St Mary's Catholic Primary School

Computing Policy

We grow and learn in the footsteps of Jesus

Approved by	
Name:	Claire Davidson
Position:	Reading Coordinator
Signed:	Claire Davidson
Date:	February 2023
Proposed review date[2]:	February 2024
Governor	Quality of Education Committee

Computing Policy

INTENT

Aims and objectives

Computing is everywhere and a very current, ever evolving subject. It is therefore vital that every child at St Mary's Catholic Primary School is immersed in an exciting, rich, relevant and challenging computing curriculum which sets up an extensive toolbelt of knowledge and skills to cope and thrive in a quickly developing technological world.

At St. Mary's Catholic Primary School, we believe that every child should have the right to a curriculum that champions excellence; supporting pupils in achieving to the very best of their abilities. We understand the immense value technology plays not only in supporting the Computing and whole school curriculum but overall in the day-to-day life of our school.

We believe that technology can provide: enhanced collaborative learning opportunities; better engagement of pupils; easier access to rich content; support conceptual understanding of new concepts and can support the needs of all our pupils.

Alongside and throughout all of our teaching and learning of Computing is a related and up to date online safety curriculum which is progressive from Early years up to Year 6. Online safety is made apparent and threaded throughout computing lessons and other curriculums to help embed this learning in the day to day lives of the pupils. (See our Safeguarding Policy for procedures, filtering, data policy and acceptable use and monitoring of online safety).

We aim to provide a high-quality computing education which will help pupils understanding of new and up to date computing programs and online trends to equip them with a well-rounded and highly capable set of skills going forward through their time at St Mary's Catholic School, at home and onto to their next educational setting.

Pupils in Early Years will:-
Develop confidence, control and language skills through opportunities to 'paint' on the interactive board/devices or control remotely operated toys.

Experience learning environments which feature ICT scenarios based on experience in the real world, such as in roleplay

Use outdoor exploration is an important aspect, supported by ICT toys such as metal detectors, controllable traffic lights and walkie-talkie sets

Have the opportunity to use recording devices can support children to develop their communication skills. This is especially useful for children who have English as an additional language.

Pupils in Key Stage 1 will

• Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.
• Write and test simple programs.
• Organise, store, manipulate and retrieve data in a range of digital formats.
• Communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond school.

Pupils in Key Stage 2 will:-
• Design and write 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; generate appropriate inputs and predicted outputs to test programs.
• Use logical reasoning to explain how a simple algorithm 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 worldwide web; and the opportunities they offer for communication and collaboration.
• Describe how Internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.
• Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

IMPLEMENTATION

Teaching and learning style

Computing is a foundation subject in the curriculum. Its teaching focuses on enabling children to think using problem solving, systematically, logically using reasoning skills and to be digitally literate. We place an emphasis on the resources provided in school to enable teachers with the support and training needed to teach computing skills in a wide range and varied format and also to provide children a variety of resources and equipment to use and apply their skills in computing and in a cross curricular setting.

In each key stage, we give children the opportunity to apply their computational skills to various subjects to enhance their understanding and to show that computers can open a new insight and way to aid their learning experience. Children's abilities are catered for using peer to peer support, teacher support and challenges given to deepen their understanding and further enthuse their learning.

We believe that Computing, being a vast and board subject, needs to be taught without limitations to just one particular scheme of work. Concepts in the computing curriculum can be abstract and prove difficult to understand in a deep and meaningful way, which is why, here at St Mary's, we believe in being flexible with our computing plans, to fully explore the computing language used in the national curriculum. We use 'unplugged' computing

lessons, from Barefoot Computing Online, Code – it and CS unplugged, which provides lessons which are 'non-computing' to introduce new concepts and bring abstract concepts to life. Building in 'unplugged' computing opportunities for each concept ensures time is spent at the start and in amongst the computing curriculum timeline, to develop conceptual understanding away from the screen, then develop, deepen and embed this learning when applying to computing sessions. It is of most importance to focus on the understanding of the concept and through the use of 'unplugged' sessions alongside computing sessions from purple mash, this links learning to real life and helps further their understanding further. The D.A.R.E.S project (MrP ICT) is an innovative approach to teaching computing, encouraging children to be critical thinkers, problem solvers and computational thinkers while creating purposeful content to demonstrate how learning can be applied to the wider curriculum. These projects may take a half term to complete and are an accompanying resource alongside the Purple Mash Computing Curriculum when the teacher judges the class ready to apply skills and widen the children's learning experiences in a particular area.

We use the Purple Mash Computing scheme of work which provides a wealth of support for teachers and pupils. Through this scheme, we carry out curriculum planning in computing in three phases (long-term, medium-term and short-term). The long-term plan is split into three key aspects of computing; Computer Science, Information Technology and Digital Literacy. These aspects contain statements with cover the National Curriculum objectives and the progression of skills coverage for each year group. The medium-term plans are mapped out as year group overviews which class teachers can alter according to any cross curricular links to enhance their planning and teaching. They use the topics being taught as a stimulus and create a series of sessions which link to this and cover the range of skills needed in accordance to the National Curriculum. The short-term plans list the specific learning objectives and expected outcomes for each lesson. These are provided as units which cover specific skills with resources and activities and guidance for scaffolding children's learning for their needs and opportunities for independent tasks for challenges and innovation.

