Computing and Information Technology Curriculum Overview, 2021-2022	
Why do we teach IT/Computing at Ark BDA?	The study of IT and computing is necessary in every aspect of modern society. As a subject, it combines academic challenge and rigor with a more practical understanding of the world of business. Students are introduced to complex IT terminology, theories and concepts and learn how apply these to explore real life IT issues and understand how businesses work. The units covered across KS5 allow students to explore IT concepts in different contexts, allowing them to develop sound critical, evaluative and analytical skills, and the ability to provide sustained solutions to IT issues. The aim to equip students with the relevant knowledge, experiences and skills to ensure they are confident and successful in an everchanging world where IT plays a key role. Whether their chosen route is via university, apprenticeships or entrepreneurship, students should feel empowered that they are able to be successful in whichever path they wish to follow.
How do we deliver our Christian values in IT/Computings?	In the IT and computing department, we promote the Christian values and ethos of the academy at KS5. We do this by encouraging students to 'Aim High' by realising and having faith in their potential to succeed, and encouraging them to pursue every opportunity both at Burlington Danes and outside. Students attend seminars and events at large international organisations, such as "Capgemini and Salesforce" where they are exposed to some of the leading business personnel in the UK. Students are encouraged to 'be brave' and show resilience by asking questions, contributing their ideas and taking responsibility in leading activities and tasks. Students 'keep learning' through exposure to a wider reading beyond the curriculum and regular feedback lessons.
How do we build core skills and knowledge over time?	Students develop the necessary knowledge by first learning underlying IT concepts. The Professional Pathways Level 3 BTEC Extended Diploma in IT gives students the opportunity to complete an academic qualification alongside gaining experience with world leading international businesses, including our IT partners, Capgemini, Salesforce, EY and Lloyds Bank. The course consists of completing 13 units across two years, four of which are exam based. The result is the equivalent of achieving 3 grades at A-Level. Not only do students have the opportunity gain to visit and gain work experience in leading global organisations, but they also complete a 'work readiness' course alongside their studies where they are taught valuable skills and experiences to prepare them for the university or career of their choice. The knowledge developed on this course
How does the study of IT/Computing prepare students for life beyond Ark BDA?	The Professional Pathways course run at KS5 gives students an insight into large businesses such as Capgemini, Salesforce, PwC and Bloomberg. Students attend workshops where they are exposed to day-day life in a large business and are often hand-picked for work experience. Students also complete a work readiness course alongside their studies at KS5. This is focused around developing skills and understanding of life after sixth form. It covers a range of topics from how to write a successful job application to how to choose the correct university/apprenticeship that is most suited to the needs of the students.
Implementation of the curriculum	In the current academic year, a computing and ICT curriculum has been introduced to the year 7 curriculum, starting in the spring term. The program will be offered to other year groups in the next academic year. The curriculum is delivered during once a week during tutor time , approximately 50 minutes, the tutor, rather than a subject specialist. The KS3 curriculum introduces e-safety and the appropriate use of the school computer network, VLEs, cloud storage and computing. Pupils are then introduced to the following key concepts of computing, including abstraction, decomposition, pattern recognition and algorithmic thinking. The curriculum allows pupils to analyse problem and develop appropriate solutions, using the key concepts of computing, using spreadsheets followed by visual programming in Scratch and scripting in an interpreted language such as Python. The role of hardware and software components that make up a computer system are introduced in the final term. The KS5 curriculum is offered on the Ark professional pathways programme for BTEC Nationals in IT. The programme is delivered over 18 periods per week in year 12 and 23 periods per week in year 13 to cover the 1080 guided learning hours recommended for the Btec Nationals Extended diploma and covers 13 units of which 7 are mandatory and 4 are externally assessed. The objective of this qualification is to give learners the opportunity to develop their knowledge and skills in IT. It is designed to be offered to 16–19 learners who are interested in progressing to further study in higher education IT-related disciplines. The qualification gives learners a broad base of knowledge of the IT sector. The optional units enable learners to explore their own choice of areas for further study. Learners could also progress to employment in the IT sector. Learners study the relationship between hardware and software, managing and communicating information and data, and the principles of designing and developing digital technologies and processes to support organisations. The additional mandatory unit that this qualification includes is Unit 14: IT Service Delivery (synoptic). This qualification also includes a choice of optional units, covering areas such as data modelling and analytics, mobile internet technologies, creative technologies and enterprise for IT. This will allow progression to a variety of degrees when combined with other suitable Level 3 qualifications.

