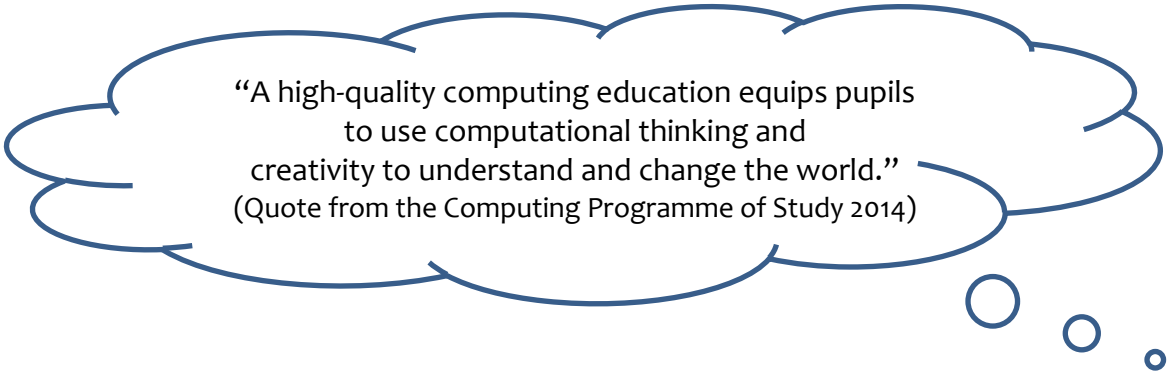
# Computing Policy




# Introduction

Computing and ICT (Information and Communications Technology) play a vital role in our lives, particularly in current times where technologies are constantly changing and evolving. A sound knowledge and understanding of ICT and Computing enables and prepares pupils to be active participants in a world where work, and other activities, are increasingly transformed by access to varied and developing technology. It is our duty as educators to ensure all children have access to an education in which such technologies are available and skills taught and practiced to a high standard in a variety of ways.

The Department for Education published the new National Curriculum for Computing effective from September 2014. This curriculum reflects the developments that have taken place over recent years; shifting focus from children learning how to **use** computers, to becoming competent and confident analytical thinkers, computer programmers and understanding **how** technology works. The new curriculum encompasses three main strands of Computing (C), Information and Communication Technology (ICT), and Digital Literacy (DL) which will be outlined in this policy.

This policy should be read in conjunction with the Online Safety, Acceptable Usage and Information Security policies.

# Purpose

This policy aims to reflect the school values and philosophy in relation to the teaching and learning of C, ICT and DL. It is intended as an outline to establish what we will do, and as a guide for teachers, non-teaching staff, parents and governors.

The purpose of the C and ICT policy at St Mary's is:

- To equip pupils with the computational knowhow to change the world for the better;

- To establish a framework for teaching and learning which meets DfE requirements;
- To promote a good understanding of what C, ICT and DL are and how they will look at St Mary's;
- To establish clear expectations for staff and pupils;
- To promote continuity and coherence throughout school;
- To establish clear procedures and guidelines for staff to operate within.

# Aims and Objectives

We aim for our curriculum to:

- Provide a whole school approach to C and ICT, ensuring continuity and progression;
- Provide children with opportunities to develop their computing capabilities in all areas specified by the National Curriculum Computing Programme of Study;
- Provide challenge and excitement for our pupils, both in C / ICT and through their use across the curriculum;
- Inspire children to be creative and innovative with new and emerging technologies.

We aim for members of staff to:

- Be confident users of new technologies to be able to use them effectively as powerful tools to support and enhance teaching and learning opportunities across the curriculum;
- Develop good subject knowledge in relation to C, ICT and DL so that they are able to deliver high quality lessons to enable pupils to be challenged and achieve highly;
- Use computing technologies, when appropriate, to improve access to learning for pupils with a diverse range of individual needs, including those with SEN and disabilities.
- Provide pupils with challenging, engaging and motivating lessons;

We aim for our children to:

- Become autonomous, independent users of computing technologies;
- Be confident users of new technologies and be able to experiment with them in different ways to communicate learning;
- Be able to use logical thinking and reasoning to solve problems;
- Gain and apply new skills and knowledge in the areas set out in the Programmes of Study;
- Understand how their C and ICT learning in school impacts on their future lives.