The Framework we use for lesson sequence is the PRIMM approach to planning and delivering lessons. This approach is used in the unplugged computing activities and in all Purple Mash Computing plans. The PRIMM approach is as follows:

P – Predict
R – Run
I – Investigate
M – Make
M – Modify

From this sequence, children will be able to independently or collaboratively 'USE, MODIFY AND CREATE' programs from their own coding practise and understanding of concepts when they have developed a more concrete understanding. Creating projects through the D.A.R.E.S projects, adds variety and opportunities to apply their learning to other areas curriculum and develop their skills in programs. Lessons may have a high degree of direction through the use of modelling and guidance using worked examples, some may use more of an exploratory approach and other lessons may require more scaffolding or be more active

(hands on). Each lesson has opportunities to stretch and challenge or support children to access the learning for a diverse range of learners.

Following the scheme of work from Purple Mash allows for a consistency of lesson sequence and plans, however it is recognised by staff and the school, that where there is a need for certain units/concepts to be revisited, such as coding, classes are able to plan in 'revisit' lessons called 'Crash courses' provided alongside the Purple Mash Scheme or teachers can plan for mini Coding review lessons. These lessons for revisiting concepts are short term, planned sessions, by the teacher's assessment and judgement of the computing curriculum of their year groups which have shown from analysis that there is a need to reinforce and keep plugging any gaps in certain topics. Having these 'refresher' sessions will unlock prior learning but also allow embedding of skills which are deemed challenging by the teacher or Pupils and give an opportunity for further advancement of skills for those children who are already showing existing skills.

At our school, we teach computing to all children, whatever their ability and individual needs. This accords with the school's curriculum policy of providing a broad and balanced education to all children. This includes children of all abilities, social and cultural backgrounds, those with disabilities, EAL speakers and SEN statement and non-statemented. We place particular emphasis on the flexibility technology brings to allowing pupils to access learning opportunities, particularly pupils with SEN and disabilities. With this in mind, we will ensure additional access to technology is provided throughout the school day and in some cases beyond the school day.

IMPACT

Children will demonstrate their ability in computing in a variety of different ways. Younger children might, for example, use role-play to act out their understanding of certain concepts which could be videoed or photographed as evidence or use the interactive devices online (Mini Mash or paint tool on iPad). Further into the older stages of school, children use various ways to express their understanding of computing by applying their coding skills to various programs, use of Green screen to act out in role as a historical figure to give a sense of authenticity to their understanding (cross curricular links) or use robotic simulations to show their understanding of physical computing and computer networks. Teachers will assess children's work by making informal judgements during lessons. On completion of a piece of work, the teacher assesses the work and uses this information to plan for future learning. Written or verbal feedback is given to the child to help guide his or her progress. Older children are encouraged to make judgements about how they can improve their own work.

Throughout a unit of work, teachers assess pupil's progress using the 2Simple Computing Assessment Tool for Years 1 to 6. The tool enables staff to accurately identify attainment of pupils through the detailed exemplification it has for each key learning intention. We use these grades/colours as a basis for assessing the progress of the child, and we pass this information on to the next teacher at the end of the year. Teachers will make a judgement at the end of each computing unit of work on whether pupils are working below age related expectations, at age related expectations and above age-related expectations. This information will be recorded on the school's Insight tracker.

The computing subject leader will keep samples of children's work in a portfolio, either via seesaw or physical work and use evidence from the electronic work samples from children's portfolios on Purple Mash. Teachers enter judgements about the samples into the 2Simple Computing Assessment Tool. These will be monitored and reviewed on a regular basis by the subject leader.

Monitoring and review

Monitoring standards of teaching and learning within Computing is the primary responsibility of the Computing Leader. All teachers are expected to keep an online portfolio or track children's work using Purple Mash. This portfolio must contain work samples from all areas of the curriculum taught for the year group. Details of monitoring and evaluation schedules can be found in the Computing Action Plan and School Monitoring Schedule.

Support and monitoring will be provided by the Computing lead who will:

- supports colleagues in their teaching, by keeping informed about current developments in computing and by providing a strategic lead and direction for this subject;
- gives the headteacher an annual summary report in which she evaluates the strengths and weaknesses in computing and indicates areas for further improvement;
- uses specially allocated regular management time to review evidence of the children's work, and to observe computing lessons across the school.

This policy will be reviewed at least every year due to the fast changing nature of this subject.

Appendix 1 – Computing Long Term Plan – progression of Skills
Appendix 2 – Computing Links to enhance learning at St Mary's Catholic Primary School