NB: Follow link for curriculum content https://arkschools.sharepoint.com/:x:/r/sites/BDA/Staff/General%20Curriculum%20and%20Timetable/Shared%20Documents/Curriculum%20Overviews/2019-2020/BTEC%20Nationals%20Extended%20Diploma%20IT%20Curriculum%20Plan.xlsx?d=we479bd7115a04c2a9163ed6cf1180746&csf=1&e=9qOs9x

Year Group	Key curriculum end point: Knowledge and skills	How does it link to future progression?
1	**Online Safety** use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. **Grouping & Sorting** understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions use technology purposefully to create, organise, store, manipulate and retrieve digital content **Pictograms** use technology purposefully to create, organise, store, manipulate and retrieve digital content **Lego builders** create and debug simple programs understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions logical reasoning to predict the behaviour of simple programs **Maze explorers** create and debug simple programs understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions logical reasoning to predict the behaviour of simple programs **Animated Story books** create and debug simple programs understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions logical reasoning to predict the behaviour of simple programs **Coding** create and debug simple programs understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions logical reasoning to predict the behaviour of simple programs **Spreadsheets** use technology purposefully to create, organise, store, manipulate and retrieve digital content **Technology outside of school** recognise common uses of information technology beyond school	Online Safety Through KS1 & 2 Yr 2 Spreadsheets Yr 2Questioning Yr 2 Effective Searching Yr 2 Creating Pictures Yr 2 Making music Yr 2 Presenting ideas Yr3 Coding Yr3 Spreadsheets Yr3 Touch typing Yr3 Email Yr3 Branching Databases Yr3 Simulations Yr 3 Graphing Yr4 Coding Yr4Spreadsheets Yr4Writing for different audiences Yr4 Logo Yr4Animation Yr4Effective Search Yr4Hardware investigators Yr4Presenting with powerpoint Yr5 Coding Yr5 Spreadsheets Yr5 Databases Yr5 Game Creator Yr5 3D modelling Yr5 Word processing with Microsoft Word Yr6 Coding Yr6Spreadsheet Yr6Blogging Yr6Text Adventures Yr6Networks Yr6Understanding Binary
2	**Coding** understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs use technology purposefully to create, organise, store, manipulate and retrieve digital content **Online Safety**	Online Safety Through KS1 & 2 Yr3 Coding Yr3 Spreadsheets Yr3 Touch typing Yr3 Email Yr3 Branching Databases Yr3 Simulations Yr 3 Graphing

	use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies **Spreadsheets** use technology purposefully to create, organise, store, manipulate and retrieve digital content **Questioning** use technology purposefully to create, organise, store, manipulate and retrieve digital content **Effective Searching** use technology purposefully to create, organise, store, manipulate and retrieve digital content **Creating Pictures** understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs **Making music** understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs **Presenting ideas** understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs	Yr4 Coding Yr4Spreadsheets Yr4Writing for different audiences Yr4 Logo Yr4Animation Yr4Effective Search Yr4Hardware investigators Yr4Presenting with powerpoint Yr5 Coding Yr5 Spreadsheets Yr5 Databases Yr5 Game Creator Yr5 3D modelling Yr5 Word processing with Microsoft Word Yr6 Coding Yr6Spreadsheet Yr6Blogging Yr6Text Adventures Yr6Networks Yr6Understanding Binary
3	**Coding** design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Online safety** understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Spreadsheets** select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Touch typing**	Online Safety Through KS1 & 2 Yr4 Coding Yr4Spreadsheets Yr4Writing for different audiences Yr4 Logo Yr4Animation Yr4Effective Search Yr4Hardware investigators Yr4Presenting with powerpoint Yr5 Coding Yr5 Spreadsheets Yr5 Databases Yr5 Game Creator Yr5 3D modelling Yr5 Word processing with Microsoft Word Yr6 Coding Yr6Spreadsheet Yr6Blogging Yr6Text Adventures Yr6Networks Yr6Understanding Binary