# The Computing Curriculum – C, ICT and DL

St Mary's Computing Curriculum focuses on three main areas:

- Computer Science / Computing (C) – *The ability to understand how technologies work and* ***how to be an effective author*** *of them. The ability to apply logical reasoning and computational thinking to solve problems.*
- Information and Communication Technologies (ICT) – *The ability* ***to be an effective and thoughtful user*** *of technologies to store, present and communicate information.*
- Digital Literacy (DL) - *The ability to locate, organise, understand, evaluate, and analyse information using digital technology. It involves a working knowledge of current 'high-technology', and an understanding of how it can be used.*

As described above, C and ICT are different, but complimentary subjects. It is also important to note that at times our C curriculum will be non-computer based. The focus in this area is computational thinking and logical reasoning to equip our children with the thinking skills they will need to solve computer based problems.

At St Mary's, the curriculum will be planned and taught based on these three key areas.

The following pages show the long term plan for 2022/23 for the three aspects of the curriculum.

# Long Term Plan 2022-23

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|
| **EYFS** | Set up continuous provision in your classroom:<br>Computing through continuous provision | **Computing systems and networks**<br>Using a computer | **Programming 1**<br>All about instructions | **Computing systems and networks**<br>Exploring hardware | **Programming 2**<br>Programming Bee-Bots | **Data handling**<br>Introduction to data |
| **Year 1** | **Online safety**<br>Online safety Y1<br>**Computing systems and networks**<br>Improving mouse skills | **Programming 1**<br>Algorithms unplugged | **Skills showcase**<br>Rocket to the moon | **Programming 2**<br>Programming Bee-bots<br>Option 1: Bee-Bots<br>Option 2: Virtual Bee-bots | **Creating media**<br>Digital imagery<br>Option 1: Google<br>Option 2: Microsoft Office 365 | **Data handling**<br>Introduction to data |
| **Year 2** | **Online safety**<br>Online safety Y2<br>**Computing systems and networks 1**<br>What is a computer? | **Programming 1**<br>Algorithms and debugging | **Computing systems and networks 2**<br>Word processing | **Programming 2**<br>Programming: ScratchJr | **Creating media**<br>Stop Motion<br>Option 1: Using tablet devices<br>Option 2: Using | **Data handling**<br>International Space Station |
| **Year 3** | **Online safety**<br>Online safety Y3<br>**Computing systems and networks 1**<br>Networks | **Programming**<br>Programming: Scratch | **Computing systems and networks 2**<br>Emailing<br>Option 1: Google<br>Option 2: Microsoft Office 365 | **Computing systems and networks 3**<br>Journey inside a computer | **Creating media**<br>Video trailers<br>Option 1: Using devices other than iPads<br>Option 2: Using iPads | **Data handling**<br>Comparison cards databases<br>Option 1: Google<br>Option 2: Microsoft Office 365 |
| **Year 4** | **Online safety**<br>Online safety Y4<br>**Computing systems and networks**<br>Collaborative Learning<br>Option 1: Google<br>Option 2: Microsoft Office 365 | **Programming 1**<br>Further coding with Scratch<br>Option 1: Google<br>Option 2: Microsoft Office 365 | **Creating media**<br>Website design<br>Option 1: Google<br>Option 2: Microsoft Office 365 | **Skills showcase**<br>HTML | **Programming 2**<br>Computational thinking | **Data handling**<br>Investigating weather |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Year 5** | **Online safety**<br>Online safety Y5<br><br>**Computing systems and networks**<br>Search engines | **Programming 1**<br><br>Programming music<br>Option 1: Sonic Pi<br>Option 2: Scratch | **Data handling**<br><br>Mars Rover 1 | **Programming 2**<br><br>Micro:bit | **Creating media**<br><br>Stop motion animation<br>Option 1: Stop motion studio<br>Option 2: Using cameras | **Skills showcase**<br><br>Mars Rover 2 |
| **Year 6** | **Online safety**<br>Online safety Y6<br><br>**Computing systems and networks**<br>Bletchley Park | **Programming**<br><br>Intro to Python | **Data handling**<br><br>Big data 1 | **Creating media**<br><br>History of Computers | **Data handling**<br><br>Big data 2 | **Skills showcase**<br><br>Inventing a product |

