

Year 7 Curriculum – 2022-2023

	Autumn Term		Spring Term		Summer Term	
	1	2	1	2	1	2
Key Concepts	Information Technology	Computer Science	Information Technology	Algorithms & Programming	Digital Literacy	Information Technology
National Curriculum Knowledge & Understanding	<p>Creating a blog</p> <p>Pupils will undertake a creative project that involves selecting, using, and combining multiple applications, to achieve challenging goals. They will create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability. They will understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy. They will recognise</p>	<p>Computer Systems</p> <p>Pupils will understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems. They will understand how instructions are stored and executed within a computer system.</p>	<p>Vector Graphics</p> <p>Pupils will create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability.</p>	<p>Programming in Small Basic:</p> <p>Pupils will use a block-based programming language to solve a variety of computational problems. They will design and develop modular programs that use procedures or functions.</p>	<p>Collaborating online respectfully</p> <p>Pupils will undertake a creative project that involves selecting, using, and combining multiple applications, to achieve challenging goals. They will create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability. They will understand a range of ways to</p>	<p>Data modelling using spreadsheets:</p> <p>Pupils will design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems. They will undertake projects that involve selecting, using, and combining multiple applications, to collect and analyse data and meet the needs of known users.</p>

	inappropriate content, contact and conduct, and know how to report concerns.				use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy. They will recognise inappropriate content, contact and conduct, and know how to report concerns.	
Assessment	Assessment Portfolio	Written assessment.	Vector graphic - assessment of practical skills.	Create programs in Small Basic as solutions to problems and produce an assessment portfolio.	Cyberbullying presentation – assessment of practical skills.	Assessment portfolio.
Why this?	Pupils must be able to present their work using a range of application software. The creation of a blog at the beginning of the academic year will allow pupils to produce a portfolio of evidence across KS3.	This is fundamentally how a computer works - pupils need to know how instructions and data, stored as binary values, are used in the fetch-execute cycle. They must understand	Pupils are beginning to design solutions to given problems and evaluating their success against criteria. This can be demonstrated across a range of software including graphic design software.	Pupils will build upon their skills gained in block-based programming and be introduced to a text based programming language. With visual output, this language is a	Throughout their school lives pupils will be required to access secure accounts such as individual user accounts on the network and online accounts. They need to know how to keep their	Pupils should have practical experience of creating and interpreting computational abstractions that model real-world problems. This unit requires pupils to create

		<p>the different layers in computing, from programs and the operating system, to the physical components that store and execute these programs, to the fundamental binary building blocks that these components consist of.</p>		<p>logical step between Scratch and Python. They will use Small Basic to code solutions to given problems with increasing complexity.</p>	<p>data safe both in and out of school. They must also understand their ethical responsibilities regarding their conduct towards others and their respect of intellectual property when using copyright materials. Pupils may experience sexting, grooming or cyberbullying and need to be able to report concerns about their digital activity to a responsible adult.</p>	<p>and manipulate a spreadsheet, using data to model different scenarios. Pupils must be taught to undertake projects that require the collection and analysis of data to meet the needs of the user.</p>
<p>Why now?</p>	<p>Due to Covid-19, pupils have had limited time to learn skills across a range of application software. The creation of a blog will allow pupils to build a portfolio of their work across the academic year.</p>	<p>Pupils who study Computing at KS4 will need to know how internal components of a computer work together.</p>	<p>Pupils are gaining practical skills in the use of various software throughout KS3. They must now show awareness of how fit for purpose their solution is and demonstrate the ability to suggest</p>	<p>In order to write text-based programs, Pupils need to be able to decompose a real-world problem and plan an effective solution. Small Basic forms a bridge between</p>	<p>Pupils may begin to setup social media accounts which have a recommended age of 13+. This can be a form of freedom for pupils and they may have limited parental control. If</p>	<p>This stage embeds knowledge of data and information so requires more understanding and interpretation.</p>

			and make valid improvements.	Scratch and Python, which pupils will study in Y8 and Y9.	pupils don't understand the dangers associated with being online, they may leave a digital footprint that will stay with them for the rest of their lives, potentially impacting upon future education and employment.	Spreadsheet software enables pupils to create simplified abstractions of real-life systems. The use of spreadsheet software and understanding of storage and manipulation of data will prepare pupils for a unit that uses database management software later in KS3. The combination of these units at KS3 will prepare pupils for the content of the 'Information Technology' course at KS4.
Skills & Characteristics	<ul style="list-style-type: none"> Use multiple applications to achieve challenging goals 	<ul style="list-style-type: none"> Understands that computer systems consist of 	<ul style="list-style-type: none"> Uses basic shape tools Rotates and resizes images 	<ul style="list-style-type: none"> Uses logical reasoning to predict the behaviour of programs. 	<ul style="list-style-type: none"> Explains strategies for assessing the degree of trust they place in 	<ul style="list-style-type: none"> Classifies different types of data (text, number) and understands

