ICT & Computer Science Curriculum Plan - Whole Academy

PRIMARY	KEY STAGE 3	KEY STAGE 4	KEY STAGE 5

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PRIMARY

The table below shows which year group curriculum strands are taught in. The second table gives information about what students learn in each of these key strands and demonstrates how these key concepts are developed throughout the academy.

	EYFS	1	2	3	4	5	6	7	8	9	10	11	12	13
Internet Safety	x	x	x	x	x	x	x		x	x	x	x	x	x
Spreadsheets		x	x	x	x	x	x	X	x	x	x	X		
Databases			x	x		x		X	x	x	x	X		
Powerpoint		x	x	x	x	x	x	X	x	x	x	x	x	
Web Development							x						x	X
Project Life Cycle Theory									x	x	x	x	x	X
Computing	x	x	x	x	x	x	x	X	x	x				
Augmented Reality Prototype								x	x	x	x	x		

Units by Year Group – Single Age Classes

Theme Key:							
Coding and Computational thinking	Spreadsheets	Internet and Email	Art and Design	Music	Databases and graphing	Writing and Presenting	Communication and networks

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
YEAR 1	**Unit 1.1 Online Safety & Exploring Purple Mash** **Weeks** – 4 **Programs** – Various				**Unit 1.2 Grouping & Sorting** **Weeks** – 2 **Programs** – 2DIY		**Unit 1.3 Pictograms** **Weeks** – 3 **Programs** – 2Count			**Unit 1.4 Lego Builders** **Weeks** – 3 **Programs** – 2DIY			**Unit 1.5 Maze Explorers** **Weeks** – 3 **Programs** – 2Go			**Unit 1.6 Animated Story Books** **Weeks** – 5 **Programs** – 2Create A Story					**Unit 1.7 Coding** **Weeks** – 6 **Programs** – 2Code						**Unit 1.8 Spreadsheets** **Weeks** – 3 **Programs** – 2Calculate			**Unit 1.9 Technology outside school** **Weeks** – 2 **Programs** – Various	

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
YEAR 2	**Unit 2.1 Coding** **Weeks** – 5 **Programs** – 2Code					**Unit 2.2 Online Safety** **Weeks** – 3 **Programs** – Various			**Unit 2.3 Spreadsheets** **Weeks** – 4 **Programs** – 2Calculate				**Unit 2.4 Questioning** **Weeks** – 5 **Programs** – 2Question, 2Investigate					**Unit 2.5 Effective Searching** **Weeks** – 3 **Programs** – Browser			**Unit 2.6 Creating Pictures** **Weeks** – 5 **Programs** – 2PaintAPicture					**Unit 2.7 Making Music** **Weeks** – 3 **Programs** – 2Sequence			**Unit 2.8 Presenting Ideas** **Weeks** – 4 **Programs** – Various			

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
YEAR 3	**Unit 3.1 Coding** **Number of Weeks** – 6 **Main Programs** – 2Code						**Unit 3.2 Online safety** **Weeks** – 3 **Programs** – Various			**Unit 3.3 Spreadsheets** **Weeks** – 3 **Programs** – 2Calculate			**Unit 3.4 Touch Typing** **Weeks** – 4 **Programs** – 2Type				**Unit 3.5 Email** (including email safety) **Weeks** – 6 **Programs** – 2Email, 2Connect, 2DIY						**Unit 3.6 Branching Databases** **Weeks** – 4 **Programs** – 2Question				**Unit 3.7 Simulations** **Weeks** – 3 **Programs** – 2Simulate, 2Publish			**Unit 3.8 Graphing** **Weeks** – 3 **Programs** – 2Graph		

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
YEAR 4	**Unit 4.1 Coding** **Number of Weeks** – 6 **Main Programs** – 2Code						**Unit 4.2 Online safety** **Weeks** – 4 **Programs** – Various				**Unit 4.3 Spreadsheets** **Weeks** – 6 **Programs** – 2Calculate						**Unit 4.4 Writing for different audiences** **Weeks** – 5 **Programs** – 2Email, 2Connect, 2DIY						**Unit 4.5 Logo** **Weeks** – 4 **Programs** – Logo				**Unit 4.6 Animation** **Weeks** – 3 **Programs** – 2Animate			**Unit 4.7 Effective Search** **Weeks** – 3 **Programs** – Browser			**Unit 4.8 Hardware Investigators** **Weeks** – 2	

Unit 3.9
Presenting (with Microsoft PowerPoint or Google Slides)

(Optional Unit)
Number of Lessons – 5 or 6 (version dependent)
Main Program – MS PowerPoint or Google Slides

