St Francis of Assisi Catholic Primary School

Computing Policy

2019-2020

Introduction

The use of information and communication technology is an integral part of the national curriculum and is a key skill for everyday life. computers, tablets, programmable robots, digital and video cameras are a few of the tools that can be used to acquire, organise, store, manipulate, interpret, communicate and present information. At St Francis of Assisi Catholic Primary School we recognise that pupils are entitled to quality hardware and software and a structured and progressive approach to the learning of the skills needed to enable them to use it effectively. The purpose of this policy is to state how the school intends to make this provision.

Aims

The school's aims are to:
- Provide a relevant, challenging and enjoyable curriculum for ICT and computing for all pupils.
- Meet the requirements of the national curriculum programmes of study for ICT and computing.
- Use ICT and computing as a tool to enhance learning throughout the curriculum.
- To respond to new developments in technology.
- To equip pupils with the confidence and capability to use ICT and computing throughout their later life.
- To enhance learning in other areas of the curriculum using ICT and computing.
- To develop the understanding of how to use ICT and computing safely and responsibly.

The national curriculum for computing aims to ensure that all pupils:
- Can understand and apply the fundamental principles of computer science, including logic, algorithms, data representation, and communication.
- 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.

Rationale

The school believes that ICT and computing:
- Gives pupils immediate access to a rich source of materials.
- Can present information in new ways which help pupils understand access and use it more readily.
- Can motivate and enthuse pupils.
- Can help pupils focus and concentrate.
- Offers potential for effective group working.
- Has the flexibility to meet the individual needs and abilities of each pupil.

Objectives

For extra information see Appendix 1 – Progression of Skills.

Early years (see also early year's policy)
It is important in the foundation stage to give children a broad, play-based experience of ICT in a range of contexts, including outdoor play. ICT is not just about computers. Early years learning

environments should feature ICT scenarios based on experience in the real world, such as in role play. Children gain confidence, control and language skills through opportunities to 'paint' on the whiteboard or drive a remote-controlled toy. Outdoor exploration is an important aspect, supported by ICT toys such as metal detectors, controllable traffic lights and walkie-talkie sets. Recording devices can support children to develop their communication skills. This is particular useful with children who have English as an additional language.

By the end of 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 a sequence of instructions
- write and test simple programs
- use logical reasoning to predict and computing the behaviour of 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.

By the end of key stage 2 pupils should be taught to:
- 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 world-wide 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.

Resources and access
The school acknowledges the need to continually maintain, update and develop its resources and to make progress towards a consistent, compatible IT system by investing in resources that will effectively deliver the strands of the national curriculum and support the use of ICT and computing across the school. Teachers are required to inform the Computing Subject Leader of any faults as soon as they are noticed. Resources, if not classroom based, are located in the ICT suite. A service level agreement with entrust is currently in place to help support the coordinator to fulfil this role both in hardware & audio visual. ICT and computing network infrastructure and equipment has been sited so that:
- Every classroom from reception to Y6 has a laptop connected to the school network and an interactive TV with sound, and DVD facilities.
- There is an ICT suite of 30 desktops.
- There are 2 tablet trolleys in school containing 30 iPads and 30 LearnPads with internet access available to use in classrooms.

- Each class from Y1 – Y6 has an allocated slot in an afternoon for teaching of specific ICT and computing skills every other half term.
- Each class from Y1-Y6 has an allocated slot in the ICT suite in a morning for teaching of the core subjects of maths and English using ICT.
- The ICT and computing suite and tablets are available for use throughout the school day as part of ICT and computing lessons and for cross curricular use.
- Pupils may use ICT and computing independently, in pairs, alongside a TA or in a group with a teacher.
- The school has an ICT and computing technician who is in school one afternoon every week to support technical issues.
- A governor will be invited to take a particular interest in ICT and computing in the school.

Planning

As the school develops its resources and expertise to deliver the computing curriculum, modules will be planned in line with the national curriculum and will allow for clear progression. Modules will be designed to enable pupils to achieve stated objectives. Pupil progress towards these objectives will be recorded by teachers as part of their class recording system. Staff will follow medium term plans with objectives set out in the national curriculum and use the same format for their weekly planning sheet. 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. This could include G&T children, those with SEN or those who have EAL. 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 line with the school inclusion policy. These children should be identified and discussed at pupil progress meetings to ensure appropriate provisions or interventions are put into place.