# St Mary's ICT/DL Long Term Plan 2022/23

| **Year 1 & 2 Curriculum Objectives** | |
|---|---|
| • Use technology purposefully to create, organise, store, manipulate and retrieve digital content.<br>• 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. | |
| **Digital Literacy Outcomes - Year One** | **Digital Literacy Outcomes - Year Two** |
| • I can turn on a computer and screen / iPad / other electronic devices. | • I can turn on a computer and screen / iPad / other electronic devices. |
| • I can log on and off independently. | • I can log on and off independently, remembering log-on details. |
| • I can follow a series of instructions to open a computer program (with adult support). | • I can follow a series of instructions to open a computer program and begin to remember where to find them. |
| • I can type (copy) a sentence using the correct keys. Including backspace to delete, single space, capital letters and full stops. | • I can type a sentence using the correct keys. Including backspace to delete, single space, capital letters, full stops, question marks. |

| | |
|---|---|
| • I can add a picture using clipart. | • I can edit my work to improve it, including changing font and size of images / layout on the page. |
| • I can use a drawing program to create an image. | • I can add a picture using clipart and copy/paste. |
| • I am familiar with how to use an iPad / other electronic devices. | • I can use a range of ways to present my work. Including Word and PowerPoint. |
| • I can navigate web pages to find information, with support. | • I am familiar with how to use an iPad / other electronic devices. |
| • I can send and reply to emails, being aware of the type of information it is appropriate to share. | • I can use a safe search engine to search for information. |
| • I can print using the print icon. | • I can navigate web pages to find information. |
| | • I can save and retrieve my work following a set of instructions. |
| | • I can send and reply to emails, being aware of the type of information it is appropriate to share. |

## Y3 & 4 Objectives

- 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 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.

## Digital Literacy Outcomes – Y3 & 4

| | |
|---|---|
| • I can log on and off independently, remembering log-on details. | • I can type accurately, at a good speed, using both hands. |
| • I can open a computer program independently. | • I can navigate web pages to find information and use this in my work. |
| • I can create a slideshow to use as part of a presentation. | • I know that not all information on the internet is reliable / appropriate. |
| • I can present my work in a range of ways (Word, PowerPoint, graphs, spreadsheets / databases). | • I can use a safe-search engine to search for information, including using effective terms in my search / advanced search options. |

| | |
|---|---|
| • I can type text using the correct keys, including those with the 'shift' function. | • I can save and print my work, including using folders and different locations. |
| • I can edit my work to improve it, including font and size of images / layout. | • I can send and reply to emails, being aware of the type of information it is appropriate to share. |
| • I can add a picture using clipart and copy/paste. | |

## Y5 & 6 Objectives

- 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 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.
- 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.