	select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Email** use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Branching Databases** use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Simulations** select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Graphing** select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	
4	**Coding** design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs, work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information **Online safety** understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Spreadsheets** select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	Online Safety Through KS1 & 2 Yr5 Coding Yr5 Spreadsheets Yr5 Databases Yr5 Game Creator Yr5 3D modelling Yr5 Word processing with Microsoft Word Yr6 Coding Yr6Spreadsheet Yr6Blogging Yr6Text Adventures Yr6Networks Yr6Understanding Binary

	Writing for different audiences select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Logo** design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts **Animation** design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts **Effective Search** understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration **Hardware investigators** design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output **Presenting with powerpoint** select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
5	**Coding** design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Online safety** understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Spreadsheets** select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Databases** understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration	Online Safety Through KS1 & 2 Yr6 Coding Yr6Spreadsheet Yr6Blogging Yr6Text Adventures Yr6Networks Yr6Understanding Binary

	use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Game Creator** design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **3D modelling** design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Word processing with Microsoft Word** select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	
6	**Coding** design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Online safety** understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Spreadsheets** select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Blogging** select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	

	Text Adventures select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Networks** **Understanding Binary**	
7	1. Getting started Know and understand key concepts and principles of computing: • Know the processes for logging into the school's network • Know the processes for sending and receiving emails • Understand how to save, rename, and organise files • Understand how to access files stored in the cloud • Understand key principles of Internet safety • Understand the qualities of vector and bitmap graphic Apply knowledge and understanding of the key concepts and principles of Computing. • Log into the school's network proficiently • Send and receive emails successfully, using appropriate language and content • Organise files and folders to facilitate ease of access and use • Demonstrate safe practices when using the Internet • Be able to create and manipulate images Develop confident and responsible use of modern information technologies. • Demonstrate proficiency in using the school's network and computing facilities • Use image editing software with confidence. 2. Introducing spreadsheets Know and understand key concepts and principles of computing: • Understand how to write basic formulae in a spreadsheet • Understand the concept of replication and the uses of relative and absolute cell referencing • Understand how to name cells and ranges within a spreadsheet • Understand how to write a range of basic functions including SUM, AVERAGE, MAX, MIN, COUNT and IF • Understand how to use conditional formatting • Understand how to use data in a spreadsheet to create graphs and charts Apply knowledge and understanding of the key concepts and principles of Computing. • Use a range of basic formulae to manipulate data • Use conditional formatting • Create graphs and charts to represent different types of information Analyse problems in computational terms. • Identify the most appropriate functions to use when developing a spreadsheet for a particular purpose • Identify the most appropriate chart or graph to display different types of information Develop confident and responsible use of modern information technologies. • Become proficient in the use of spreadsheets to handle data in a variety of situations • Interpret data from spreadsheets 3. Programming in Scratch (4 on 3 year scheme) Know and understand the key concepts and principles of Computing. • Understand the concepts of sequencing, selection and iteration	Yr8 Computing past present and future Yr 8 Online Safety Yr8 Advanced Spreadsheet modelling using formulae, Sum, Avg, Max, Min, conditional statements using IF, Count, Count if, CountA, Conditional formatting, validation rules, queries and macros Yr8Programming in Python using Sequence, and selection Yr8 Computational thinking using Abstraction, Decomposition, Pattern recognition and algorithmic thinking

