Fetch Decode Execute Convergence	Technical Demonstration Media Selection/Recording Timeline Editing Feedback and Exporting	Setting up tables Importing Data Designing Queries Running Reports Analysing Results Sharing Data – Report or Presentations	Variables Basic Shape Repeating Shape Iteration Screen Saver	Bucket Sort Bubble Sort Insertion Sort Flowcharts Vector-Bitmap Sounds Waves-Digital Text – Characters	GDPR/Copyright Research/Sources House Style Survey – Forms Presenting Information Audience and purpose
Scaffolding for SEND to ensure quality first teaching.	Progressive Worksheets Mind map – Recall Unplugged activities to reinforce concept Teacher Support	Additional demonstrations Task Summary on SP Assessment Ladder for AFL/ range of progress	Additional demonstrations Task Summary on SP Assessment Ladder for AFL/ range of progress	Additional demonstrations Task Summary on SP Assessment Ladder for AFL range of progress	Step by step work Progressive worksheets Choice of challenge	Teamwork Scaffolded Steps Group Outcome Personal Report
Careers input	Computer Technician	Video Editing TV Production	Operations Manager Database Designer	Computer Programmer	Computer Programmer Game Designer	Local Campaigner Journalist
Links (prior knowledge, future knowledge)	In subject: Basic Binary CPU Architecture	In subject: Basic Story Narrative <u>Drama - Performance</u>	In subject: Basic Data Entry Relational Databases Investigations	In subject: Scratch – Basic Programming Constructs <u>Math -Basic Geometry</u>	Scratch condition and else statements GCSE Algorithms/Boolean Logic	KS3 E-Safety – Graphics IT – Presenting Information
Key Vocabulary	Processor Convergence Technologies Binary	Transitions Effects Chroma Key Narrative	Forms, Queries Reports Flat File	Program Editor Intelligence Indent Comment Sequence Selection Iteration	Ascending Descending Array/Bucket Vector/Hz/Pixel/Ascii	Frames Master Pages Rights Referencing Headers and Footers Audience Layout

Review & Assessment Dates (including opportunities for retrieval practice)	Progress Checks Students Self Assessing Worksheets Final Online Open book Quiz	Mastery Check during lessons. Interim AFL for Technical Demo product Final video Export graded www-ebi	Mastery Check during lessons. Interim AFL for graphic product Final E-Safety Poster graded www-ebi	Mastery Check during lessons. Interim AFL for Project Final report graded.	Worksheet 1/2/3-Self Assessed Online Test Multichoice	Topic Research - Self Survey Design www/ebi Contribution -Peer Final Report - Graded
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Year 9

COMPUTING	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Topic	Loads of Lemonade Programming Small Basic 2.	Mad Micros Basic Robotics	Little Theatre Manage a Theatre Companies IT		Wonderful Web HTML – Coding and Web Design	
Key concepts	Variable Function Modelling Calculations Iteration Subroutines Printing	Circuit Board Sensors Outputs Program Flow wearable Devices	Introduction to Project Management Understand Methods for processing Data Selecting and presenting information for a need Understanding Logical Dependencies		Learn basic HTML Constructs Design – Abstraction and key Concepts Logical Dependencies – Project Management Testing – Feedback	
Knowledge & Understanding Milestones	Problem Decomposition Creating Subroutines of increasing complexity Combining subroutines to create a model Alternative Scenarios	Prototyping Coding Testing Evaluation	Wire Frame Design Sketches Gantt Chart Production Data Types – Data Dictionaries - Validation Intermediate Spreadsheet Skills Intermediate Database Skills Intermediate graphics presentation skills		HTML Tags Paragraph, Body, Br, Heading, Img SRC, a href, Pencil Project – Wireframes Project Libre – Gantt Chart Testing Table and Survey	
Scaffolding for SEND to ensure quality first teaching.	Additional demonstrations Task Summary on SP Assessment Ladder for AFL/range of progress	Demonstrated Steps Key Diagrams Peers Support Differentiated Outcomes Online videos	Additional demonstrations Exemplar Work/ Task Summary on SP Assessment Ladder for AFL Range of progress		Additional demonstrations Task Summary on SP Assessment Ladder for AFL/range of progress	
Careers input	Programming Social Scientist Business Manager	Robotic/Control Engineer Fitness Manager	Business administrators Company management Graphic Designer Project Manager		Web Developer Project Manager Animator	
Links (prior knowledge, future knowledge)	In subject: Basic Coding Constructs Maths- calculations for the modelling Foundation for Python	Flowol Control in y7 Python in 7 and 8 GCSE CS - Programming	Yr7 Presentations, Spreadsheets, Yr 8 Database, Local and Loud unit Cam Nat: IT Project Management. Selecting Processing Presenting information for a purpose		In subject: Basic Graphic Skills – Photo Editing and Vector Graphics Research and Topic Knowledge. A-Level CS – HTML, CSS, JavaScript Cam Nat LO7 Select and Present information to meet identified need	
Key Vocabulary	Language Subroutine Sequence Selection Iteration Algorithm Data Types	Debugging Evaluation Sequence Selection Iteration Test	Project Lifecycle Dependencies Wireframe Datatypes Table, Field, Record, Query, Report, Data Validation, Workbook, Worksheet, Formula, Functions,		Tag Audience Navigation Dependencies/Contingencies HTML Audience Purpose	

	De Bugging		VLookup, Cell referencing, Macros, Import, Security, Charts	User Requirements Success Criteria Cascading Style Sheets (CSS)
Review & Assessment Dates (including opportunities for retrieval practice)	Mastery Checklist during lessons. Interim AFL for solutions Final program graded – www-ebi	Mastery Checklist Fitness Friend Heart Rate Monitor Walking for water	Mastery Checklist during lessons Gantt Chart – Peer/Self Assessed Sketch Designs Peer/Self Assessed Final Portfolio WWW EBI	Mastery Checklist during lessons. Interim AFL for solutions Final website/Code graded – www-ebi