

Computing at St Mary's C of E Primary School



Intent

At St Mary's we want pupils to be independent, forward thinkers and fluent in 'computational thinking'. Technology is everywhere and will play a pivotal part in students' lives. Therefore, we want to model and educate our pupils on how to use technology that reflects our school rules and values: being safe, kind, responsible and respectful.

We want our pupils to be creators and our broad curriculum encompasses computer science, information technology and digital literacy, which reflects this. Our knowledge-rich curriculum has to be balanced with the opportunity for pupils to apply their knowledge creatively, which will in turn help our pupils become skilful computer scientists. When we teach the computing curriculum we hope to develop learners who are resilient, inquisitive, good communicators, critical thinkers and who enjoy problem solving, working independently or in a group.

We understand that preventative methods of online/ social media misuse can be addressed through education, embedded within our school values: Friendship, Respect and Compassion. We encourage children to create a positive digital footprint from the moment they start using technology.

We recognise that technology can allow pupils to share their learning in creative ways. We also understand the accessibility opportunities technology can provide for our pupils. We encourage staff to try to embed computing across the whole curriculum to make learning creative and cross-curricular. We encourage children to take pride in their work and to become competent with a range of tools (hardware, software and APPs) that best express their understanding. Upon leaving St Mary's, we aim for children to become confident users of computing and responsible digital citizens who are ready to meet the challenges of their digital future.



Implementation

We are using the National Centre for Computing Education (NCCE) scheme of work for computing, funded by the Department for Education, which has been adapted to suit the learners at St Mary's Primary School. The Programmes of study have been organised as follows:

Year & Cycle	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Additional Coverage
YEAR 1/2 A	Introduction to Technology	Digital Photography	Digital Paint	Making Music	Grouping Data	Pictograms	Online Safety
YEAR 1/2 B	Technology Around Us	Digital Writing	Moving a Robot	Robot Algorithms	Introduction to Animation	Programming Quizzes	Online Safety
YEAR 3/4 A	Connecting Computers	The Internet	Sequencing Sounds	Events and Actions	Data Logging	Photo Editing	Online Safety
YEAR 3/4 B	Desktop Publishing	Audio Editing	Animation	Branching Databases	Repetition in Shape	Repetition in Game	Online Safety
YEAR 5/6 A	Sharing Information	Communication	Web Page Creations	Spreadsheets	Physical Computing	Selection in Quizzes	Online Safety
YEAR 5/6 B	Vector Drawing	3D Modelling	Video Editing	Flat-File Databases	Variables in Games	Sensing	Online Safety

All resources have been tailored to our school setting in terms of technology we have access to, and programs available. The materials are suitable for all pupils irrespective of their skills, background, and additional needs.

Spiral Curriculum:

The units for key stages 1 and 2 are based on a spiral curriculum. This means that each of the themes is revisited regularly, and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. This style of curriculum design reduces the amount of knowledge lost through forgetting, as topics are revisited. It also ensures that connections are made even if different teachers are teaching the units within a theme.

The curriculum has been written to support all pupils. Each lesson is sequenced so that it builds on the learning from the previous lesson, and where appropriate, activities are scaffolded so that all pupils can succeed and thrive. Scaffolded activities may include extra resources, visual clues or teacher time. The curriculum also offers, exploratory tasks which foster a deeper

understanding of a concept, encouraging pupils to apply their learning in different contexts and make connections with other learning experiences.

Foundation Stage

In Foundation stage, we are using Keychain Computing, a scheme of work that has been created to be engaging and supportive in allowing children to interact with different aspects of the computing curriculum.

Throughout the academic year, children will cover:

Term	Name of Unit	Key Objectives	Key vocabulary
Autumn Term	E-safety and Sequencing	I can put things in the right order (sequencing). I know what to do if I see something on the internet that makes me feel 'funny in my tummy'.	E-safety, Online, internet, sequence, instructions
Autumn Term	A cat on a mat	I can read an ebook. I can navigate an ebook. I can put words in the correct sequence so they make sense. I can drag and drop objects in a game. I can type using a keyboard. I can use a mouse.	Drag and drop, ebook, sequence, mouse
Autumn Term	Music Algorithms	I can create a piece of music. I can write an algorithm. I can debug an algorithm. I can use a mouse or touch screen. I can tinker.	Algorithms, debug, rhythm, music, mouse, touch screen
Spring Term	Algorithm – Coding blocks	I can create an algorithm. I can debug an algorithm. I can follow algorithms. I can drag and drop objects using a mouse or touch screen.	Algorithm, sequence, repeat, blocks, debug, touch screen, mouse
Spring Term	Algorithms – Jam Sandwiches	I can create an algorithm. I can debug an algorithm. I can follow algorithms. I can create a set of instructions.	Algorithm, sequence, blocks, debug

Spring Term	Sorting	I can sort objects into groups. I can put objects in the correct order (sequence). I can arrange objects in height order.	Sort, sequence, order
Spring Term	Patterns	I can spot repeating patterns. I can identify the next object in a pattern. I can make my own patterns. I can create simple rhythms with repeating patterns.	Pattern, repeat
Summer Term	Martha Monkey	I can drag and drop objects. I can count to 10. I can put the days of the week in order. I can read the days of the week.	Sequence, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday
Summer Term	Bees in the garden	I can move my bee around the screen using an algorithm. I understand left and right. I know what a quarter turn is (some may know 90 degrees). I can create an algorithm.	Algorithm, forward, right turn, left turn, 90 degrees, quarter turn
Summer Term	Handling Data	I can count to 20. I keep accurate records. I can make my own pictogram. I can display information in a pictogram. I can read a pictogram and ask questions.	Pictogram, count, tally, information

Impact

We encourage our children to enjoy and value the curriculum that we deliver. Fundamentally, we ask the 'why' and not just the 'how' to explore the depth of each objective within a stimulating environment that encourages children to discuss, reflect and appreciate the impact that Computing has on their learning, development and wellbeing. We encourage regular discussions between pupils and staff to help children realise the right balance with technology being used as a tool for education and pleasure, but also the need for a healthy lifestyle.

Progress opportunities are listed in computing lesson plans and teachers are prompted ensure that misconceptions are recognised and addressed if they occur. Teacher observation, questioning and marked activities help the teacher to see the impact of the lesson and whether there is need to change planning for future lessons. These assessments are vital to ensure that teachers are adapting their teaching to suit the needs of the pupils that they are working with, and teachers are encouraged to change parts of the lesson, in response to pupil assessments. The learning objective and success criteria are introduced in the slides at the beginning of every lesson. At the end of every lesson, pupils are invited to assess how well they feel they have met the learning objective; this gives pupils a chance to reflect on their learning. It is also a chance for teachers to see how confident the class is feeling so that they can make changes to subsequent lessons accordingly.

We encourage learners to give feedback on the curriculum, the units studied and e-safety audits in order to make sure that our learners feel listened to. Pupil voice is captured through discussions, questionnaires and pupil interviews. Throughout their time at St Mary's children will have a comprehensive knowledge of how to stay safe online. This is important in a society which is becoming increasingly dependent on technology and where technologies are rapidly evolving.