	Apply knowledge and understanding of the key concepts and principles of Computing. • Develop working programs in Scratch Analyse problems in computational terms. • Analyse the requirements of a program • Identify the processes needed to solve a problem Plan creative solutions to problems. • Design programs in Scratch to solve specific problems Develop confident and responsible use of modern information technologies • Use Scratch confidently to solve a range of problems 4. Programming in Python using "Sequencing"(6 on 3-year scheme) Know and understand the key concepts and principles of Computing. • Understand a range of basic programming constructs in Python • Know how to print to the screen, perform calculations, take inputs and store them in suitably named variables Apply knowledge and understanding of the key concepts and principles of Computing. • Develop working programs in Python to solve specific problems Analyse problems in computational terms. • Analyse the requirements of a program • Identify the processes needed to solve a problem Plan creative solutions to problems. • Design programs in Python to solve specific problems Develop confident and responsible use of modern information technologies • Use Python confidently to write simple programs Introduction to Algorithms (Used implicitly in spreadsheet modelling, programming in Scratch and Python) Know and understand the key concepts and principles of Computing. • Understand the concepts of abstraction, decomposition, pattern recognition and algorithms • Know how to read and develop flow diagrams Apply knowledge and understanding of the key concepts and principles of Computing. • Use the principles of abstraction and decomposition to produce algorithms to solve a range of problems • Write flow diagrams to sequence the steps involved in completing a task Analyse problems in computational terms. • Analyse different approaches to solving problems Plan creative solutions to problems. • Design algorithms to solve a range of computational problems	
8	1.Computing: past, present and future Know and understand the key concepts and principles of Computing • Know about important figures in the development of computing • Understand Moore's Law and how computer technology has developed and changed over time • Know how to format documents • Understand the importance of aesthetics when presenting information and have an awareness of factors that can inhibit this. Apply knowledge and understanding of the key concepts and principles of Computing. • Present knowledge about computing using word processing and presentation software • Use formatting appropriately • Ensure that work has been proofread and that spelling and grammar has been checked Analyse problems in computational terms. • Select appropriate text and images for use in presentations Plan creative solutions to problems. • Design presentations to convey information effectively Develop confident and responsible use of modern information technologies	Yr 9 Internet Cyber security and encryption Yr 9 Networking and the internet Yr Programming Python using Iteration Yr 9 Ethics of computing Yr 9 Computing project choose 2 from 3

- Use word processing and presentation software to present information effectively
-

2.Advanced spreadsheets
Know and understand the key concepts and principles of Computing
- Understand the structure and use of a range of more advanced functions
- Understand how to use validation to create dropdown lists
- Know how to sort data and run simple queries
- Understand the use of macros to automate processes and know how to record, edit and assign macros

Apply knowledge and understanding of the key concepts and principles of Computing.
- Use a range of more advanced functions within spreadsheets
- Use validation within spreadsheets to minimise user error
- Develop and use macros to automate
- aspects of spreadsheets

Analyse problems in computational terms.
- Identify the most appropriate functions to use when developing a spreadsheet for a particular purpose

Plan creative solutions to problems.
- Design spreadsheets for a range of purposes making use of a range of more advanced functions

Develop confident and responsible use of modern information technologies
- Use spreadsheets to handle data in a variety of situations proficiently
- Interpret data from spreadsheets

3 Algorithms
Know and understand the key concepts and principles of Computing.
- Understand the concepts of abstraction, decomposition, pattern recognition and algorithms
- Know how to read and develop flow diagrams

Apply knowledge and understanding of the key concepts and principles of Computing.
- Use the principles of abstraction and decomposition to produce algorithms to solve a range of problems
- Write flow diagrams to sequence the steps involved in completing a task

Analyse problems in computational terms.
- Analyse different approaches to solving problems

Plan creative solutions to problems.
- Design algorithms to solve a range of computational problems

4 Programming in Python using selection and iteration
Know and understand the key concepts and principles of Computing.
- Understand how to use selection in Python
- Understand how to program condition-controlled loops in Python

Apply knowledge and understanding of the key concepts and principles of Computing.
- Develop working programs in Python to solve a range of problems

