



Southfields Primary School

Computing Policy

Date agreed: September 2019

Review Date: September 2021

This policy, having been presented to, and agreed upon by the whole staff and Governors, will be distributed to:

- All teaching staff
- School governors

A copy of the policy will also be available in:

- The Staffroom
- The Head's office
- School web site

This will ensure that the policy is readily available to visiting teachers, support staff and parents.

Southfields Primary is totally committed to social justice and improving life chances for potentially vulnerable children. It is dedicated to sharing its work and findings beyond the school to improve outcomes for as many children as it can reach and has a particular specialism in Speech and Language development.

"Computers themselves, and software yet to be developed, will revolutionise the way we learn"

Steve Jobs (Co-founder of Apple)

"We need technology in every classroom and in every student and teacher's hand, because it is the pen and paper of our time, and it is the lens through which we experience much of our world."

1. Introduction and Subject Definition

It is important, as facilitators of learning in Southfields Primary School, that we recognise and understand the technological needs of the school population. This generation of children have come into a world in which technology is abundant. Their world is a world of technology which they start interfacing with from a very young age. Therefore, it is important that pupils in our school gain the appropriate skills, knowledge and understanding to have the confidence and capability to use Computing throughout their lives. Here at Southfields, we understand and recognise that computers, technology and the internet have the capabilities to narrow class gaps and social disadvantages. Through the computing access that our children are provided with in school, they gain opportunities to explore, discover and immerse themselves into areas that would previously have been un-reachable for them. We hope to inspire them to love and be excited by the future of our technological world and to realise that the possibilities for their future really are endless.

The National Curriculum requires Computing to be used in all subjects where appropriate. Computing is a cross curricular competence which is concerned with the acquisition, storage, manipulation, interpretation and telecommunication of information. It involves creating, collecting, organising, storing, processing and presenting information for specific purposes by electronic means.

The new National Curriculum 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.

2. National Curriculum Aims and objectives

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.

Along with these National Curriculum Objectives, we aim to deliver a computing curriculum programme which enables young children to have a wide variety of experiences in computing which will allow them to develop the knowledge, skills and attitudes that they require. Southfields strive to do this by meeting the following aims and objectives:

- To allow pupils to gain confidence and enjoyment from their Computing activities and to develop skills which extend and enhance their learning throughout the curriculum.
- To develop pupils' awareness of the use of computers and other devices in order to gain the skills and confidence to embrace and use technologies now and in the future, at home, at work and in the wider community.
- To ensure children recognise how to effectively use the internet to enhance their knowledge and develop their curiosity into new subjects and questions they may have.
- To allow pupils to evaluate the potential of computers and other devices along with their limitations.
- To develop logical thinking, problem solving and creativity.
- To provide opportunities for pupils to gain knowledge about Computing tools. These include online programs; word processors, databases, control devices, graphics and software for processing sound and images and applications on tablets.
- To encourage pupils to become autonomous, independent users of computers and other devices both as a learning resource and as a discipline in its own right.
- To develop a whole school approach to Computing ensuring continuity and progression.
- To develop pupils' awareness of how to stay safe online and how to become a positive Digital Citizen online.
- To equip pupils with the skills they need to think critically of content online to better protect themselves and enable them to become their own gatekeepers of digital content in the online world.
- To provide pupils with opportunities to develop their Computing capabilities in all areas specified by the new National Curriculum objectives

"Technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is most important"

Bill Gates - founder of Microsoft

3. Curriculum Organisation

Computing should be taught through all relevant curriculum subjects throughout the children's time at Southfields Primary School. This is achieved through regular opportunities to use and develop a range of computing skills relevant to a variety of subjects. For example, digital microscopes in Science, internet research in topic based lessons, maths programmes to enhance understanding and the production of presentations to share their knowledge with others.

