-HAYDOCK ENGLISH MARTYRS' CATHOLIC PRIMARY SCHOOL

Lighting the Flame for Life-Long Learning

COMPUTING POLICY

Aims & Objectives-Intent

At English Martyrs' Catholic Primary School, we value the individuality of all our children and aim to promote a life-long curiosity and love of learning. As we live in a technological world, we aim to equip our children with the confidence and capabilities to meet new challenges within an ever-changing society. We want children to be independent problem solvers and to apply their skills to all curriculum areas. Therefore, we map out the long-term plan for computing using the National Curriculum and cross curricular link when possible. This helps to develop and apply other skills using a computing platform. 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. Our Computing curriculum also ensure that pupils become digitally literate – able to use, express themselves and develop ideas through information and communication technology – at a level suitable for the future workplace and as part of the digital world. Finally, we aim to encourage our children to consider their role within the wider world through online safety; teaching about their online reputations, relationships and how to manage online information. We hope to teach our children how they can make a positive impact to their online world. We want to keep our children safe by providing them with the skills to deal with online usage and know what to do if they feel unsafe. We hope that by covering these areas throughout the different year groups and carefully planning a long-term overview we can build on the children's previous knowledge in a consistent and progressive manner.

We recognise the importance of computing as a form of communication. We provide a high-quality computing education that engages and inspires pupils to develop skills to increase their self-confidence, creativity and sense of achievement. As pupil's progress, they critically engage with digital learning and use prior knowledge to explore new strategies.

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 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

In key stage 1 pupils are 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

In key stage 2 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.

EYFS: Pupils should be taught to:

- Follow instructions as part of practical activities and debug if things go wrong.
- Experiment with programming a robot such as BeeBot.
- Give simple instructions.
- Operate a camera or iPad to take photos.
- Recognise and talk about a range of technology in home and school.
- Know what a keyboard and mouse is.
- Use a simple paint tool to create digital art.
- Begin learning some rules to follow to keep us safe online.
- Know what to do if they come across something that worries them or makes them feel uncomfortable.

Teaching & Learning

At English Martyrs Catholic Primary School, we make computing an enjoyable learning experience. We encourage children to participate in a variety of technological experiences through which we aim to build up the confidence of all children. Teaching focuses on developing the children's ability to develop, analysis, evaluate and readdress their learning and skills.

Implementation

We meet the National Curriculum expectations for Computing through our scheme of work – NCCE and elements of Barefoot in EYFS. Through our curriculum overview, we map out the computing curriculum over a two-year cycle to ensure coverage throughout the year and key stage. We deliver computing lessons weekly using Medium Term plans to support our planning. In addition to standalone lessons, children have the opportunity to use supplementary digital platforms such as TTRockstars, Mathletics and IDL to support their learning in other topics such as maths and English.

We recognise that there are children of widely different historical abilities in all classes, so we provide suitable learning opportunities for all children by adapting the intended curriculum to meet individual needs where appropriate. We achieve this in a variety of ways by:

- quality first teaching
- teach – task activities – breaking learning into chunks
- retrieval and 'think harder' activities
- scaffolding
- pre-teaching vocabulary and knowledge
- using word banks, sentence stems and oral rehearsal

- setting open-ended tasks which could have a variety of responses
- setting tasks of increasing difficulty (not all children complete all tasks)
- providing resources depending on the ability of the child, including providing 'hands-on' experiences
- allocation of additional time for completion of tasks where appropriate
- using learning support assistants to support the work of individuals or groups of children
- we also provide technology (when required) to our SEND children within school to support their learning.

Curriculum Planning

The Schemes implemented support all the requirements of the National Curriculum.

We carry out the curriculum planning in computing in three phases: long-term, medium-term and short-term. The long-term plan maps out the units covered in each term during the key stage.

Our medium-term plans, adopted from NCCE, give details of each unit of work for each term. They identify learning objectives, activities, adaptations and outcomes for each unit, and ensure an appropriate balance and distribution of work across each term.

Class teachers plan for individual Computing sessions as part of weekly planning and computing skills may be taught through cross-curricular links with other subjects, this is more specific to the Information Technology strand of the curriculum. The weekly plan lists the specific learning objectives for each lesson and detail how the lessons are to be taught, adapted and assessed. We plan the activities in computing so that they build upon the prior learning of the children. We use our progression and memorable knowledge document to support teaching and learning.

Computing contributes to teaching and learning throughout the school. All teachers have access to an Interactive Whiteboard which allows the teacher to use resources such as software, video clips and websites to engage the children in learning. Teachers are also able to incorporate the use of Computing equipment into their planning. We also have links with a local computing hub who can provide further equipment, for example micro bits and crumbles, to enhance the children's experiences. A class set of iPads are accessible for use across the curriculum to complement and enhance all areas of teaching and learning.

Expectations

It is our responsibility as teachers to offer each child the opportunity to participate in active computing. There is a 'Computing Skills' document available to show the expected progression within each year group.

Cross Curriculum Links/ Contribution of subject to other curriculum areas.

Our school has developed a whole school topic-based curriculum based on a two-yearly cycle. This enables computing to be taught through other subjects as well as individual computing lessons. The use of computing throughout the curriculum can be hugely valuable in supporting and promoting learning.

