Fladbury CE VA First School

Computing

"Happy Hearts, Open Minds, Bright Futures."

"Computational thinking provides insights into many areas of the curriculum, and influences work at the cutting edge of a wide range of disciplines. Why is computational thinking so important? It allows us to solve problems, design systems, and understand the power and limits of human and machine intelligence." Computing at School

Technology is developing and is a huge part of today's society. Pupils will develop many skills such as problem solving, using logical reasoning, communicating through technology, presenting their work using various software, creating charts and navigating the online world safely and confidently.

Intent	Implementation	Impact
What will take place before teaching in the classroom?	What will this look like in and outside the classroom?	How will this be measured?
The school's senior leadership team will: • Lead the school staff to develop a clear overarching curriculum intent which drives the ongoing development and improvement of all curriculum subjects. • Ensure that the curriculum leaders have appropriate time to develop their specific curriculum intent through careful research and development. • Provide sufficient funding to ensure that implementation is high quality.	**Our teaching sequence will:** • Start with what the children know, understand, are able to do and able to say with a cold assessment, in line with the three key areas. • Model technical concepts. • Introduce key vocabulary to be used and its meaning. • Provide opportunities for the children to explore our ICT tools confidently. • Consider opportunities to use skills within our cross- curriculum.	**Pupil Voice will show:** • A secure understanding of the key techniques and methods for each key area of the curriculum: digital literacy, computer science and information technology. Through a curriculum that equips children with the skills to become digital-literate. • A progression of understanding, with appropriate vocabulary which supports and extends understanding. • A confident understanding within the relevance of the computing skills they are learning and how they can apply them to other areas of the National Curriculum.

The curriculum leader will:	Our computer suite will:	Displays around school and books will show:
- Understand and articulate the expectations to support teaching and staff in the delivery of a good computing curriculum. - Ensure an appropriate progression of computing skills and knowledge is in place over time through observing computing lessons. - To work alongside our cluster schools to improve children's' experiences of computing and help children access more equipment which we do not have in school, currently due to funding. - Ensure national online safety day is celebrated and used to build awareness with parents.	- Provide appropriate quality equipment for each area of the curriculum. - Have developed a whole school learning wall which include high quality WAGOLLs of photos, questions and vocabulary.	- Pupils have had opportunities for practice and refinement of skills. - A varied and engaging curriculum which develops a range of digital-literate understanding and skills, through cross-curricular experiences. - To have computing displays within the computer suite with key vocabulary and good examples of work. - The importance of online safety, through displays within the learning environment.
The class teacher will, with support from the curriculum leader:	Our children will be:	The curriculum leader will:
- Create a carefully positioned long term plan which ensures appropriate coverage of knowledge, skills and specified vocabulary from the progression grid in line with the National Curriculum. - Personally pursue support for any particular subject knowledge and skills gaps prior to teaching. - Prepare children to participate in a rapidly changing world in which work and other activities are increasingly transformed by access to varied and developing technology.	- Enthusiastic, keen and engaged because they are challenged by the curriculum which they are provided with. - Safe and happy in computing lessons which give them opportunities to explore their own creative development. - Develop skills and confidence over time because of careful planning, focused delivery and time to practice and hone skills. - Comfortable to use ICT tools to find, explore, analyse, exchange and present information responsibly, creatively and with discrimination. - Aware of how to respect technology and for their own and others online safety.	- Celebrate the successes of pupils through planned displays. - Collate appropriate evidence over time which evidences that pupils know more and remember more. - Monitor the standards in the subject to ensure the outcomes are at expected levels. - Provide ongoing CPD support based on the outcomes of subject monitoring to ensure that the impact of the curriculum is wide reaching and positive. - To complete questionnaires with children to hear their voice on the computing curriculum within school and look at areas of development. - To continue to review and discuss the computing curriculum throughout the year to lead to further development within the subject.

Happy Hearts	Open Minds	Bright Futures
Through our IT Curriculum, the lens of our Christian value of 'joy' and our vision statement 'happy heart', the children of Fladbury are provided with suitable resources to empower them to find out more things that make them happy.	The IT curriculum at Fladbury is thorough and ambitious, equipping our children to use technology, computational thinking and creativity to understand and change the world. With an open mind, it is now more important than ever the children of Fladbury to understand how to use technology positively, responsibly and safely.	By the time they leave Fladbury our children will have gained key knowledge and skills in the 3 main strands of the National Curriculum for Computing. These strands are: computer science (programming and understanding how digital systems work), information technology (using computer systems to create, store, retrieve and send information) and digital literacy (evaluating digital content and using technology safely and respectfully). The depth and breadth of our coverage aims to provide all of our children with a solid grounding for future learning and the ability to be active digital citizens in the modern world.

Age Related Statutory Coverage	
KS1	KS2
- 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 - Recognise common uses of information technology beyond school - 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	- Design, write and debug programs that accomplish specific goals, including controlling or simulation 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 works and to detect and correct errors in algorithms and programs - 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 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 - Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Digital Literacy		
	Key Stage One	Lower Key Stage Two
Knowledge	Use technology safely and respectfully, keeping personal information private. Identify where to go for help and support when they have concerns about content on the internet or other online technologies	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour. Identify a range of ways to report concerns about content and contact. Use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content.
Skills	Pupils learn that the internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information. Pupils are introduced to the concept that real people send messages to one another on the Internet and learn how messages are sent and received. They recognise that it may be difficult to distinguish between someone who is real and someone who is not. Pupils are introduced to the basics of online searching. Pupils learn to explore websites and to say whether they like them or not and why.	Pupils reflect on their own digital footprint and behaviour online. Pupils identify what is appropriate and inappropriate behaviour on the internet, recognising the term cyberbullying. Pupils agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords. Pupils seek help from an adult when they see something that is unexpected or worrying. Pupils demonstrate understanding of age-appropriate websites and adverts. Pupils are introduced to the basics of online searching, including how to use effective keywords. They also learn to conduct searches that provide them with the most helpful and relevant information.

Vocabulary	Rules Online Private information Email Appropriate/ inappropriate sites Cyber-bullying Digital footprint Keyword	Safe Meet Accept Reliable Tell Online Trusted Adult Information Safety Personal Internet World wide web Communicate Message Social media Email Password Cyberbullying Plagiarism Profiles Account Private Public

Computer Science	
Key Stage One	Lower Key Stage Two

	Key Stage One	Lower Key Stage Two
Knowledge	• 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 • Recognise common uses of information technology beyond school	• Design, write and debug programs that accomplish specific goals, solve problems by decomposing them in smaller parts. • Use sequence, selection and repetition in programs. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • Recognise common uses of information technology beyond school
Skills	• Pupils learn to program a basic floor Bee bot to complete task with given instructions. • Pupils learn about some of the uses of the internet.	Pupils use *Scratch* to: • Learn to use graphical programming language. • Sequence instructions to create an animation, through a simple algorithm. • Use variables to create an effect, e.g. repetition, if, when, loop. • Pupils learn to collaborate electronically by blogging, mailing and working on shared documents.
Vocabulary	Instructions Buttons Robots Patterns Program Forward Backward Right-angle turn Algorithm Sequence Debug Predict	Decompose Instructions Decomposing Commands Logical sequence Forward Flowchart Left Sprite Right Block Move Command Turn Algorithm Clear screen Answer Variable Correct Blog Errors Mail Program Share

Information Technology	
Key Stage One	Lower Key Stage Two
Knowledge ● Use technology purposefully to create, organise, store, manipulate and retrieve digital content	● 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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
Skills ● Digital Publishing: Pupils learn to use basic word processing package and to write and illustrate a short story ● Presentation: Pupils learn to make simple presentations ● Graphics: Pupils learn to create a simple digital painting ● Animations: Pupils learn to make a simple animation for instance in Puppet Pals ● Media: Pupils learn to use digital cameras and microphones for a purpose ● Working with data: Pupils learn to create and use a pictogram	● Digital Publishing: Pupils learn how to use software to create an e-book, brochure or poster on a given subject. ● Presentations: Pupils learn to write and deliver a presentation on a given subject. ● Graphics: Pupils learn how to take, adapt or create images to enhance or further develop their work. ● Animations: Pupils learn how to develop a storyboard and then create a simple animation using for instance 'Puppet Pals' or 'Stop Motions' Animation'. ● Sound and video: Pupils record and edit media to create a short sequence. ● Working with data: Pupils learn to search, sort and graph information.