Assessment and record keeping (also see assessment policy)

Teachers regularly assess capability through observations and looking at completed work. Key objectives to be assessed are taken from the national curriculum to assess key ICT and computing skills each term. Assessing computing work is an integral part of teaching and learning and central to good practice. It should be process orientated - reviewing the way that techniques and skills are applied purposefully by pupils to demonstrate their understanding of the concepts of ICT and computing. As assessment is part of the learning process it is essential that pupils are closely involved. Assessment can be broken down into;
- Formative assessments are carried out during and following short focused tasks and activities. They provide pupils and teaching staff the opportunity to reflect on their learning in the context of the agreed success criteria. This feeds into planning for the next lesson or activity.
- Summative assessment should review pupils' capability and provide a best fit level. Use of independent open ended tasks, provide opportunities for pupils to demonstrate capability in relation to the term's work. There should be an opportunity for pupil review and identification of next steps. Summative assessment should be recorded for all pupils – showing whether the pupils have met, exceeded or not achieved the learning objectives.

We assess the children's work in computing by making informal judgements as we observe the children during lessons. We mark each piece of work against the lesson objective. Once the children complete a unit of work, we make a summary judgement of the work for each pupil as to whether they have yet to obtain, obtained or exceeded the expectations of the unit. We record the results in our assessment files and we use these to plan future work, to provide the basis for assessing the

progress of the child and to pass information on to the next teacher at the end of the year. Computing work is saved in class directories on the school network. Other work may be printed and filed within the subject from which the task was set.

Monitoring and evaluation

The subject leader is responsible for monitoring the standard of the children's work and the quality of teaching in line with the schools monitoring cycle. This may be through lesson observations, pupil interviews and looking at work. The subject leader is also responsible for supporting colleagues in the teaching of computing, for being informed about current developments in the subject, and for providing a strategic lead and direction for the subject in the school.

Pupils with special educational needs (see also SEN policy)

We believe that all children have the right to access ICT and computing. In order to ensure that children with special educational needs achieve to the best of their ability, it may be necessary to adapt the delivery of the ICT and computing curriculum for some pupils. We teach ICT and computing to all children, whatever their ability. ICT and computing forms part of the national curriculum to provide a broad and balanced education for all children. Through the teaching of ICT and computing we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Where appropriate ICT and computing can be used to support SEN children on a one to one basis where children receive additional support. Additionally as part of our dyslexia friendly approach to teaching and learning we will use adapted resources wherever possible such as visual timetables, different coloured backgrounds and screen printouts.

Equal opportunities (see also equal opportunities policy)

St Francis of Assisi Catholic Primary School will ensure that all children are provided with the same learning opportunities regardless of social class, gender, culture, race, disability or learning difficulties. As a result we hope to enable all children to develop positive attitudes towards others. All pupils have equal access to ICT and computing and all staff members follow the equal opportunities policy. Resources for SEN children and gifted & talented will be made available to support and challenge appropriately.

The role of the Subject Leader

- To offer help and support to all members of staff (including teaching assistants) in their teaching, planning and assessment of mathematics.
- To maintain resources and advise staff on the use of materials, equipment and books.
- To monitor classroom teaching or planning following the schools rolling programme of monitoring.
- To monitor the children's computing work, looking at samples of different abilities.
- To manage the computing budget.
- To lead staff training on new initiatives.
- To attend appropriate in-service training and keep staff up to date with relevant information and developments.
- To have enthusiasm for computing and encourage staff to share this enthusiasm.
- To keep parents and governors informed on the implementation of computing in the school.
- To liaise with all members of staff on how to reach and improve on agreed targets
- To help staff to use assessment to inform future planning.

The role of the class teacher

Individual teachers will be responsible for ensuring that pupils in their classes have opportunities for learning ICT and computing skills and using ICT and computing across the curriculum

- To plan and deliver the requirements of the EYFS outcomes and early learning goals or primary framework for mathematics to the best of their ability. in St Francis of Assisi Catholic Primary School we set high expectations for out pupils and provide opportunities for all pupils to achieve, including girls and boys, pupils with educational special needs, pupils with disabilities pupils from all social and cultural backgrounds, and those from diverse linguistic backgrounds. The class teacher ensures success by creating effective learning environments.

- Securing their motivation and concentration

- Providing equality of opportunity through teaching approaches.

- Using appropriate assessment approaches

- Setting suitable targets for learning as outlined in the inclusion policy.

- The class teacher's role is a vital role in the development of mathematics throughout the school and will ensure continued progression in learning and understanding.

- To keep up to date assessment records (see policy document).

Staff training

• The computing subject leader will assess and address staff training needs as part of the annual development plan process or in response to individual needs and requests throughout the year.
• Individual teachers should attempt to continually develop their own skills and knowledge, identify their own needs and notify the coordinator.
• Teachers will be encouraged to use ICT and computing to produce plans, reports, communications and teaching resources.

Health and safety (see also health and safety policy)

The school is aware of the health and safety issues involved in children's use of ICT and computing. All fixed electrical appliances in school are tested by a la contractor every five years and all portable electrical equipment in school is tested by an external contractor every twelve months. It is advised that staff should not bring their own electrical equipment in to school but if this is necessary, then the equipment must be pat tested before being used in school. This also applies to any equipment brought in to school by, for example, people running workshops, activities, etc. and it is the responsibility of the member of staff organising the workshop, etc. to advise those people. All staff should visually check electrical equipment before they use it and take any damaged equipment out of use. Damaged equipment should then be reported to the senior site technician, bursar or head teacher who will arrange for repair or disposal.

- Children should not put plugs into sockets or switch the sockets on.
- Trailing leads should be made safe behind the equipment
- Liquids must not be taken near the computers
- Magnets must be kept away from all equipment
- E-safety guidelines will be set out in the E-safety policy and AUP.

Security

• The ICT and computing technician 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 and kS2.

• All pupils and parents will be aware of the school rules for responsible use of ICT and computing and the internet 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.

Cross curricular links

As a staff we are all aware that ICT and computing capability should be achieved through core and foundation subjects. Where appropriate, ICT and computing should be incorporated into schemes of work for all subjects. ICT and computing should be used to support learning in other subjects as well as develop ICT and computing skills.

Parental involvement

Parents are encouraged to support the implementation of ICT and computing where possible by encouraging use of ICT and computing skills at home during home-learning tasks and through the school website. They will be made aware of e-safety and encouraged to promote this at home.

Appendix A – Progression of Skills

	e-Safety	Programming – Computer Science	Handling Data – Digital Literacy	Multimedia – Digital Literacy	Technology in our lives – Information Technology
Foundation Stage	• Ask an adult when they want to use the internet. • Explain to an adult when something is worrying or unexpected happens whilst using the internet. • Be kind to their friends. • Explain to an adult about the amount of time that they spend using technology (computers, tablets and/or game devices) • Is careful with technology devices.	• Make a floor robot move. • Use simple software to make something happen. • Make independent choices about the buttons and icons they press/touch or click.	• Explain about different kinds of information such as pictures, videos, text and sound.	• Move objects on a screen. • Create shapes and test on a screen. • Use technology to show learning.	• Explain technology that is used at home and in school. • Operate simple equipment. • Use a safe part of the internet to play and learn.

	e-Safety	Programming – Computer Science	Handling Data – Digital Literacy	Multimedia – Digital Literacy	Technology in our lives – Information Technology
Year 1 – Key Stage 1	• Keep passwords private. • Explain what personal information is. • Talk to an adult when something is seen that is unexpected or worrying online. • Explain why it is important to be kind and polite. • Recognise an age appropriate website. • Follows the school's e-Safety charter.	• Give instructions to partners and follow their instructions around the room. • Describe what happens when you press buttons on a robot. • Press buttons in the correct order to make the robot complete a simple task. • Describe what actions are needed to make something happen. • Begin to use the word algorithm. • Begin to predict what will happen for a short sequence of instructions. • Begin to use software/apps to create movement and patterns on a screen. • Begin to use the word debug when correcting mistakes.	• Explain about the different ways in which information can be shown. • Use technology to collect information including photos, videos and sound. • Sort different kinds of information and present it to others. • Add information to a pictograph and talk to an adult about what they have found out.	• Begin to be creative with different technology tools. • Use of technology to create and present ideas. • Use of the keyboard or word bank on a device to enter text. • Save information in a special place. • Retrieve information previously saved.	• Recognise the ways in which technology is used on our classroom. • Recognise the ways in which technology is used at home and in the community. • Use links to websites to find information. • Identify some of the benefits of using technology.

