Tilston Parochial Primary School

Our School Curriculum

A creative and thematic approach to learning.

Curriculum Intent and Progression Map

Subject: Computing

Tilston Parochial CE Primary School

'Whether you want to uncover the secrets of the universe, or you just want to pursue a career in the 21st century, basic computer programming is an essential skill to learn.' - Stephen Hawking

At Tilston Parochial CE Primary, we believe computing is a tool of everyday life rather than an annexed subject that is perceived as standalone and separate from the rest of the curriculum.

With technology playing a significant role in society today, we believe meaningful computing skills must be taught to children if they are to participate effectively and safely in this ever-developing digital world. We believe teaching pupils to become responsible, respectful and competent computer users is not only a necessity for success whilst in education, but will also enable our children to have the lifelong skills necessary to flourish beyond their time in school.

We recognise that strong computing skills will help forge better home and school links and also enthuse and equip children with the capability to use technology throughout their lives, opportunities which may not always be readily available at home.

Our key aim is that children learn and develop the skills they need to become 'digitally literate' and to use different devices with skill and confidence. Our computing curriculum seeks to go beyond the functional aspects of computing, beyond pure computation and output, but also allow our children to build their perseverance and resilience, to test their logical thinking and problem solving skills, to be creative in new ways and have the opportunity to appraise, tweak and improve their work. By allowing these skills to underpin our computing curriculum, we seek to engage *ALL* children in computing, regardless of initial interest or home exposure. Allowing all children to identify how they can flourish within the computing curriculum helps to achieve our goal of building the wider curriculum as well as the life skills we desire.

Computing Curriculum **Intent**

Tilston Parochial CE Primary School

At Tilston Parochial CE Primary, we believe computing is a tool of everyday life rather than an annexed subject that is perceived as stand-alone and separate from the rest of the curriculum.

With technology playing a significant role in society today, we believe meaningful computing skills must be taught to children if they are to participate effectively and safely in this ever developing digital world. We believe teaching pupils to become responsible, respectful and competent users of data, information and communication technology is not only a necessity for success whilst in education, but will also enable our children to have the lifelong skills necessary to flourish beyond their time in school. Strong computing skills will not only provide technology solutions for forging better home and school links but also enthuse and equip children with the capability to use technology throughout their lives.

Our key aim is that children learn and develop the skills they need to become 'digitally literate', to use different devices with skill and confidence, and with a solid understanding of how computer programmes work and are developed, develop strong computing mindset which can be applied and used across the curriculum.

TRUST 'May the God of hope fill you with all joy and peace as we trust in him.' Romans 15:13	**COURAGE** 'Be strong and courageous, do not be frightened or dismayed, for the Lord your God is with you wherever you go.' Joshua 1:9	**COMMUNITY** How good and pleasant it is when God's people live together in unity.' Psalm 133.1	**RESPECT** 'Do to others as you would have them do to you.' Matthew 7:12	**JOY** 'A happy heart makes the face cheerful.' Proverbs 15:13	**FRIENDSHIP** 'There is a friend who sticks closer than a brother.' Proverbs 18:24

Bringing out the Best in Everyone. *'Encourage one another and build each other up.' Thessalonians 5:1*

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'Learning to write programs stretches your mind, and helps you think better, creates a way of thinking about things that I think is helpful in all domains' – Bill Gates

As a school, we adopted the Purple Mash Computing Scheme of Work from Reception to Year 6. The scheme of work supports teachers in delivering fun and engaging lessons which help to raise standards and allow Tilston as a school to 'bring out the best in everyone'.

Our curriculum will be implemented by following the Purple Mash Mixed Aged lesson overviews for Year 1- 6. Teachers refer to the overview documents on Purple Mash which detail the individual unit lessons for each mixed year group in line with the National Curriculum. The Purple Mash scheme focuses on Digital Literacy, Computer Science and Information technology. These themes are revisited and returned to build on prior learning and deepen our children's knowledge and understanding. Individual activities are selected by the Reception teacher from Purple Mash to support the Early Learning goals.

The order in which lessons are taught within each age group is based on the teacher's discretion to ensure logical progression across each focus area, that the needs of each mixed aged cohort are met and to maximise cross curricular links.