## Digital Literacy Outcomes – Y5 & 6

| | |
|---|---|
| • I can log on and off independently, remembering log-on details. | • I know how a search engine works. |
| • I can open a computer program independently. | • I can navigate web pages to find information and use this in my work. |
| • I can create a slideshow to use as part of a presentation. | • I know that not all information on the internet is reliable / appropriate. |
| • I can present my work in a range of ways (Word, PowerPoint, graphs, spreadsheets and databases) using a range of options such as text, graphics, animation and sound. | • I can use a safe-search engine to search for information, including using effective terms in my search / advanced search options. |
| • I can type text using the correct keys, including those with the 'shift' function. | • I can save, retrieve and print my work, including using folders and different locations. |
| • I can edit my work to improve it, including font and size of images / layout. | • I can send and reply to emails, being aware of the type of information it is appropriate to share. |
| • I can add a picture using clipart and copy/paste. | • I have a basic understanding of how computer networks and the internet work. |

| | |
|---|---|
| • I can type accurately, at a good speed, using both hands. | • I know what is inside a computer (basic). |

# Teaching and Learning

The time allocated to the teaching of the C aspects is flexible and arranged by the class teacher to best suit the needs of the children. The guidelines below are followed by each teacher:

- The teaching of ICT / DL skills should be discrete (e.g. basic skills in using software and/or equipment);
- Children should be given as many opportunities as possible to apply their C, ICT and DL skills across the curriculum and in creative ways (e.g. as an option to present work);
- There are no minimum or maximum requirements in relation to time spent on the teaching and learning of C, ICT and DL per week. However, the class teacher must ensure through careful planning and reviewing, that each learning objective from the C and ICT / DL curriculum is covered thoroughly and that C and ICT / DL are an integral part of the whole curriculum.
- Teachers must show coverage of learning objectives which are outlined on the previous pages.
- Planning must be centred around the needs of the pupils and designed to meet a range of differing needs, including those needing additional support.
- Planning must show differentiation by highlighting key questions that may be asked of pupils to challenge or support them further.
- Where appropriate, planning must be linked to topics being studied.

# Assessment

**Summative Assessment:**

The Reception Scheme of work is linked to the seven areas of learning:

communication and language, expressive arts, Literacy, Mathematics, physical development, PSED and understanding the world. Progress is measured using the Foundation Stage Profile.

The Kapow – Computing assessment tools for Year 1 – Year 6 are used to assess children against the curriculum in line with our Computing Scheme of Work.

**Formative Assessment:**

In order to ensure lessons are pitched correctly and children are challenged, teachers must regularly check progress alongside the progression statements, guidance on Kapow - Computing and expectations explained above. Knowledge gained will feed in to the summative assessment where judgements are made at the end of each school year.

# Roles and Responsibilities

**The ICT Coordinator** – The school has a designated Computing Leader to oversee the planning, teaching and organisation of C and ICT / DL. The ICT Coordinator will be responsible for:

- Raising standards in C and ICT / DL across school by:
- Supporting others in planning, teaching and assessment;

- Facilitating the use of ICT across the curriculum, in collaboration with other subject coordinators;
- Ensuring staff are up to date with training to enable them to deliver the curriculum confidently and effectively.
- Providing advice to staff in terms of resourcing, planning, using software and equipment, effective resources;
- Managing school resources to ensure we have the technology to be able to deliver the new curriculum effectively;
- Monitoring the planning and delivery of the new C curriculum and reporting to the Head Teacher.

**The Head Teacher and Governing Body** – The Head Teacher and Governing Body provide support for the ICT Coordinator to fulfil their role, as outlined above. The will provide support by:

- Ensuring teachers are able to deliver the new curriculum by having access to the appropriate training and resources necessary;
- Providing opportunities for the Computing Leader to work with staff to plan and deliver lessons for the new curriculum;
- Reviewing policies relating to C, E-safety and Information Security.

**The Class Teacher** – The class teacher must:

- Follow the guidelines set out in the C, E-safety and Information Security policies.
- Plan effective C and ICT / DL lessons using the objectives from the long term plan outlined in this policy;
- Ensure all objectives for their year group are planned for either through discrete or cross-curricular lessons;
- Provide many opportunities for C and ICT / DL skills to be applied by pupils in a variety of ways, using a wide range of technology and software;
- Plan lessons which will support and/or challenge pupils as appropriate;
- Ensure they have access to a range of necessary resources to be able to deliver the curriculum effectively. This includes liaising with the Computing Leader that resources are available, ensuring equipment is ready to be used, and returning equipment for others to use. Any breakages or faults must be reported by teaching staff to the Computing Leader.
- Support the Computing Leader in monitoring and assessment by completing the relevant planning and assessment grids at the end of each term.
- Ensure support staff have access to planning and have the knowledge and skills to be able to support and challenge them in completing tasks.

