

Walworth Primary School

“Supporting everyone’s emotional wellbeing and mental health, so that they can be listened to, are happy together and ready to learn.”



Walworth School Computing Policy

Intent, Implementation and Impact

Date: January 2021

Revision Due: January 2022

Ref: RB

(See also: Online Safety Policy, including Acceptable Use Policies, and Data Protection Policy)

Curriculum Intent Statement

At Walworth Primary School we endeavour to create a love of computing. Use of computers, as well as staying safe online, is a key skill in life today. We want every child to leave Walworth Primary not only having a solid foundation in computing but also to be good digital citizens in the modern world. We recognise that each child has their own starting point upon entry to our school, and progress is measured in line with those starting points to ensure every child can celebrate success. Most children who join Walworth Primary School already have a good understanding and enthusiasm for technology. Therefore, the primary aim is to channel that enthusiasm and knowledge in a way that enables them to succeed. When children leave Walworth Primary School, we endeavour to make sure they have the skills to:

- Be independent and responsible lifelong learners.
- To think creatively when faced with challenges.
- Develop a rich subject specific bank of vocabulary.
- 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 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

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 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. Computing also ensures that pupils 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.

The National Curriculum in England 2013

Curriculum Implementation

Aims of Computing

All children should have access to the use of computing technologies regardless of gender, race, cultural background or physical or sensory disability. Where use of a school computer proves difficult for a child because of a disability, the school will endeavour to provide specialist equipment and software to enable access. Children with learning difficulties can also be given greater access to the whole curriculum through the use of these technologies. Their motivation can be heightened and they are able to improve the accuracy and presentation of their work. This in turn can raise self-esteem.

At Walworth Primary School, our aims are 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 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

Planning

In Computing, as with all subjects, in order to develop the continuity and progression of teaching and learning, a balance between whole class, individual and group work, and direct teaching, pupil investigation and skills practice should be planned throughout the school whilst following the long-term plan. This plan enables children to access the curriculum in an organised and sequential way. By completing the scheme of work our children will have a deeper understanding of computers and how they can enhance our lives. They will also be more aware of the safety aspects surrounding computers, following our online safety programme (see online safety policy). Specific parts of the computing curriculum will be taught stand alone, but where possible parts of the curriculum will feed into other areas of the curriculum to help enhance delivery and outcome.

Teaching

In the foundation stage there is a holistic approach to the delivery of the EFS Curriculum where children are free to access different areas of the curriculum in a way that enhances their professional development. There are opportunities for children to access technology and computers in addition to adult led sessions. In both Key Stage 1 and Key Stage 2 Computing is taught on average for 45 minutes per week. This occurs during timetabled sessions organised by each class teacher. Within these sessions' children will be shown the following areas;

- Coding and computational thinking
- Spreadsheets
- internet and email
- art and design
- music
- databases and graphing
- writing and presenting
- communication and networks

In addition to this part of the ICT curriculum can be taught using other areas of the curriculum as drivers. For example, creating presentations during history enquiry.

Assessment

By the end of each Key Stage, pupils are expected to know, apply and understand the matters, skills and processes outlined in the relevant programme of study.

Key Stage 1

By the end of Key Stage 1 children should be able 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
- Use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet
- Recognise common uses of information technology beyond school

Key Stage 2

By the end of Key Stage 2 children should be able 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 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
- Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour
- 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

(Progression of skills is detailed in the appendix, provided by Durham County Council as guidance.)

Record Keeping

- On-going formative assessment is an integral part of good practice. Its main purpose is to enable the teacher to match work to the abilities and needs of the children and ensure progression in learning. Assessment trackers are completed by the adult delivering the sessions at the end of every term.
- Computing skills capability should be monitored regularly in relation to the Computing curriculum as outlined in the 'The National Curriculum' for England. Teachers should assess module requirements with reference to children's knowledge, understanding and skills. Other opportunities for assessment will arise from cross-curricular work.
- Samples of work should be kept for groups of children stored in classrooms or on the school network within relevant class folders. It is the job of class teachers to collect this evidence so that it is easily accessible to the Computing Subject Lead.
- For Nursery and Reception, it may not always be practical to keep samples of work, but observations and discussions could be recorded.

Curriculum Impact

Our approach to the curriculum results in a fun, engaging, and high-quality computing education. The quality of children's learning is evident on Education City, a digital platform where pupils complete tasks to achieve the objectives of the curriculum, as well as other resources the school has invested in. Evidence such as this is used to feed into teachers' future planning, and as an enquiry-based approach continues to be developed, teachers are able to revisit misconceptions and knowledge gaps in computing when teaching other curriculum areas. This supports varied paces of learning and ensures all pupils make good progress.

Much of the subject-specific knowledge developed in our computing lessons equip pupils with experiences which will benefit them in secondary school, further education and future workplaces. From research methods, use of presentation and creative tools and critical thinking, computing at Walworth Primary School gives children the building blocks that enable them to pursue a wide range of interests and vocations in the next stage of their lives.

Health and Safety

Children should not be responsible for moving heavy equipment around the school. They may load software but should not be given the responsibility of plugging in and switching machines on without a member of staff present.

Food and drink should not be consumed near Computing equipment.

- It is the responsibility of staff to ensure that classroom computing equipment is stored securely, cleaned regularly and that resources are fully returned and are clean and tidy after use
- Staff should ensure that the children are seated at the computers comfortably and be aware of the dangers of continuous use (e.g. eye/wrist strain etc.)
- An adult should always supervise children when they are accessing information via the internet. The service provider does filter information but staff are advised to take great care on the content accessed by children and ultimately responsible for information accessed by pupils

Links to the school development plan

- The Computing Subject Leader produces an action plan yearly.
- An audit of resources is undertaken yearly to ensure that hardware and software are kept as up to date as possible and that obsolete or broken machines are scrapped or repaired.