Discrete computing lessons are taught in half-term blocks each term. A key focus for each lesson, in addition to the main computing objective, is to widen our children's computing vocabulary so that it is used by the children when they are talking about and sharing what they have learnt.

 In addition, computing is woven into the wider curriculum to help encourage the use of ICT as an 'everyday tool' and to cement and consolidate skills learnt within the discrete lessons. For example, Purple Mash maybe used to help support the

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We can measure the impact of our curriculum by talking to our children about what they have learnt. Our subject leader engages with our children during each term, presenting them with opportunity to share what they have learnt, discovered and conquered, not only during their distinct computing lessons but also in the wider curriculum. These meaningful conversations allow us to monitor not only what the children have learnt but also identify how and when they have been applying the broader computer skills that underpin our curriculum as well as their use of key computing vocabulary.

In addition, we use a variety of key assessment tools. Children are formally assessed using Insights. Teachers use the Purple Mash Computing Assessment Tool for Years 1 to 6 to inform the assessment recorded on Insights. This tool enables our teachers to identify accurately the attainment of our children through comparison with detailed guidance for each National Curriculum objective. This allows for accurate and consistent assessment. Work from a range of classes and abilities is shared on Blippit to ensure progression and accurate development of skills. Formative assessment is undertaken during lessons and used to inform future planning.

The Computing Lead monitors standards of Computing teaching and learning to ensure our curriculum is having the intended impact. This involves a combination of the following:

- Work scrutiny;
- Learning walks;

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At Tilston Parochial Primary, we aim always 'bring out the best in everyone'. This includes children of all abilities, social and cultural backgrounds, those with disabilities, EAL speakers and SEN statement and non-statemented. We recognise that the children attending our school range from those who have regular access to a number of devices in their homes, to children who have little or no technology at home. With this in mind we are conscious of the need to target our teaching at all ability levels through additional scaffolding, differentiation or peer support. With this in mind, we seek to ensure additional access to technology is provided throughout the school enabling our children to become 'fluent' with technology.

	Computing					
	Robins **Year 1/ 2**		**House Martin** **Year 3/ 4**		**Kestrels** **Year 5/6**	
Curriculum Objectives	• Understand what algorithms are and that programs execute by following precise and unambiguous instructions. • Create and debug simply programs. • Use technology purposefully to create, store, manipulate and retrieve digital content • Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns • Understand what algorithms are and how they are implemented as programs on digital devices. • Create and debug simple programs. • Use logical reasoning to predict the behaviour of simple programs. • Use technology purposefully to create, 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		• 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 • 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 • 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		• select, use and combine a variety of software, 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 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	
Cycle	**A**	**B**	**A**	**B**	**A**	**B**
Specific areas taught	· Online Safety · Lego builders · Technology outside school · Animated Storybooks · Maze Explorers · Grouping and Sorting Unit Spreadsheets · Online Safety and · Coding · Creating Pictures · Questioning · Making Music · Presenting Ideas · Spreadsheets · Coding · Online safety · Spreadsheets · Touch typing · E mail · Databases · Simulations · Graphing · Coding · Online safety · Spreadsheets · Writing for	· Online Safety · Lego builders · Technology outside school · Animated Storybooks · Maze Explorers · Grouping and Sorting Unit Spreadsheets · Online Safety and · Coding · Creating Pictures · Questioning · Making Music · Presenting Ideas · Spreadsheets · Coding · Online safety · Spreadsheets · Touch typing · E mail · Databases · Simulations · Graphing · Coding · Online safety · Spreadsheets · Writing for	• · Online Safety · Lego builders · Technology outside school · Animated Storybooks · Maze Explorers · Grouping and Sorting Unit Spreadsheets · Online Safety and · Coding · Creating Pictures · Questioning · Making Music · Presenting Ideas · Spreadsheets · Coding · Online safety · Spreadsheets · Touch typing · E mail · Databases ·	• · Online Safety · Lego builders · Technology outside school · Animated Storybooks · Maze Explorers · Grouping and Sorting Unit Spreadsheets · Online Safety and · Coding · Creating Pictures · Questioning · Making Music · Presenting Ideas · Spreadsheets · Coding · Online safety · Spreadsheets · Touch typing · E	• · Online Safety · Lego builders · Technology outside school · Animated Storybooks · Maze Explorers · Grouping and Sorting Unit Spreadsheets · Online Safety and · Coding · Creating Pictures · Questioning · Making Music · Presenting Ideas · Spreadsheets · Coding · Online safety · Spreadsheets · Touch typing · E mail · Databases ·	• · Online Safety · Lego builders · Technology outside school · Animated Storybooks · Maze Explorers · Grouping and Sorting Unit Spreadsheets · Online Safety and · Coding · Creating Pictures · Questioning · Making Music · Presenting Ideas · Spreadsheets ·