Analyse problems in computational terms.
- Analyse the requirements of a program
- Identify the processes needed to solve a problem

Plan creative solutions to problems.
- Design programs in Python to solve a range of problems

Develop confident and responsible use of modern information technologies
- Use Python confidently to write a wider range of programs

	Computer Science	Number of lessons/main tool	Information Technology	Number of lessons/main tool	Digital Literacy	Number of lessons/main tool
Year 1	• Unit 1.2 Grouping and sorting • Unit 1.4 Lego builders • Unit 1.5 Maze explores • Unit 1.7 Coding	• 2 • 3	• Unit 1.3 Pictograms • Unit 1.6 Animated story books • Unit 1.8 Spreadsheets	• 2/2count • 5/2Create a Story • 3/2Calculate	• Unit 1.1 Online safety and exploring Purple Mash • Unit 1.9 Technology outside of school	• 4 • 2
Year 2	• Unit 2.1 Coding	• 5/2Code	• Unit 2.3 Spreadsheets • Unit 2.4 Questioning • Unit 2.6 Creating Pictures • Unit 2.7 Making Music • Unit 2.8 Presenting ideas	• 4/Calculate • 5 • 5/paint a picture • 3/sequence • 4	• Unit 2.5 Effective searching	• 3
Year 3	• Unit 3.1 Coding	• 6/2ode	• Unit 3.3 Spreadsheets • Unit 3.4 Touch typing • Unit 3.6 Branching database • Unit 3.7 Simulations • Unit 3.8 Graphing • Unit 3.9 Presenting	• 3/crash course/calculate • 4/type • 4/question • 3/stimulate • 3/graph • 5/6 – PowerPoint	• Unit 3.2 Online Safety • Unit 3.5 Email (email safety)	• 3 • 6/email
Year 4	• Unit 4.1 Coding • Unit 4.5 Logo • Unit 4.8 Hardware Investigators	• 6 • 4 • 2	• Unit 4.3 Spreadsheets • Unit 4.6 Animation • Unit 4.7 Effective searching • Unit 4.4 Writing for different audiences • Unit 4.9 Making music	• 6 • 3 • 3 • 5 • 4/Busy beats	• Unit 4.2 Online Safety `	• 4
Year 5	• Unit 5.1 Coding • Unit 5.5 Game Creator	• 6 • 5/2DIY 3D	• Unit 5.3 Spreadsheets • Unit 5.4 Databases • Unit 5.6 3D Modelling • Unit 5.7 Concept Maps • Unit 5.7 Word Processing	• 6 • 4 • 4/Design and Make • 4/Connect • 8/MS words	• Unit 5.2 Online Safety	• 3
Year 6	• Unit 6.1 Coding • Unit 6.5 Text adventures • Unit 6.6 Networks • Unit 6.8 Understanding binary	• 6 • 5 • 3 • 4	• Unit 6.3 Spreadsheets • Unit 6.4 Blogging • Unit 6.7 Quizzing • Unit 6.9 Spreadsheets	• 5 • 4 • 6 • 8/Excel	• Unit 6.2 Online Safety	• 2