Vocabulary	Camera	Filter	Text	Redo
	Sounds	Google	Box	Menu
	Image bank	Search engine	Format	Highlight
	Word bank	Image	Image	Toolbar
	Space bar	Keyboard	Hyperlink	Spellcheck
	Paint effects	Email	Minimise	Insert
	Templates	Subject	Restore	Digital content
	Animation	Address	Organise	Graphics
	Documents	Communicate	File	Bold
	Type	Sender	Folder	Italic
	Enter/return	Safe	Close	Underline
	Caps lock	Secure	Exit	Align
	Backspace	Internet	Search	Database
	Photographs	World wide web	Print	Email
	Video	Social media	Password	Send
	Data	Font	Snipping	Reply
	Pictogram	Size	tool	
	Digitally		Undo	
	Save			
	Retrieve			

Cycle of Learning

At Fladbury CE First School, we encourage children in The Early Years to think carefully about and explore the world around them. This includes the place of technology within our ever changing world. Children are given opportunities to use and explore technology such as cameras, computers and tablets for real-life, useful purposes. Children are also taught about the importance of keeping safe online and given the tools and knowledge they need to do this.

Our curriculum for 22-23 has been specifically designed to meet the needs of the children in our current groups and classes. This is likely to change again next year due to ever-changing year group numbers and class structures.

	Autumn		Spring		Summer	
Year 1	**Computing Systems and Networks –** Technology around us	**Creating Media –** Digital painting	**Programming A –** Moving a robot	**Data and Information –** Grouping data	**Creating Media –** Digital writing	**Programming B** – Programming animations
Year 2 **Year 3**	**Computing Systems and Networks –** Information technology around us – Identifying IT and how its responsible use improves our world in school and beyond	**Creating Media -** Digital Photography – Capturing and changing digital photographs for different purposes	**Programming A –** Robot Algorithms – creating and debugging programs and using logical reasoning to make predictions	**Data and Information –** Pictograms – collecting data in tally charts and using attributes to organise and present data on a computer	**Creating Media –** Digital Music – using a computer as a tool to explore rhythm and melodies, before creating a musical composition	**Programming B** Programming quizzes – designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz
Year 3 **Year 4**	**Computing Systems and Networks –** connecting computers	**Creating Media** – Stop-frame animation	**Programming A –** Sequencing sounds	**Data and Information –** Branching databases	**Creating Media –** Desktop Publishing	**Programming B** – Events and Actions in programs

Support	
https://www.stem.org.uk/resources/search?f[0]=field_subject:92	STEM: Computing resources linked to NC objectives. Teaching notes, activities and worksheet to enable to complete objectives not just on digital devices.
https://www.twinkl.co.uk/resources/planit-primary-teaching-resources/planit-computing-primary-teaching-resources	Planit Computing scheme of work (Twinkl) for help with resources/planning/progression.
http://www.sketchnation.com/lesson_ideas_storytelling.html	Sketch nation
https://www.childnet.com/	Childnet International, a non-profit organisation working with others to help make the internet a great and safe place for children.

3. Vocabulary: Glossary of Terms and Progressive Vocabulary Map	
Glossary of Computing terms	
Digital literacy	Individual's ability to find, evaluate, and compose clear information through writing and other mediums on various digital platforms.
Computer science	It is the study of both **computer** hardware and software design. It encompasses both the study of theoretical algorithms and the practical problems involved in implementing them through **computer** hardware and software.
Information technology	It is the use of computers to store, retrieve, transmit, and manipulate data, or **information**, often in the context of a business or other enterprise.
data	A structured set of numbers, representing digitised text, images, sound or video, which can be processed or transmitted by a computer.
debug	The process of identifying and removing errors from instructions or programs.
program	A stored set of instructions encoded in a language understood by the computer that does some form of computation, processing input and / or stored data to generate output.
Information	The meaning or interpretation given to a set of data by its users, or which results from data being processed.
internet	The global collection of computer networks and their connections, all using shared protocols (TCP/IP - transmission control protocol/internet protocol) to communicate.
e-safety	This is how to make sure you are safe when using the Internet.
Web browser	This is an application used to access and view websites. Common **web browsers** include Microsoft **Internet** Explorer, Google Chrome,
World Wide Web	A service provided by computers connected to the internet (web servers), in which pages of hypertext (web pages) are transmitted to users; the pages typically include links to other web pages and may be generated by

	programs automatically.
Software	Computer programs, including both application software (such as office programs, web browsers, media editors and games) and the computer operating system. The term also applies to 'apps' running on mobile devices and to web-based services.
Hardware	The machines, wiring, and other physical components of a computer or other electronic system