different audiences · Logo · Animation · Effective Search · Hardware Investigators · Coding · Online safety · Spreadsheets · Databases · Game Creator · 3D Modelling · Concept Maps · Coding · Online	different audiences · Logo · Animation · Effective Search · Hardware Investigators · Coding · Online safety · Spreadsheets · Databases · Game Creator · 3D Modelling · Concept Maps · Coding · Online	Simulations · Graphing · Coding · Online safety · Spreadsheets · Writing for different audiences · Logo · Animation · Effective Search · Hardware Investigators · Coding · Online safety · Spreadsheets · Databases · Game Creator · 3D Modelling · Concept Maps · Coding · Online	mail · Databases · Simulations · Graphing · Coding · Online safety · Spreadsheets · Writing for different audiences · Logo · Animation · Effective Search · Hardware Investigators · Coding · Online safety · Spreadsheets · Databases · Game Creator · 3D Modelling · Concept Maps · Coding · Online	Simulations · Graphing · Coding · Online safety · Spreadsheets · Writing for different audiences · Logo · Animation · Effective Search · Hardware Investigators · Coding · Online safety · Spreadsheets · Databases · Game Creator · 3D Modelling · Concept Maps · Coding · Online	Coding · Online safety · Spreadsheets · Touch typing · E mail · Databases · Simulations · Graphing · Coding · Online safety · Spreadsheets · Writing for different audiences · Logo · Animation · Effective Search · Hardware Investigators · Coding · Online safety · Spreadsheets · Databases · Game Creator · 3D Modelling · Concept Maps · Coding · Online

Progression	**Children are introduced to computers** • Children learn about the key parts of a computer and how they help us in daily life. They learn vocabulary specific to Computing such as mouse, screen and keyboard • They use directional language and specific logical instructions to guide robots around a maze, helping him when he gets stuck, practising this with unplugged activities. **Coding basics** • Children learn about algorithms and how they are instructions to complete a task. They use algorithms to make a character perform actions in 2Code.	**Coding and debugging** • Children learn more complicated coding within 2Code. They make simple computer programmes for entertainment using sequencing and looping of algorithms to complete a task. • They create games which rely on an underlying data system and conditions and comparisons of data using 'if' statements. • In planning and evaluating their programmes they explain why outcomes occur and what likely errors could be. They learn that debugging is the process of fixing	**Consolidation and more complex coding** • Children will create a program that simulates a physical system using decomposition and explore string and text variable types so that the *most appropriate* can be used in programs. This will be achieved through programming a playable game with timers and score pad. **Creating and Analysing** • Children will use the formula wizard to add a formula to a cell to automatically make a calculation in that cell.

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			these errors and can fix unexpected and planned ones. **Introducing databases** - Children use online programmes and systems to further their learning. They research using the internet and present ideas using simple databases and spreadsheets.	- By using a spreadsheet to model a real-life situation and answer questions, the children will use a spreadsheet to investigate the probability of the results of throwing many dice. - Children will develop their skills to include manipulating and using electronic data to create graphs showing the data collected - Children will contribute to a class database around a chosen topic
Key Vocabulary (See individual units for full vocabulary list)	Instruction Code Debug Robot Monitor Internet Technology Computer Internet Mouse	Algorithm Navigate Program Save Open Folder Input / Output Website Keyboard e-safety	Programming Coding Debugging Algorithm Sequences Loops Variable Testing Search engine Cloud Data Software	Software Hardware Component Network Sharing File management Systems Digital Device Virus Security

The first row at the top of the page continues content from the previous page:
- Coding vocabulary expands as the children's experiences with Computing does. They learn about Programmes and what code is, they are introduced to inputs and outputs and how to save and retrieve something