	e-Safety	Programming – Computer Science	Handling Data – Digital Literacy	Multimedia – Digital Literacy	Technology in our lives – Information Technology
Year 2 – Key Stage 1	• Explain why it is important to keep their password and personal information private. • Describe the things that happen online. • Explain why it is sensible to be online for a short amount of time. • Explain why it is important to be kind and polite online and in real life. • Understand that not everyone is who they say they are on the internet. • Follows the school's e-Safety charter.	• Give instructions to partner (using forward, backward and turn) and physically follow their instructions. • Explain the order that is needed to make something happen and talk about this as an algorithm. • Program a robot or software to do a particular task. • Look at partner's program and explain what will happen. • Use programming software to make objects move. • Watch a program execute and debug if necessary.	• Explain about the different ways we use technology to collect information including a camera, microscope or sound recorder. • Make and save a chart or graph using the data collected. • Explain about the data that is shown on a chart or graph. • Begin to use a branching database. • Explain what kind of information could be used to help investigate a question.	• Use technology to organise and present ideas in different ways. • Use the keyboard on a device to add, delete and space text for other to read. • Explain about an online tool that will help share ideas with other people. • Save and open files on a device.	• Explain why we use technology in the classroom. • Explain why we use technology in our home and community. • Begin to have an understanding that other people have created the information used. • Identify the benefits of using technology including finding information, creating and communicating. • Explain the differences between the internet and things in the physical world.

	e-Safety	Programming – Computer Science	Handling Data – Digital Literacy	Multimedia – Digital Literacy	Technology in our lives – Information Technology
Year 3 – Lower Key Stage 2	• Explain what makes a secure password and why they are important. • Protect personal information when doing different things online. • Ability to use the safety features of websites as well as reporting concerns to an adult. • Recognise websites and games appropriate for age group of this year. • Make good choices about how long they spend online. • Asks an adult before downloading files and games from the internet. • Posting positive comments online. • Follows the school's e-Safety charter.	• Begin to break an open-ended problem up into smaller parts. • Input programming commands into a sequence to achieve a specific outcome. • Test their own programs and can debug it if necessary. • Use the repeat commands. • Describes the algorithm they need for a simple task. • Detect a problem in an algorithm which could result in unsuccessful programming.	• Discuss the different ways data can be organised. • Search a ready-made database to answer questions. • Collect data in order to help answer a question. • Make a branching database. • Use data logger to monitor changes and can discuss the information collected.	• Create different effects with different technology tools. • Combine a mixture of text, graphics and sound to share their ideas and learning. • Use of appropriate keyboard commands to amend text on the device, including making use of a spell checker. • Evaluate their own work and improve its effectiveness. • Use of an appropriate tools to share work using a secure online tool.	• Save and retrieve work on the internet, the school network or own device. • Explain about the parts of a computer. • Explain ways to communicate with others online. • Describe what the World Wide Web is and its role within the internet that contains website. • Use of search tools to find and use an appropriate website. • Decide whether children can use the images that they find online in their own work.

	e-Safety	Programming – Computer Science	Handling Data – Digital Literacy	Multimedia – Digital Literacy	Technology in our lives – Information Technology
Year 4 – Lower Key Stage 2	• Selected a secure password and an appropriate screen name when using a website. • Explain the ways to protect themselves (and friends) from harm whilst online. • Use the safety features of websites as well as reporting concerns to an adult. • Understand that anything that is shared online can be seen by others. • Recognise websites and games appropriate for age group of this year. • Make good choices about how long they spend online. • Asks an adult before downloading files and games from the internet. • Posting positive comments online and through text messaging. • Follow the school's e-Safety charter.	• Use logical thinking to solve an open-ended problem by breaking it up into smaller parts. • Use of an efficient procedure to simplify a program. • Use of a sensor to detect change which can select an action within my program. • Keep testing the program whilst putting it together. • Use of a variety of tools to create a program. • Recognise an error in a program and debug if necessary. • Recognise that an algorithm will help to sequence more complex programs. • Recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology.	• Organise data in different ways. • Collect and identify where data could be inaccurate. • Plan, create and search a database to answer questions. • Select the best way to present data to the class. • Use a data logger to record and share readings with the class.	• Use photos, video and sound to create an atmosphere when presenting to different audiences. • Confidence in exploring new media to extend what they want to achieve. • Change the appearance of text to increase its effectiveness. • Create, modify and present documents for a particular purpose. • Use a keyboard confidently and make use of a spellchecker to write and review own work. • Use an appropriate tool to share work and collaborate online. • Provide constructive feedback to partners to help them improve their work and refine own.	• Informs teacher if a resources being used is on the internet, school network or actual device. • Identify key words to use when searching safely on the World Wide Web. • Thinks about the reliability of information that is on the World Wide Web. • Explain how they can check to see who owns photos, text and clipart from the internet. • Create a hyperlink to a resource on the World Wide Web. • Recognise that websites use different methods to advertise products.