	<ul style="list-style-type: none"> • Use and understand the need for tools specific to user needs and applications • Review existing products to assess their suitability for purpose • Create digital documents to meet a specification • Compose respectful communications online • Skills Builder: <ul style="list-style-type: none"> ○ <i>Creativity</i> when creating a blog which is formatted appropriately to meet the specific requirements ○ <i>Speaking</i> through class discussion and 	<p>hardware and software.</p> <ul style="list-style-type: none"> • Recognises the different types of software used in a computer system • Understands the process of the FDE cycle • Understands the need for an operating system • Describes how hardware interacts within the FDE cycle • Skills Builder: <ul style="list-style-type: none"> ○ <i>Speaking</i> through class discussion and 	<ul style="list-style-type: none"> • Draws custom shapes • Uses fill colour and gradient tools • Combines shapes to create an image • Manipulates existing images to achieve a given purpose • Evaluates a product against success criteria • Skills Builder: <ul style="list-style-type: none"> ○ <i>Creativity</i> when creating a blog which is formatted appropriately to meet the specific requirements 	<ul style="list-style-type: none"> • Builds programs that implement algorithms to achieve given goals. • Demonstrates how arithmetic operators, if statements, and loops, are used within programs. • Declares and assigns variables. • Knows that users can develop their own programs, and can demonstrate this by creating programs with increasing complexity. • Detects and corrects simple semantic errors i.e. debugging, in programs. • Observes that programs execute by 	<p>people or organisations online.</p> <ul style="list-style-type: none"> • Provides examples of how to make positive contributions to online debates and discussions • Describes how bullying may change as they grow older and recognise when it is taking place online. • Identifies and demonstrates actions to support others who are experiencing difficulties online. • Creates and uses strong and secure passwords. • Explains how their internet 	<p>how these are used in different situations.</p> <ul style="list-style-type: none"> • Demonstrates how filters or single criteria searches can find information. • Understands the difference between data and information. • Recognises that digital content can be represented in many forms. • Distinguishes between some of these forms and can explain the different ways that they communicate information. • Recognises that data can be structured
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	<p>'Think, pair, share' activities.</p> <ul style="list-style-type: none"> ○ <i>Listening</i> during class discussion and 'Think, pair, share' activities. ○ <i>Aiming High</i> when producing documents using applications that they have never used before 	<p>'Think, pair, share' activities.</p> <ul style="list-style-type: none"> ○ <i>Listening</i> during class discussion and 'Think, pair, share' activities. 	<ul style="list-style-type: none"> ○ <i>Speaking</i> through class discussion and 'Think, pair, share' activities. ○ <i>Listening</i> during class discussion and 'Think, pair, share' activities. ○ <i>Aiming High</i> when producing documents using applications that they have never used before 	<p>following precise instructions.</p> <ul style="list-style-type: none"> ● Executes, checks and changes programs. ● Skills builder <ul style="list-style-type: none"> ○ <i>Problem solving</i> skills when forming a programmable solution to a problem ○ <i>Aiming high</i> when programming in a text-based language which pupils have never used before. 	<p>use is often monitored.</p> <ul style="list-style-type: none"> ● Skills Builder: <ul style="list-style-type: none"> ○ <i>Creativity</i> when creating a blog which is formatted appropriately to meet the specific requirement ○ <i>Speaking</i> through class discussion and 'Think, pair, share' activities. ○ <i>Listening</i> during class discussion and 'Think, pair, share' activities. ○ <i>Aiming High</i> when producing documents using applications 	<p>in tables/charts to make it useful.</p> <ul style="list-style-type: none"> ● Be able to predict and use data to prove the outcomes of a range of scenarios. ● Skills builder <ul style="list-style-type: none"> ○ <i>Problem solving</i> skills when modelling what-if scenarios. ○ <i>Aiming high</i> when creating a spreadsheet using formulae, functions and analysing data.
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					that they have never used before	
Aspirations & Careers	<ul style="list-style-type: none"> • Pupils will gain an insight into the requirements of ICT/Computing based careers such as coding and data management • Pupils will be offered the opportunity to enhance their computing skills at 'Computing Club'. • Online coding competitions open to all Pupils. • Opportunity to attend 'ICT Live' visit to Disneyland Paris 					

Computer Science End Points			
Year Group	Basic (Lower Ability End Points)	Clear (Middle Ability End Points)	Detailed (Higher Ability End Points)
7	<ul style="list-style-type: none"> • Pupils understand the benefits of online communication and can manage some of the risks associated with the digital environment. • Pupils refine searches to find, select and use information, questioning it's reliability. Pupils understand the need for collecting information in a format that is suitable for processing. • Pupils develop simple ICT-based models to explore patterns and relationships and make predictions about the consequences of their decisions. • Pupils plan, test and refine sequences of instructions. • Pupils select appropriate input and output devices to be used within a computer system. 	<ul style="list-style-type: none"> • Pupils use ICT safely and responsibly, discussing their knowledge and experience of using ICT and their observations of its use outside of school. • Pupils select information they need for different purposes, check its accuracy and arrange it in a form suitable for processing. • Pupils are systematic in changing the variables in an ICT-based model and explain the impact of changes. • Pupils create sequences of instructions and understand the need to be precise when framing and sequencing instructions. • Pupils know the main internal parts of basic computer architecture. 	<ul style="list-style-type: none"> • Pupils use ICT safely and responsibly, discussing impact of ICT on society. • Pupils select information they need using a greater range and complexity of information and arrange it in a form suitable for processing. • Pupils use ICT-based models to make predictions and vary the rules within the models. • Pupils develop, try out and refine sequences of instructions and show efficiency in framing these instructions, using sub-routines where appropriate. • Pupils understand how data is stored in memory during the fetch-decode-execute cycle.