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	**Key question**	What are the key principles of using the school network?	What are the key principles of e-safety?	How can a spreadsheet be used to create simple mathematical models?		How can programming constructs be used to develop solutions for specific user needs?	
	Content	Know the process for securely logging onto the school's network Know the process for sending an receiving emails safely. Understand how to manage your files on the school network and cloud storage.	Understand how to protect your online identity and privacy. Recognise inappropriate content, contact and conduct and know how to report concerns	Understand how to write basic formulae in a spreadsheet Understand the concept of replication and the uses of relative and absolute cell referencing Understand how to name cells and ranges within a spreadsheet Understand how to write a range of basic functions including SUM, AVERAGE, MAX, MIN, COUNT and IF Understand how to use conditional formatting Understand how to use data in a spreadsheet to create graphs and charts		Understand the concepts of abstraction, decomposition to develop algorithms for a specific need. Understand the concepts of sequencing, selection and iteration. Develop working programs in scratch and Python using sequencing. Analyse the requirements of a program. Develop solutions to meet the requirements of a program. .	
Year 8	**Key question**	What are the key developments in computing?		How can a spreadsheet be used to create more complex mathematical models?		How can computational thinking and programming concepts be used to develop solutions to meet specific user needs.	
	Content	Know about important figures in the development. Understand Moore's Law and how computer technology has developed and changed over time. Know how to format documents. Understand the importance of aesthetics when presenting information and have awareness of factors that can inhibit this.		Understand the structure and use of a range of more advanced functions. Understand how to use validation to create dropdown. Know how to sort data and run simple queries. Understand the use of macros to automate processes Understand the use of MACROS to automate processes		Understand how to use selection and iteration. Understand how to use conditional iteration. Understand the use of functions to improve the efficiency of a solution Develop programs to solve a range of problems and meet specific user needs	
Year 12 BTEC	**Topic**	Unit 2 – Creating Information systems Unit 4 – Programming Unit 11 – Cyber security and incident management (LA.A) Work readiness: Who am I		Unit 1 – Information technology systems Unit 11 Cyber security and incident management (LA B.C) Unit 9 – IT Project management Unit 3 Social media in business Revision for Unit 1, 2 and Unit 11		Unit 3 Social media in business Unit 6 Website development Unit 9 – IT project management Revision for Unit 1,2,11	Unit 3 Social media in business Unit 6 Website development Unit 9 – IT project management Revision for Unit 1,2,11
	Key question	What are the advantages of using a relational database?	What are the stages of the software development cycle?	What are the criteria for selecting appropriate IT systems? How can one mitigate against possible cyber security threats?	What are the criteria used in the selection of appropriate project management methodology?	What are the advantages and disadvantages of using social media channels to promote business interests?	How can you capture user interest to ensure customers are served?
	Content	Relational database management	Examine the computational thinking skills and principles of computer programming	Role of computer systems and the implications of their use in personal and professional situations	Principles of project management methodologies of IT project management.	Explore the impact of social media on the ways in which businesses promote their products and services.	Understand the principles of website development
	Assessment	25/11 Assessment cycle: Creating an Information systems 2020 past paper		03/02 Assessment cycle: Unit 1 Information technology systems Unit 11 Cyber security and incident management	In class assessment: 2019 Unit 11 Cyber security and incident management	External examinations: Unit 1 Unit 2 Unit 11	External examinations: Unit 1 Unit 2 Unit 11
Year 13 BTEC	**Topic**	Unit 5 Data modelling Unit 10 Big data modelling Unit 14 IT Service delivery		Unit 14 IT Service delivery Unit 8 – Computer games development Unit 7 Mobile apps development		Revision – Unit 14 IT Service delivery	Unit 17 or 18 Digital graphics or animation

	Key question	How can data modelling provide the computational ability to compare consequences, and determine a preferred course of action	How can big data be analysed to inform business and improve profitability?	What are the implications of creating and using software on mobile devices? How can you exploit the technologies currently available to ensure an effective final product?	What are the implications for users and developers of the key technologies used in the computer gaming industry?	What are the key issues related to the use of IT and the implications for organisations and their customers.	How can digital products be designed to ensure they are consumed by their intended audience and are fit for purpose?
	Content	Investigate data modelling and how it can be used in the decision making process	Investigate the role of big data and business analytics to improve performance, for benchmarking or to trigger innovation in organisations	Design considerations inherent in mobile apps and general software design	The impact of user needs and preferences impact on game design and how target technologies affect the design and development of computer games.	Analyse the IT services and the requirements of organisations to plan the implementation of the IT service delivery solution.	Investigate the purpose and characteristics of digital graphics that are an important part of visual communications
	Assessment	Unit 5 Internal assessment Unit 14 External assessment practice		Unit 7 Internal assessment	Unit 8 Games development internal assessment	External assessment: Unit 14	Unit 17 or 18 Internal assessment