



'Love one another as Jesus loved us' (John 13 v 34-35)

Computing at St Mary's CE Primary School

Computing Curriculum Rationale

At St Mary's CE we are technologists! We want the children at our school to love computing and technology. We want our children to aim high, be ambitious and grow up wanting to be software programmers, coders or website creators. Our vision at St Mary's CE Primary School is to encourage and nurture the growth of every individual and their uniqueness, so that all flourish and become all that they can be and all that God made them to be.

The computing curriculum has been carefully designed and sequenced so that our children develop their computing knowledge and capital. We want our children to remember their computing lessons in our school and embrace the computing opportunities they are presented with! Previously, children in Year 4 were set a challenge of using Lego Wedo to create a 'Goal Kicker' or 'Goal Keeper' lego model and then create a code for their model to either save a goal or score a goal. Children would adapt their code to improve their model's goal kicking or goal saving. Once models were completed, a competition was held between each 'Goal Kicker' and 'Goal Keeper'. Children enjoyed the competitive element and couldn't wait to see which model would win the match. Bringing computing alive is important at St Mary's CE Primary School.

Curriculum Intent

The computing curriculum is ambitious and allows our children to become independent and resilient – like all curriculum areas.

We want to equip our pupils with all the statutory requirements of the computing National Curriculum and also prepare them for the opportunities, responsibilities and experiences in the next stage of their education and beyond. We want our children to learn from other cultures, respect diversity, co-operate with one another and appreciate what they have. We achieve this by providing a strong SMSC curriculum, with British Values and our core values placed at the heart of everything we do. We celebrate innovation and the freedom of choice that British Society represents and as a result our pupils are encouraged to become free thinkers, with ambitious ideas. We encourage and celebrate this individuality. This often feeds into the computing curriculum. For example, every year we take part in 'Safer Internet Day' to promote the safe and positive use of digital technology for children and young people. In computing lessons we remind children to always behave respectfully when online and encourage and inspire them to be good digital citizens. We also enrich their time in our school with memorable, unforgettable experiences and provide opportunities to engage and intrigue our pupils. For example, every year Year 6 pupil have the opportunity to visit the 'Crucial Crew' to develop valuable life skills and to learn about safety in both a real life and virtual context. We have also had visits from Greater Manchester Police and HM Prison service with their 'Actions Have Consequences' workshop, again giving pupils the opportunity to understand dangers and how to keep themselves safe. Previously, KS2 children have had the chance to take part in 'Darth Vader' and 'Are You A Superhero Or A Sheep?' sessions with Ellen Weedon, Children's Safeguarding Training Officer for Oldham. We firmly believe that it is not just about what happens in the classroom, it is about the opportunities we offer to really inspire our children.

Curriculum Implementation

We have just completed a second review of the computing curriculum and this will become an annual task. In this second review, the computing curriculum has been carefully revisited to ensure there is a clear progression of knowledge and vocabulary, embedding key aspects of learning as aspects are revisited. The medium term plans are under review to ensure that the progression document is clearly reflected in the sequence of learning within any given topic. The assessment points and milestones are being defined and developed to reflect the key learning required in each year group. This will ensure the way computing is taught throughout our school follows a consistent structure.

With the reviewed curriculum pupils explore and practise the practical skills and apply key knowledge needed to be fully immersed in the topic. Computing subject specific characteristics, which we expect the children to demonstrate, have been developed. These characteristics underpin all work in computing.

These characteristics are:

- a passion for and a commitment to the subject
- 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

Subject Leads have devised whole school subject long-term curriculum plans, which identify when the different subjects and topics will be taught across the school and across the academic year. All subjects are taught discretely but staff make meaningful links across subjects where appropriate. They link prior knowledge to new learning to deepen children's learning. For example, in Year 6 when the children create non-linear powerpoint presentations with hyperlinks they are building upon the knowledge and skills taught in Year 3 and Year 4 when they made powerpoint presentation with images, sounds and animation effects. Our children are taught connected knowledge.

Class Teachers have devised year group long-term curriculum plans which outline when the different subjects and topics will be taught across the academic year within the year group.

Medium term plans have been developed and continue to be refined to show the sequence of lessons taught within each topic. These set out the learning challenges for each lesson and closely reference the key learning, vocabulary and progression document.

Staff teach a weekly computing lesson every week. This helps to ensure sufficient time is allocated to computing and that the subject matter can be revisited. We believe that by constructing our curriculum this way, we improve the potential for our children to retain what they have been taught, to alter their long-term memory and thus improve the rates of progress they make.

Curriculum Impact

We use both formative and summative assessment information in every computing lesson. Staff use this information to inform their short-term planning and support. This helps us provide the best possible support for all of our pupils, including the more able. The progression document and the assessment points, once finalised, for each year group ensure that skills in computing are progressive and build year on year.

Our aim is for staff to use computing formative assessment methods to systematically assess what the children know as the topic progresses and inform their future planning. This formative assessment is then used to inform summative assessment judgements for each topic.

Assessment information in computing is collected once a year and analysed as part of our monitoring cycle. This process provides an accurate and comprehensive understanding of the quality of education in computing. A comprehensive monitoring cycle is developed at the beginning of each academic year. This identifies when monitoring is undertaken. Monitoring in computing includes: computing folder scrutinies, lesson observations and/or learning walks, pupil/parent and/or staff voice. All of this information is gathered and reviewed. It is used to inform further curriculum developments and provision is adapted accordingly.

**At St Mary's CE Primary School, we are
TECHNOLOGISTS!**

Computing programmes of study:

Key Stages 1 and 2

Purpose of study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems

- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Subject content – Key stage 1

Pupils should be taught to:

- 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.

Subject content – Key stage 2

- 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