Unit 4.9
Making Music

(Optional Unit)
Number of Lessons – 4

Main Program – Busy Beats

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
YEAR 5	**Unit 5.1 Coding** **Number of Weeks** – 6 **Main Programs** – 2Code						**Unit 5.2 Online safety** **Weeks** – 3 **Programs** - Various			**Unit 5.3 Spreadsheets** **Weeks** – 6 **Programs** – 2Calculate						**Unit 5.4 Databases** **Weeks** – 4 **Programs** – 2Question, 2Investigate				**Unit 5.5 Game Creator** **Weeks** – 5 **Programs** – 2DIY 3D					**Unit 5.6 3D Modelling** **Weeks** – 4 **Programs** – 2Design and Make				**Unit 5.7 Concept Maps** **Weeks** – 4 **Programs** – 2Connect			

Unit 5.8
Word processing (with Microsoft Word or Google Docs)

(Optional Unit)
Number of Lessons – 8

Main program – MS Word or Google Docs

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
YEAR 6*	**Unit 6.1 Coding** **Number of Weeks** – 6 **Main Programs** – 2Code						**Unit 6.2 Online safety** **Weeks** – 2 **Programs** - Various			**Unit 6.3 Spreadsheets** **Weeks** – 5 **Programs** – 2Calculate					**Unit 6.4 Blogging** **Weeks** – 5 **Programs** – 2Blog					**Unit 6.5 Text Adventures** **Weeks** – 5 **Programs** – 2Code, 2Connect					**Unit 6.6 Networks** **Weeks** – 3			**Unit 6.7 Quizzing** **Weeks** – 6 **Programs** – 2Quiz, 2DIY, Text Toolkit, 2Investigate				

Unit 6.8
Understanding Binary

(Optional Unit)
Number of Lessons – 4

Main Program – 2Code

Unit 6.9
Spreadsheets (with Microsoft Excel or Google Sheets)

(Optional Unit)
Number of Lessons – 8

Main program – MS Excel or Google Sheets

KEY STAGE 3

In Key stage 3 students will access ICT and Computing lessons during their form time on a rota basis. Over the course of the academic year each student will be taught the following as part of their KBA ICT passport. This is a live curriculum and is developed according to the curriculum needs of the students.

IT and computing overview for Key Stage 3 – This provides a brief overview of the topics that will be covered.

Specific objectives found Computing Curriculum learning can be here: Outline

Year 7	Year 8	Year 9
How to log on	How to log on	How to log on
How to sign into One drive	How to sign into One drive	How to sign into One drive
How to create a folder	How to create a folder	How to use Office 365
How to find their folder on Onedrive	How to find their folder on Onedrive	Excel: Formatting
How to use Office 365	How to use Office 365	Excel: Basic formulas& functions
How to search for Word etc	How to search for Word etc	Excel: Graphs
How to create a new document	How to create a new document	Excel: Macros
How to save a document	How to save a document	Excel: Conditional formatting
How to log onto SMHW	How to log onto SMHW	Excel: Dropdown lists
How to look for the homework set	How to look for the homework set	Plan an augmented reality prototype
How to submit the work on SMHW	How to submit the work on SMHW	Design an augmented reality prototype
How to use the calendar on SMHW	How to create a blank powerpoint	Test an augmented reality prototype
Word: Header & Footer	How to create a new slide	Evaluate the augmented reality prototype
How to use the snipping tool	How to change the background colour	Access: Relationships
Word: How to insert a picture	How to use the snipping tool	Access: Queries & Reports
Word: Wrapping text	Slide master	Access: Forms
Word: How to insert page numbers	Animations	Powerpoint: Slide master
Word: How to insert/delete rows in a table	Word: How to insert/delete rows in a table	Animations
Word: How to alter text and page size	Word: How to alter text and page size	Transitions
Word: Use of heading styles	Transitions	Timing
Powerpoint:How to create a blank powerpoint	Timing	Loop
Powerpoint: How to create a new slide	Loop	How to insert a picture & a link
Powerpoint: How to change the background colour	How to insert a picture & a link	How to link each slide
Powerpoint: Slide master	How to link each slide	Word: How to insert/delete rows in a table
Powerpoint: Animations	Excel: Formatting	Word: How to alter text and page size
Powerpoint: Transitions	Excel: Basic formulas&functions	Word: Insert a cover page
Internet: How to save an image	Excel: Graphs	Word: Use of heading styles
How to use Seneca	How to create a flow chart	Word: Table of contents
Basic use of Teams	How to create a mindmap	Word: Header & Footer
Navigate websites	How to create an augmented reality prototype	Word: Page numbers
How to download a document	Basic use of Teams	How to create a Gantt chart
Email: How to send an email	Navigate websites	How to create a flow chart

Homework

As a rule the below documents indicate the likely homework topics that will be covered.

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 7	Cyber Security	Programming I & 11	Animations	Animations continued	Python	Python continued
Year 8	Gaining support for a cause	Programming II	Design Vector Graphics	Design Vector Graphics continued	Representation going audio visual	Representation going audio visual continued
Year 9	Physical Programming	From day to Silicon	Computing Systems	Computing Systems continued	Networks Semaphores	Data Science

Extended learning opportunities

Student also have enrichment opportunities to consolidate and extend their knowledge – this is via the coding club which is on a Thursday from 3-3.50pm.