	e-Safety	Programming – Computer Science	Handling Data – Digital Literacy	Multimedia – Digital Literacy	Technology in our lives – Information Technology
Year 5 – Upper Key Stage 2	• Select a secure password and screen name. • Protect password and other personal information. • Explain why it is important to protect friends (and themselves) whilst being online. • Explain how to report any concerns to an appropriate adult. • Know that anything posted online can be seen, used and may affect others. • Talk about the dangers of spending too long online or playing a game. • Explain the importance of communicating kindly and respectfully. • Discuss the importance of choosing an age-appropriate website, app or game. • Explain why it is important to protect computers or devices from harm.	• Decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program. • Refine a procedure using repeat commands to improve a program. • Use a variable to increase programming possibilities. • Change an input to a program to achieve a different output. • Use 'if' and 'then' commands to select an action. • Discuss how a computer model can provide information about a physical system. • Use logical reasoning to detect and debug mistakes in a program. • Use logical thinking, imagination and creativity to extend a program.	• Use a spreadsheet and database to collect and record data. • Select an appropriate tool to help collect data. • Present data in an appropriate way. • Search a database using different operators to refine the search. • Discuss the mistakes in data and suggest how it could be checked.	• Use text, photo, sound and video editing tools to refine their work. • Use the skills already developed to create content using unfamiliar technology. • Select, use and combine the appropriate technology tools to create effects that will have an impact on others. • Select an appropriate online or offline to create and share ideas. • Review and improve own work and support others to improve their work.	• Describe different parts of the internet. • Use different online communication tools for different purposes. • Use a search engine to find appropriate information and check its reliability. • Recognise and evaluate different types of information found on the World Wide Web. • Describe the different parts of a webpage. • Locate who the information on a webpage belongs to. • Know which resources on the internet can be downloaded and used. • Describe the ways in which websites advertise their products.

	e-Safety	Programming – Computer Science	Handling Data – Digital Literacy	Multimedia – Digital Literacy	Technology in our lives – Information Technology
Year 6 – Upper Key Stage 2	• Protect password and other personal information. • Explain the consequences of sharing too much information whilst online. • Support peers in the class to protect themselves and make good choices whilst online. • Report any concerns to a responsible adult. • Explain the consequences of spending too much time online or on a game. • Explain the consequences of not communicating kindly and respectfully. • Protect computer/devices from harm on the internet.	• Deconstruct a problem into smaller steps, recognising similarities to solutions used before. • Explain and program each of the steps in the algorithms created. • Evaluate the effectiveness and efficiency of the algorithm whilst continually testing the programming of that algorithm. • Recognise when it is applicable to use a variable to achieve a required output. • Use a variable and operators to stop a program. • Use different inputs (including sensors) to control a device or onscreen action and predict what will happen. • Use logical reasoning to detect and correct errors in an algorithm and program.	• Plan the process needed to investigate the world around them. • Select the most effective tool to collect data for an investigation. • Check the data collected for accuracy and plausibility. • Interpret the data collected. • Present the data collected in an appropriate way. • Use the skills developed to interrogate a database.	• Discuss the audience, atmosphere and structure when planning a particular outcome. • Confidently identifies the potential of unfamiliar technology to increase creativity. • Combine a range of media, recognising the contribution of each to achieve a particular outcome. • Explain why they have selected a particular online tool for a specific purpose. • Be digitally discerning when evaluating the effectiveness of own work (and the work of others).	• Explain about the internet services that can be used for different purposes. • Describe how information is transported on the internet. • Select an appropriate tool to communicate and collaborate online. • Discuss the way search results are selected and ranked. • Check the reliability of a website. • Inform others about copyright and acknowledge the sources of information that have been found online. • Know that websites can use data to make money and target their advertising.