**Support Staff** – Support staff must:

- Ensure they have the relevant planning necessary to support and challenge pupils;
- Ask for support from the class teacher and/or Computing Leader to ensure their training requirements are met.

# Monitoring and Evaluation

In order to ensure the curriculum is being planned for and delivered effectively, the Computing Leader will monitor the following:

- The training requirements of staff as new concepts and technologies are introduced to the curriculum;

- The impact of training already undertaken;
- Planning and assessment formats – taking on board any suggestions from staff on how they could be amended or used more effectively;
- Planning for each year group to ensure it is pitched appropriately, challenging, engaging, uses a wide range of resources and meets the requirements of the new curriculum;
- Children's work. This will be done in a variety of ways, including work scrutiny with commentary from the class teacher on how it was done; conversations with pupils; pupil skills audits;
- Computing teaching and learning by observing in the classroom, where possible.
- The impact of the Computing action plan and how this can be taken forward to further develop the subject;
- School resources to ensure staff and pupils have access to the appropriate and necessary equipment and software.

By monitoring the above areas, the Computing Leader, Head and Governing Body will be able to identify any areas of strength and development. These will be used to inform the next action plan to ensure clear direction.

# Staff Development

At St Mary's, we have a wide range of staff with differing areas of skills and knowledge in terms of C and ICT / DL. There is an expectation that all staff with endeavour to keep up to date with new developments and requirements in this area. To support this, the Computing Leader, Head Teacher and Governing Body will:

- Provide regular updates with regards to the new curriculum;
- Identify key areas to develop staff knowledge and skills;
- Provide opportunities for staff training in areas identified and/or requested. This may be delivered by the Computing Leader outside agencies;
- Identify areas of strength in knowledge and skills, and encourage these members of staff to assist in training and supporting others as well as leading by example and leading projects or specialism areas (e.g. programming, podcasting, blogging).

# Inclusion

It is our policy that all pupils regardless of race, class or gender have the opportunity to develop their Computing and ICT capabilities, in line with our Equal Opportunities policy.

# Resources and Access

ICT resources are accessed and deployed in a number of ways throughout school. This ensures the maximum amounts of resources are available and easily accessible to support delivery of an effective and powerful computing curriculum. At present we have:

- A computer suite containing 35 desktop computers. This is timetabled on a weekly basis. Class teachers can 'sign-up' to available slots each day to fit in with their C and ICT / DL needs;

- 17 iPads stored securely in the locked iPad cases. These are timetabled as per the computer suite. Classes may take all or some of the iPads when timetabled. Class teachers must request any Apps they may need, which will be purchased by the Computing Leader;
- 1 staff laptop per classroom. This can be used by the teacher to display learning materials, or by children as directed by the teacher.
- 1 iPad per year class – 7 in total
- 2 iPads to support SEN/nurture
- 1 Ctouch board per classroom – to be used as a teaching tool by staff or to aid learning in group work by children;
- Other resources available from the ICT store room include: Bee-bots and mats

A school network enables internet access to all devices in the school building, including mobile devices via Wifi. The school network is secure and can only be accessed by user name and password – monitored by the Computing Leader and Cheshire East local authority. The network also offers access to a shared area in which documents are stored and accessed. Please refer to the Online Safety, Acceptable Usage and Information Security policies for further details.

# Online Safety

Internet access is planned to enrich and extend learning activities. The school has acknowledged the need to ensure that all pupils are responsible and safe users of the Internet and other communication technologies. We aim to provide a curriculum which includes education on how to stay safe online and when using other technology. We also offer a safe online environment through filtered internet access. Please refer to the school Online Safety, Acceptable Usage and Information Security policies for further details.