English

Computing contributes significantly to the teaching of English in our school. Children develop their language skills through discussion, evaluating and readdressing their work. Computing is also used to stimulate discussion or creative writing. Through working with others, children develop their ability to communicate ideas effectively and learn how to present their ideas in a clear and concise manner.

Mathematics

Computing contributes to the teaching of mathematics through many aspects including data analysis, data logging, creating formulas and understanding directions and angles. We also use several digital methods to support learning in mathematics for example Mathletics and Times Tables Rock Stars.

Spiritual, Moral, Social and Cultural Development

Through computing we develop children's understanding of E safety which is an essential aspect of safeguarding (See Safeguarding policy). As part of the Computing curriculum children learn about safe and responsible use of ICT, in particular when using email, social media and the internet. We feel it is important to address difficult subjects such as Cyber-bullying and internet safety across all platforms. It should also be recognised that computers are connected to mains electricity and there is a potential hazard. Children should not switch equipment on or off using mains switches.

Computing plays an important role in contributing to young people's long term economic wellbeing by developing individuals who are able to make decisions about when and how to use their Computing skills to support their learning. Computing capability is fundamental to participation and engagement in modern society and essential in many jobs.

Computing provides pupils with the tools to develop an understanding of their place in the world, their values and their responsibilities to other people, the environment and how they can contribute in a positive way.

Foundation Stage

In Foundation Stage, we teach computing as an integral part of Personal, Social and Emotional Development, Physical Development, Understanding the world and Expressive Arts and Design. Children in Foundation Stage use appropriate programmes to develop skills such as the use of cameras, logical reasons, sequencing and responsible use throughout the year. We relate the computing aspects of the children's work to the objectives set out in the Early Years Framework.

The EYFS framework demonstrates which statements from the 2020 Development Matters are prerequisite skills for computing within the national curriculum. The information below outlines the most relevant statements taken from the Early Learning Goals in the EYFS statutory framework and the Development Matters age ranges for Three and Four-Year-Olds and Reception to match the programme of study for computing.

The most relevant statements for computing are taken from the following areas of learning:

- Personal, Social and Emotional Development
- Physical Development
- Understanding the World
- Expressive Arts and Design

Early years learning environments should feature Computing scenarios based on experience in the real world, such as playing and exploring, active learning, unplugged activities that focus on building, creativity, and problem-solving skills. Children gain confidence, develop resilience and perseverance in the face of a challenge, control, and language skills through opportunities to explore using resources such as cameras, Beebots, iPads, laptops and sound buttons. Children are encouraged to use technology safely and for a purpose. We use Barefoot Computing to support our curriculum.

Equal Opportunities/Inclusion

We teach computing to all children, whatever their ability, in accordance with the school curriculum policy of providing a broad and balanced education to all children. Teachers provide learning opportunities, adapted where appropriate, to meet the needs of all children, and our work in computing takes into account the targets set for individual children within the SEND Local Offer.

At English Martyrs' we ensure that all children regardless of their religion, race, culture, gender, social background ability or disability have equal access to all aspects of computing. It is our intention that every child achieves their potential. We must endeavour to celebrate and recognise their achievements.

Health & Safety

At English Martyrs Catholic Primary School health and safety is integrated into computing. We plan and deliver a 'Be safe' Week annually but also incorporate using the internet safely into our lessons. In addition, the development of effective Computing skills allows children to access resources and information regarding healthy lifestyles, including diet and exercise.

Assessment & Recording

Formative assessment strategies are on-going throughout lessons across a unit of work and across a term/ year. Teachers record the progress that children make by assessing the children's work against the key learning for their lessons. At regular intervals following retrieval opportunities, (to allow us to ensure learning as moved from short to long term memory) teachers will note any pupils who are not able to remember key learning and identify how they may be able to ensure that support can be put in place to ensure that they can continue to develop and make progress as they move on to learning within future topic. At the end of the academic year, they are able to use their professional knowledge and assessment information to indicate whether children are working towards, working at or working above age related expectations.

The computing subject leader keeps evidence of planning, good examples of work in a portfolio of evidence and photographs of children's achievements in a portfolio.

The subject leader uses 'Tell Me Time' to evaluate the quality of computing education provided. This is a strategy adapted from Alex Bedford's 'Pupil Book Study' research work. This involves speaking with the children at regular intervals discussing learning.

Resources

The school has an extensive range of hardware, software and peripherals. The range of resources is constantly being developed as technology moves on. Computing equipment is usually expensive and as such care and attention should be given to the security and maintenance of equipment.

We have a range of resources to support the teaching of computing across the school. These resources are stored in the group rooms in the KS1 and UKS2 buildings. In addition, we have access to the NCCE local hub where we can loan equipment to support out curriculum such as micro bits and crumbles.

The school network is maintained by St Helens Local Authority. An ICT technician visits the school for one morning a week. This time is used for installations, updates and general support. Teachers can log any problems experienced with computing equipment with the Local Authority

through the Schools IT Portal throughout the week, which are dealt with and rectified on a priority basis.

Signed:

Date: