Computing Policy

Date of Amendment: May 2021
Review Date: May 2024

Computing

"Realising the potential of every child within a caring, Christian community"

Intent

Technology and computational thinking are integral parts of the modern day society. Through teaching Computing, we equip the children with the skills needed to both work and play in a world which is increasingly being transformed by technology.

It is our intention to encourage, challenge and enable children to analyse, create, develop and present information in a variety of ways. Computational thinking is encouraged across the curriculum and children use aids such as iPads to further enhance their learning in the classroom. We offer enjoyable opportunities for the children to freely explore and interact with a range of apps and software. Lessons are designed to encourage creativity and enable the children to achieve at their own level whatever their ability or background.

With technology becoming so readily available it is important the children understand how to use it safely. We ensure we are aware of any recent developments and work closely with parents to create relevant E-Safety lessons whereby children are encouraged to openly share and discuss their own experiences without judgement.
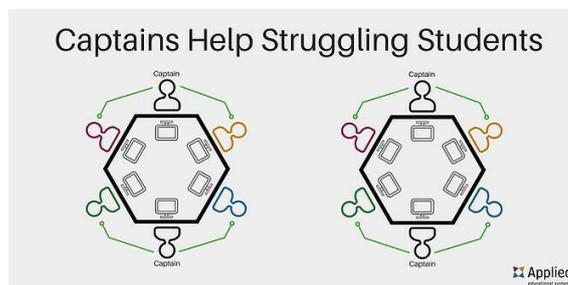
Curriculum

At St Thomas' we follow the objectives outlined in the National Curriculum (2014) set out under the following strands:

- Pupils can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- Pupils can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- Pupils can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- Pupils are responsible, competent, confident and creative users of information and communication technology

To meet these objectives pupils are taught to:

- 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
- 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

The majority of the children should be working towards the same outcome with the lower ability being provided with scaffolding to support them and the higher ability being challenged within the objective. Differentiation is achieved through: dialogue and support, varied pace; modelled examples and additional resources; independent exploration and opportunities for deeper thinking. For those children who are very secure, opportunities arise for them to take on a 'teacher' role in the classroom.

(Model provided by Applied Educational Systems)

Computing across the curriculum

Class teachers have the opportunity to sign up to use the Computing Suite for mathematics and English with their class, whenever this is appropriate. The extra PCs in the classroom can also be used to support learning as well as iPads from the year group trolleys, in addition to the interactive display screen for whole class teaching. The school holds subscriptions to Espresso, Purple Mash, Lexia and Times Table Rock Stars, where teachers can choose activities to directly support the children within their class.

As well as making its own distinctive contribution to the primary curriculum, Computing contributes to other subject areas. Explicit links are made through the Scheme of Work to other subject areas; similarly, other Schemes of Work make links regarding how Computing is used. All curriculum leaders recognise the need to include digital devices as a tool for learning and resources are regularly added to the school network. The weekly planning meetings offer staff opportunities to discuss how Computing may be used.

In addition, all staff receive regular training and updates from both the Subject Leader and external speakers on how to incorporate Computing into all aspects of children's learning. As a minimum expectation, Computing opportunities are planned at least twice in each Scheme of Work, whatever the subject. However, this is often far more regular, with staff using the resources available to support, scaffold and propel students.

Personal, Social and Health Education and Citizenship

The Computing Scheme of Work provides opportunities to promote PSHE and Citizenship in a number of ways. These include the opportunity to:

- contribute to debate by working with others;
- gather information and make choices by using the Internet and e-mail with their peers and others;
- teaching responsible use of the internet
- learn social skills and a sense of social and moral responsibility, for example through collaborative writing.

E safety forms a large proportion of the Computing Schemes. St Thomas' recognises that it is crucial for these lessons to be relevant and impactful. With this in mind, the Computing Subject Leader ensures schemes are regularly updated based on recent press releases and any current challenges children may be experiencing in school.

Implementation

Computing is taught using a blocked curriculum approach with classes working in the Computing Suite for one hour per week. This ensures children are able to develop depth in their knowledge and skills over the duration of each of their Computing topics. Schemes are based on a variety of engaging resources such as Twinkl Computing, Purple Mash and Switched On Computing and they are often richly linked to engaging contexts in other subjects and topics. We have a Computing suite and two class sets of iPads, to ensure that all year groups have the opportunity to use a range of devices and programs for many purposes across the wider curriculum, as well as in discrete Computing lessons.

Employing cross-curricular links motivates pupils and supports them to make connections and remember the steps they have been taught. The implementation of the curriculum also ensures a balanced coverage of computer science, information technology and digital literacy. The children will have experiences of all three strands in each year group, but the subject knowledge imparted becomes increasingly specific and in depth, with more complex skills being taught, thus ensuring that learning is built upon.

The Key Stage Two programme of study will be taught in order for children to learn the knowledge, skills and understanding that pupils of different abilities and levels of maturity are expected to have by the end of this key stage.

A range of teaching and learning strategies will be used to develop pupils 'knowledge, skills and enthusiasm. Progression is built into the scheme and many units build upon skills acquired in earlier work. As Years 3&4 and 5&6 are grouped together it is important that the level of skill should be higher in Years 4 & 6 so that progression is maintained. Pupils will be taught as a whole class and in small groups. In many lessons some individual intervention may also be used where appropriate (see Computing Progression).

Special Educational Needs and Disability Equality Scheme

At St Thomas of Canterbury Church of England Junior School we recognise our duties and responsibilities under the Disability Discrimination Act as outlined in our Disability Equality Scheme and Action Plan (December 2007). It is our aim that through specific and accurate planning, resource allocation, differentiated teaching and use of adult intervention and support (where necessary), that every child, irrespective of disability, will have full access to the curriculum and feel and be enabled to participate actively in developing to their full potential their skills, knowledge and understanding. We will ensure that all 'reasonable adjustments 'are made to help both children and adults with identified special needs and disabilities to participate in the Computing curriculum.

Planning activities will take into account differentiation and meeting the needs of individual children. We also appreciate that many children with special needs excel in their Computing lessons, where appropriate this is celebrated; these children often take on the role of coach to their peers which builds self-confidence and belief. Individual lesson plans are crafted for those children with an EHCP in the weekly, team planning sessions. The class teacher also works alongside their identified teaching assistant to support and extend their learning. Further details can be found in the latest SEND policy.

Mastery in Computing

At St Thomas', mastery applies to all children, as we believe that all children can attain this. Mastery in Computing means acquiring a deep, long-term, secure and adaptable understanding of the subject. It is demonstrated by how skilfully a child can apply their learning in Computing to new situations in unfamiliar contexts. A positive teacher mind-set and strong subject knowledge are key to student success in Computing. (Model Provided by I Compute UK)

In order for pupils to gain Mastery in Computing teachers must consider the following:

Success - Every child can enjoy and succeed in Computing when offered appropriate learning opportunities. At St Thomas' we place great emphasis on growth mindset and problem-solving approaches that enable pupils to develop resilience, persistence and confidence. All children are encouraged to believe in their ability to master Computing and are empowered to succeed through curiosity, tinkering and perseverance.

Depth - Pupils are taught through whole-class interactive teaching with pupils working together on the same lesson content at the same time. Concepts are developed in logical steps with particular attention given to fundamental concepts. This ensures that all children can master concepts before moving to the next stage, with no pupil left behind.
Pupils are given the time and opportunity to fully understand, explore and apply skills and ideas in different ways, in different situations and in different subjects. This enables pupils to fully grasp a concept and understand the relevance of their learning.

Computational Thinking - Developing computational thinking lies at the heart of the National Curriculum for Computing and involves learning how people solve problems; changing what looks like a difficult task into a simple one that we know how to deal with. These skills are embedded into all of our lessons, through teacher modelling and with targeted questioning.

Display

Display is an important means of achieving quality in work. It is also a means of promoting communication and sense of achievement. Displays around the school can convey the message that the children and staff are confident and competent with Computing. We also have specific Upper and Lower School display boards in the Computing Suite to promote the current topic that the different year groups are working on.

Partnership with Parents

At St Thomas' we believe it is vitally important to have parents on board when covering Computing, particularly E-Safety. We aim to provide support for our parent community by doing the following:

- Updating parents with any appropriate documentation and/or press releases regarding E-safety.
- Organising training sessions where appropriate.
- Informing our parents of possible challenge their children may face linked to social media etc.
- Communicate with parents where appropriate, when we are concerned about a child's use of technology.

Impact

Assessment, Recording and Reporting

Assessment will be ongoing and will include observation, questioning and marking of work. Weeks at the end of each unit are set aside to assess the children's skills progression against the key skills taught in a unit of work. Assessment will be in line with the whole school assessment policy. Evidence of coverage and standards will be retained by the Computing Curriculum Subject Leader.

In many instances it will be preferable to keep work simply saved on the network rather than print out. Curriculum coverage and individual attainment will be reported to parents, colleagues and schools in the next phase. Alongside teacher assessments, children should also take an active role in evaluating their own learning and progression.

We also use information technology as a staff to monitor and record assessment information.

Role of the Curriculum Leader

The curriculum leader co-ordinates the monitoring of the teaching and learning of Computing within the school. Evidence used to inform such evaluations includes:

- teachers' plans;
- lesson visits – include formal observations and informal drop-ins;
- interviews with children and staff;
- sampling of work;
- teacher assessments;
- Target Tracker data;
- discussion with individual staff (with assistance as needed).

The curriculum leader will conduct regular discussions with staff on their needs in Computing. Issues that occur as a whole-school issue will be targeted for development through professional development meetings and INSET days. These will take place in a negotiated programme alongside other curriculum priorities.

The needs of ECTs and new members of staff will be assessed by the curriculum leader as they join the school. The Computing curriculum leader will introduce the new member of staff to the policy, resource materials as well as assessment and recording systems.

Support staff will be given guidance by the SENCO, Computing curriculum leader or class teacher on the teaching and assessment of activities for the groups or children that they manage. The support staff will attend relevant INSET days or sessions when necessary.

The curriculum leader controls the budget for resourcing Computing. The amount allocated is decided on a yearly basis and is dependent on the priorities in the School Development Plan.

Role of the governing body

Every governor takes a special interest in at least one curriculum area or focus in the school. At present there is a named governor for Computing who supports the curriculum leader and keeps up to date with policies, strategies, procedures, etc. through regular visits.

These visits are used to become familiar with and monitor Computing teaching, visit lessons first hand and to promote levels of accountability, challenge and support. Following a governor visit, a written report is submitted to the Computing Curriculum Leader/Headteacher and discussed at a full governing body meeting.

Review

The policy will be reviewed at least every 3 years, or as new guidance becomes available to schools from the Local Authority (LA) or Department of Education (DfE).

Policy reviewed: **May 2021**

Next policy review date: **May 2024**