KEY STAGE 4

ICT

SUBJECT	1st Half of the year (Sep – Jan)	2nd Half of the year (Jan-July)

10	**R060 Data Manipulation using Spreadsheets (J836)** • Planning and designing a spreadsheet solution • Design the functionalities for the spreadsheet solution • Design different types of outputs • Design a clear navigation system • Create a spreadsheet solution that is fit for purpose • Create outputs that are fit for purpose • Test the user interface and the technical aspects • Evaluate the spreadsheet solution ○	○ R060 Data Manipulation using Spreadsheets (J836) – **Complete the NEA** ○ Practice R070 Augmented Reality Prototype – May ○ Start R070 Augmented Reality Prototype NEA – June - July
	Mid-Year Assessment: N/A Completing NEA	**End of Year Assessment: N/A Completing NEA**

SUBJECT	September – November	December – March	March - June
11	**Coursework: R070 Using Augmented Reality to present information (J836)** • Understand the sectors that use AR and the types of devices that AR can be used on • Design an Augmented Reality Prototype using a range of design tools • Create a Augmented Reality model Prototype • Test the Augmented Reality model Prototype • Evaluate the Augmented Reality model Prototype ○ **Coursework: R070 Using Augmented Reality to present information (J836) – NEA (submit for moderation in January)**	**Theory: R050 IT in the digital world** • Design Tools • Human Computer Interface (HCI) in every day life • Data and Testing • Cyber-security and legislation • Digital Communications • Internet of Everything (IoE)	**Theory: R050 IT in the digital world** • Design Tools • Human Computer Interface (HCI) in every day life • Data and Testing • Cyber-security and legislation • Digital Communications • Internet of Everything (IoE) ○
	November Mock Exam: R050 IT in the digital world	**March Mock Exam: R050 IT in the digital world**	**ACTUAL A LEVEL EXAMINATION**

KEY STAGE 5

ICT

SUBJECT	1st Half of the year (Sep – Jan)	2nd Half of the year (Jan-July)
12	• **Unit 1 – Fundamentals of IT** • - Computer Components	• **Unit 1 – Fundamentals of IT** • - Types of Software – Application Software, Utility Software

	• - Types of Computer Systems • - Computer Hardware • - Connectivity Methods • - Communication Hardware • - Hardware Troubleshooting • - Units of Measurement • - Number Systems & Conversions • **Unit 2 – Global Information** • - Holders of Information • - Types of Information Storage Media • - The Internet • - Information Formats • Information Styles • Information Classification • Quality of Information ○	• - Operating Systems • - Protocols • - Types of Servers • - Networking Characteristics & Topologies • - Business Systems • - Communication Skills & Technology • Types of Software – Application Software, Utility Software • Personal Attributes • - Ready for Work & Job Roles • - Personal Bodies • - Industry Certification • **Unit 2 – Global Information** • Categories of Information • Stages of data analysis • Legislations • Green IT • Information sources and datatypes • Data flow diagrams • Information Management • Data vs Information • Principles of information security • Protection measures
	Mid-Year Assessment: Unit 21 – Global Information	**End of Year Assessment: Unit 1 – Fundamentals of IT**

SUBJECT	September – November	December – March	March - June
13	Coursework: **Unit 21 – Web design and Prototyping** • Present the website • Evaluation **Unit 8 Project Management & Unit 6** Application Design • Reports	• Revise for re-sit in both Units (1&2) Practice Past papers	• Revise for re-sit in both Units (1&2) Practice Past papers

	• Evaluation ○		
	November Mock Exam: Unit 1	**March Mock Exam: Unit 1 & 2**	**ACTUAL A LEVEL EXAMINATION**

KEY STAGE 4

Computer Science

SUBJECT Computer Science	1st Half of the year (Sep – Jan)	2nd Half of the year (Jan-July)
10	• IT and the world of work • E-Safety	• Programming 4 – Subroutines • Algorithms – The essentials

	• Programming 1 - Sequencing • Computer Systems • Programming 2 - Selection • Programming 3 - Iteration	• Programming 5 – Strings and Lists • Data Representation • Algorithms 2 – Searching and Sorting • Programming Task
	Mid-Year Assessment: Mock Exam Paper 2 Section 1	End of Year Assessment: Mock Paper 2

KEY STAGE 5

Computer Science

SUBJECT	1st Half of the year (Sep – Jan)	2nd Half of the year (Jan-July)
12	• Object Oriented Programming • Types of Programming Languages • Software Development • Programming Project • Computational Thinking • Introduction to Binary • Components of the Computer • Systems Software • Systems Development	• Introduction to NEA • NEA Analysis • Programming Techniques • Networks and Web Technologies • Data Types • Legal, Moral and Ethical • NEA Design • NEA Development
	Mid-Year Assessment: Paper 1 and Paper 2	**End of Year Assessment: : Paper 1 and Paper 2**