St Anne's CE (Aided) Primary School

Computing Policy

Our School Vision

St Anne's CE (Aided) Primary School is a happy vibrant school where diversity and individuality are celebrated. We are passionate in our pursuit of excellence in all aspects of school life. We nurture and inspire children to develop confidence and resilience in an environment where efforts are valued and all children flourish.

Rationale

This policy reflects our school's commitment to an inclusive, creative and exciting curriculum, based on our Quality First Teaching Commitment. We believe that Computing makes a valuable and distinctive contribution to children's education. Knowing how computers work is a key life skill. In an increasingly digital world there now exists a wealth of software, tools and technologies that can be used to communicate, collaborate, express ideas and create digital content. The use of IT, and the skills necessary to become digitally literate, will enable children to participate fully in the modern world.

Purpose of Study (*National Curriculum*)

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 children 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, children are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that children 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.

Knowledge and Understanding

The children's understanding and knowledge of computing will be broadened through the teaching of the following key elements:

- Using Technology
- Algorithms and Programs
- Data Retrieving and Organising
- E-Safety
- Communicating / Presentation

Subject Content

EY

Understanding the world

In the EY, developing children's understanding the world involves guiding children to make sense of their physical world and their community. Children are given a broad, play-based experience of IT and computing in a range of contexts, including off-computer activities and outdoor play. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them – including how technology and computing play a role in our lives. Early Years' learning environments should feature ICT scenarios based on experience in the real world, such as in role play.

In addition, their understanding of our diverse world will be fostered with particular reference to technology and its uses. As well as building important knowledge, their familiarity with words will be extended to support their understanding in using technology. Children will gain confidence, control and language skills through opportunities such as 'programming' each other using directional language to find toys/objects, creating artwork using digital drawing tools and controlling programmable toys. Enriching and widening children's vocabulary will support later computing.

Outdoor exploration is an important aspect and using digital recording devices such as video recorders, cameras and microphones will support children in developing communication skills. This is particularly beneficial for children who have English as an additional language.

Key Stage 1

Children will 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.

Key stage 2

Children should be 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.

Computing Curriculum Implementation

Teachers plan for their class using the 'Computing Curriculum and Progression' document. The progression document ensures curriculum coverage and that knowledge and skills are built upon from one-year group to the next.

Our Computing Curriculum is designed in a way that allows pupils to transfer key knowledge to long-term memory; it is sequenced so that new knowledge and skills build on what has been taught before and towards defined end points.

Our key principles of implementation include:

- Teachers have expert knowledge of the subjects they teach;
- Teachers present key concepts clearly and invite appropriate discussions;
- Teachers check pupils' understanding effectively, identifying and correcting misunderstandings;
- Teachers ensure that pupils embed key concepts in their long-term memory and apply them fluently;
- Teachers enable pupils to transfer key knowledge to long-term memory, sequence the learning and ensure that it is building towards the defined end points;
- Teachers use assessment to check pupils' understanding;
- Teachers use assessment to help pupils embed and use knowledge fluently, develop their understanding, and not simply memorise disconnected facts.

Teaching and Learning Strategies

Teachers should provide balance in teaching approaches and identify suitable progression in knowledge, understanding and skills across each planning stage to continue to challenge pupils.

Teachers should make links between units of work and encourage children to use previous knowledge in approaching new work.

A variety of teaching methods best suited to activities and interests of the children will be used. These may include:

- Individual and group enquiry
- Visits from computing specialists
- Use of Chromebooks and iPads
- Use of other online material such as Scratch
- Use of other computing software such as Google Suite/Classrooms in addition to programs on Purple Mash and windows operating systems.

Resources

Resources specific to individual topics are kept in classrooms. Licenses are bought for the software used across the school. Resources are audited, managed and serviced by our IT consultants, Fingertip Solutions. Esafe also monitor the safe use of school equipment and the internet.

Assessment

School policies on assessment and feedback apply to Computing. Refer to Assessment and Feedback Policies for procedures regarding daily tasks. Assessment of Computing at both KS1 and KS2 will be based on teachers' judgments and all recording should be simple and straightforward

through subject specific feedback. Progress will be measured against statements given on the Computing Curriculum Progression document which will allow for monitoring of progress within and across year groups.

Subject Leadership

The Computing Subject Leader is responsible for monitoring curriculum coverage and reviewing medium-term plans for each year group as appropriate. Monitoring of the quality of Computing education is carried out by the subject leader through an allocation of support and development time. The subject leader produces an annual action plan identifying targets for future action which may form part of the School Impact Plan.

Equality

In accordance with the school's SEND Policy and our Quality First Teaching Commitment all children are given work suitable to their age, aptitude and ability.

Children can:

- Be taught concepts through discussion, concrete examples and practical activities.
- More able pupils may need open-ended tasks which enable them to tackle more complex issues.
- Understand more difficult concepts.
- Deepen and broaden their knowledge and understanding of the computational feature they are studying.
- Use a wider and more demanding range of sources.

A minority of children will have particular teaching and learning requirements which go beyond the provision for that age range and if not addressed, could create barriers to learning. Teachers must take account of these requirements and plan, where necessary, to support individuals or groups of pupils to enable them to participate effectively in the curriculum and assessment activities. During any teaching activities, teachers should bear in mind that special arrangements could be made available to support individual pupils. This is in accordance with our SEND policy.

SMSC and British Values

As part of moral and social development, Computing provides opportunities for discussion as to what is right and wrong, fact or fiction and safe or unsafe. Computing also allows opportunities for collaborative learning, enabling pupils to co-operate together.

CPD

CPD is determined by the needs of staff and the availability and suitability of courses offered.

Cross Curricular

There are many cross-curricular links to ensure pupils are able to see the subject and its uses in different contexts. This could be through links with:

- Literacy – e.g. word processing, film making, presentation software, blogging/vlogging, email
- Maths/Science- databases, spreadsheets, graphing, coding
- RE – effective searching
- History/Geography – e.g. effective searching, digital mapping, fake news, historical bias and propaganda
- Art – e.g. digital art packages

- DT – technical design packages
- PSHE – digital citizenship, respect online, self-image/self-identity

Health and Safety

We take all necessary measures to ensure both staff and pupils are aware of the importance of health and safety.

Both staff and pupils are trained to handle electrical equipment correctly including how to power off and on. Pupils are reminded about the dangers of electricity and the danger signs to look out for. Adequate displays and warning signs are strategically placed around the school to reinforce health and safety.

Security

- The ICT and computing technician /coordinator will be responsible for regularly
- updating anti-virus software.
- Use of ICT and computing will be in line with the school's 'acceptable use policy'.
- All staff, volunteers and children must sign a copy of the schools AUP.
- Parents will be made aware of the 'acceptable use policy' at school entry
- All pupils will be aware of the school rules for responsible use on login to the
- network and will understand the consequence of any misuse.
- The agreed rules for safe and responsible use of ICT and computing and the internet will be displayed in all ICT and computing areas