In addition to this, every class has one session a week in our fully-equipped computing suite where they are taught an engage computing curriculum by a specialist Computing teacher. Throughout these sessions, they will be gain a complete coverage of the Curriculum objectives of both the National Curriculum and our school. As well as the opportunity to master areas that they are most engaged with and display their creativity and enthusiasm through a range of projects.

3.1 Subject content (taken from the National Curriculum)

Key stage 1

Pupils 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

Pupils will 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

3.2 Southfields Computing Planning

Below is a grid outlining the Computing units that year group that will be taught at Southfields:

	Autumn 1						Autumn 2						Spring 1						Spring 2						Summer 1						Summer 2						Key			
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6				
Y1	Introduction to using a computer - Logging on / Keyboard and mouse control / Online Safety						Basic skills - Opening a word document / online picture searching / saving and retrieving documents						Lego builders - Following instructions accurately (algorithms) to create a model			Maze Explorers - Understanding computational direction when it comes to programming			Scratch Junior - coding using ipads to create simple animations						Animated Story Books - Encompassing drawing, writing and coding to create a digital story						Pictograms - Using a computer to present and represent data			Basic Spreadsheets - Navigating a spreadsheet / Data entry			Programming / Coding			
Y2	Scratch - Programming simple animated scenes on the computer using block coding						Email Detectives - An introduction to email - looking at how they work through a "detective" style						Computer Art - looking at different artists and recreating their work on a computer						Music - Composition, sequencing and repetition using a computer			Spreadsheets - Pictograms / Graphs / Generating totals			Basic word processing - how to change font / layout etc			Typing Games - Finding the keys / Increasing accuracy			Presenting Ideas - looking at the different ways in which information can be presented - Quiz / Fact File / Presentation						Multimedia			
Y3	Stop Motion Animation - Using iPads, create characters and film a stop motion movie						Lego - Building simple lego creations that can be controlled by programming a computer						Email - Exploring Emails in Purple Mash - emailing classmates and chatting with 'bots'						Typing - correct finger placement / improving scores and techniques						Introduce school email and Google Classroom and Google Forms						Spreadsheets - Pie Charts / Greater Than / Less Than / Times Tables Machine			Effective searching - Online Safety			Flowol - Basic flow diagram coding			Data & Communication
Y4	Music - Creating their own music on the computer using different audio programmes						Websites - Creating a basic website using HTML						Lego - Text based coding to control an on-screen turtle			What makes a computer - Looking inside old computers to see how they work			TinkerCad - 3D Design - how to use the program and completing a design challenge						Coding - Exploring If/Else / Changing variables / Repeat / Timer functions and debugging code						Photography - Photography principles and basic photo editing						Computer Key Skills			
Y5	Flowol - Advanced flow diagram coding - using the mimics to control real life scenes						Cryptography - Codebreaking / Using a computer to crack codes / Demonstrating the importance of a strong password						Spreadsheets - Using spreadsheets effectively and in 'real-world' scenarios						Lego - Building advanced lego creations that can be controlled by a computer - emphasis on the coding and programming side of the models						Games Design - Creating their own 3D first-person game / setting rules and restrictions / full design of layout, scenes and playability						Art - digital patterns / programming the computer to create artwork that would be difficult to create by hand									
Y6	Blogging - Creating and maintaining an online blog						Coding - Programming a complex multi-input 'choose your own ending' computer game						Databases - Creating their own databases and searching for content within them						Online research - Using collaborative software in groups, effectively and safely research into a topic of their choice			Creating an app - Breaking down and looking at the code behind popular apps and having a go at creating our own			Radio Station - Manipulating audio to create adverts / jingles for an imaginary radio station						Creating a promotional video for the school - Using an iPad to film and edit a video for prospective parents / Utilising Green Screen									

"Whether you want to uncover the secrets of the universe, or you want to pursue a career in the 21st Century, basic computer programming is an essential skill to learn"
Stephen Hawking

4. Resources

A multitude of computing resources are available here at Southfields. Examples include:

- Windows laptops
- Apple iMacs
- Macbooks
- Ipads
- Android tablets
- Digital cameras
- Projectors
- Interactive whiteboards
- Visualisers
- Microphones
- Printers
- Green screen technology
- Inspirational screens throughout the school
- BeeBots

In addition to the hardware listed above, Southfields uses a vast array of software including:

- Google Classrooms
- Google Suite
- Microsoft Office
- Scratch (and Scratch JR)
- Flowoll
- Stop Motion
- iMovie
- + many more!

5. Contribution and links to other areas of the Curriculum

As mentioned previously, computing is used in our school to enrich and be enriched by other areas of the curriculum. For example:

- **English:** basic writing skills, creative writing, spelling and phonics, handwriting (through use of apps).
- **Maths:** statistics and data, position and direction, number skills
- **Music:** composition and evaluation.
- **Art:** experimenting with different artistic styles e.g. 3d and geometric
- **PSHE:** E-safety
- **History/Geography/Science:** Improved knowledge through online research and topic based projects/activities.

Examples of Apps available to children at school and/or home to enhance other areas of the curriculum:

- Maths (IXL, TimesTable Rockstars, RM Easimaths, Top Marks)
- English (IXL, Bug Club, Active Learn, Squeebles, Spreeder, Phonics, Epic)

6. Health and Safety

The general teaching requirement for health and safety applies in this subject. All teachers will plan their work with the safety of the pupils in mind. Regular checks and risk assessments are reviewed by all teachers, as well as a continuous risk assessment which is carried out every day.

Annual safety checks are carried out on all electrical equipment and if a potential hazard is identified it is immediately taken out of use. It is imperative that all electrical equipment is kept in good working order. In addition to this the following guidelines must be adhered to on a daily basis:

- Pupils should not be allowed to switch on the power at the mains.
- Equipment should be situated away from water.
- Pupils should always be supervised when using electrical equipment.
- All plugs, leads and equipment should be checked regularly and tested for electrical safety in accordance with County Council guidelines.
- Plug sockets will be child-proofed when not in use.

7. Equal Opportunities

All pupils regardless of race, gender or ability should have the opportunity to develop Computing capability.

We ensure that all our pupils:

- Have equal access to Computing resources
- Have equal opportunities to develop Computing capability
- Use software which is appropriate to their ability
- Have adapted /special opportunities provided if they have a specific need(s)

When planning and teaching Computing teachers will consider:

- Setting suitable learning challenges
- Responding to pupils diverse needs
- Overcoming potential barriers to learning and assessment for individuals and groups of pupils

Pupils with Special Educational Needs

Pupils with Special Educational Needs benefit from using computers and other devices as it enhances access to the curriculum, and this in turn encourages motivation and the development of skills, ensuring significantly higher achievements. Therefore, the opportunities to utilise Computing should be maximised. The school has purchased a range of English and maths resources, which are aimed at children with specific learning difficulties and these pieces of software are usually used in small groups.

Inclusion Statement

We ensure access to the curriculum at an individual level through appropriate differentiated materials to support ability level. Further support is available from teaching assistants and the SENCO.

8. Data Protection

Southfields are adhering to the new GDPR guidelines coming into effect May 2018. Data Protection is about avoiding harm to individuals by misusing or mismanaging their personal data. As a school organisation we collect, use, or store personal data.

The Data Protection Act applies to us and therefore we Data is collected and adhered to with the eight principles set out by General Data Protection Regulation in mind, which include:

- Only collecting information for specific purposes and not then using it for other purposes
- Only collecting what you need for the specific purpose
- Keeping it accurate and up to date; and safe and secure
- Processing information lawfully and allowing subject access in line with the Act.
- Storage limitation – don't keep it for longer than you need to fulfil the purpose
- Accountability – you must be able to prove you have complied with the above. In addition to this, all children are regularly reminded about Data Protection rules and Esafety relevant to their usage of technology