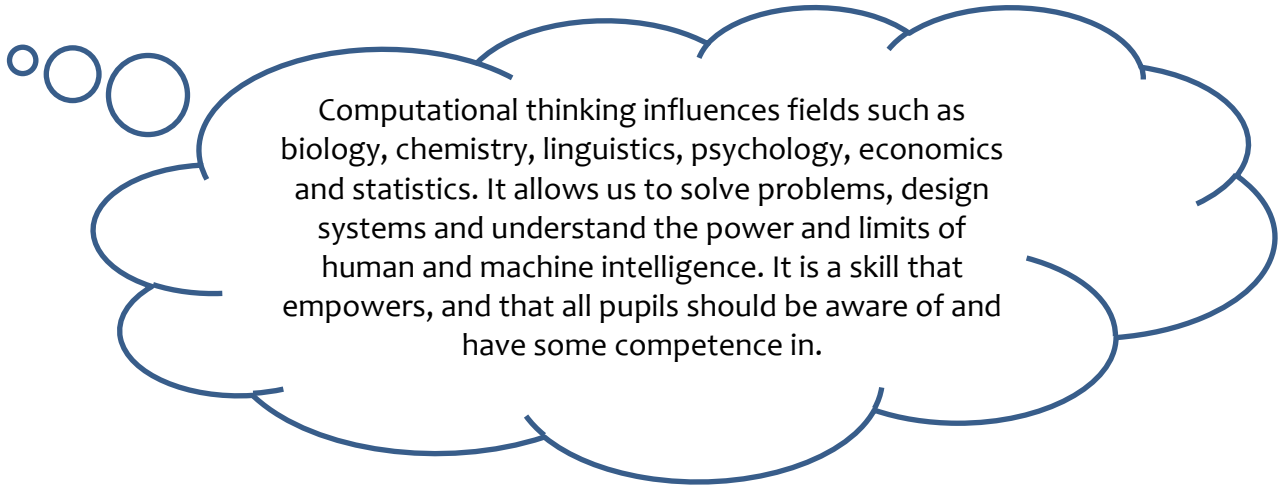
# Other Documents

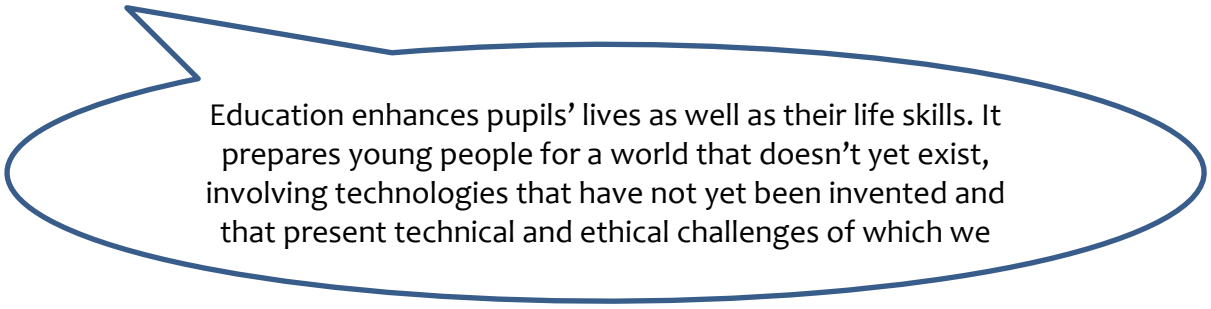
Please also refer to the following documents for further and supporting information:

- Online Safety policy
- Acceptable Usage policy
- Information Security policy
- Year group overviews indicating Curriculum Coverage

The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn.

(Alvin Toffler discussing rapidly evolving technologies)




This policy will be reviewed in November 2024

Daniel Philo
Computing Leader
November 2023