Staff training

Needs will be met by:

- Auditing staff skills and confidence in the use of information technologies regularly;
- Arranging training for individuals as required;
- The Computing Leader should attend courses and support and train staff as far as possible.
- Annual online safety training (at least) must be arranged and completed by all staff working with children
- All staff must receive training on professional conduct and safer working practices regarding technologies such as Twitter, Facebook, Blogging etc.

Review and evaluation procedures

The everyday use of communication technology is developing rapidly, with new technology being produced all the time. This policy therefore will be reviewed and revised on a yearly basis. The Computing Subject Lead will liaise regularly with staff, both at staff meetings and informally, to monitor the effectiveness of the policy and the Computing curriculum. Meetings with subject co-ordinators will also ensure that the use of information technologies across the curriculum is planned for and evaluated.

Present resource provision

At this time the school has 20 laptops that are stored in a secure laptop trolley, 10 iPads that are kept in the subject leader's room in a secure cabinet. All devices have access to the internet through the managed wireless system. In addition to this, there is a variety of other ICT equipment in school including: Bee-Bots, Pro-Bots, radios, CD players, projectors and headphones. A variety of software is available for all machines. The school also has a subscription Education City and Discovery Education to teach the computing curriculum.

Within school there are also 4 printers in the school offices as well as 7 desk top machines and one laptop. These are for the relevant staff to complete their daily tasks. School, also has a photocopier that all machines are linked to. All teachers have a school laptop (10 devices) in order to complete work away from the classroom when needed. All classes (10 in total) have a laptop assigned, these are for support staff and children when needed.

To ensure that copyright laws are adhered to, staff, volunteers, pupils and parents are not permitted to run software brought in from outside school on school machines.

An online safety policy has been developed in order to allow the safe and efficient use electronic devices for both staff and pupils in an educational context with Acceptable Use Policies in place for all users.

Staff confidence and expertise will be developed if requested through training sessions provided by the Computing Subject Lead, Online Safety Officer, LA and external agencies. Support will be given, where possible, with Computing planning and teaching by the Computing co-ordinator & support from the LA.

Glossary of Terms

Abstraction

Only focussing on the details relevant to the task, in computing this may be by using a database to handle data. In doing this the data can be looked at in specific groups. An example is using Target Tracker to show the progress of pupils on Pupil Premium.

Logic

The non-arithmetic operations performed by a computer, such as sorting, comparing, and matching, that involve yes-no decisions. This might be completed using programs such as Excel or Flowol.

Algorithms

The step-by-step procedure for a machine to complete a task, for example the instructions given to a Pro-Bot to guide it round a track, or the instructions put into a Bee-Bot to guide it through a maze.

Data Representation

The way in which information is presented. In its simplest form this could be representing a data set as a graph. However it is also using the appropriate software for the task. Not everything has to be done in Word or PowerPoint.

Appendix

Computing Long Term Plan – To be created.

Progression in Computing- (Document from Durham County Council)

	Year 1/2	Year 3/4	Year 5/6
Computer Science	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> · 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 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> · design write and debug programs that accomplish specific goals,.....solve problems by decomposing them in smaller parts · use sequence, selection and repetition in programs · use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> · design, write and debug programs that accomplish specific goals; including controlling or simulating physical systems and solving 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
	<p><i>For instance:</i></p> <p><i>Pupils learn to program a basic floor turtle such as a BeeBot to navigate increasingly complex routes and are able to debug their instructions when the turtle does not reach the intended destination</i></p> <p><i>Pupils learn to program an onscreen app such as BeeBot or Kodable to complete a set task and are able to debug their instructions when the turtle does not reach the intended destination</i></p> <p><i>Pupils use a more complex turtle with standard units to navigate increasingly complex routes, and are able to debug their instructions when the turtle does not reach the intended destination</i></p> <p><i>Extension - Pupils learn to use a simple graphical programming language such as Logo, Scratch or Turtle to navigate around the screen</i></p> <p><i>Extension - Pupils create a 3D environment, using a graphical language such as Kodu. They link this to a story such as an island adventure</i></p>	<p><i>For instance:</i></p> <p><i>Pupils learn to use graphical programming language, such as Scratch or Logo to draw regular 2D shapes. Pupils add loops or procedures to create a repeating pattern</i></p> <p><i>Pupils learn to sequence instructions, for instance to create an animation using Scratch, or by using the timing features in PowerPoint</i></p> <p><i>Pupils write a simple algorithm, for instance to create a basic traffic light sequence. They then use flowcharting software (such as Go or Flowgo) to create a simple program to control an onscreen icon</i></p> <p><i>Extension - Pupils create a simple game using a graphical language such as Kodu or Scratch</i></p>	<p><i>For instance:</i></p> <p><i>Pupils write a simple algorithm, for instance to create a basic traffic light sequence. They then use flowcharting software (such as Go or Flowgo) to create a simple program to control an onscreen icon. They are able to explain how their program works</i></p> <p><i>Pupils create a computer game, using a graphical language such as Scratch or Kodu</i></p> <p><i>Extension – Pupils learn to use and program a raspberry pi to complete a basic task</i></p>
	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> · recognise common uses of information technology beyond school 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> · recognise common uses of information technology beyond school 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> · 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
	<p><i>For instance:</i></p> <p><i>Pupils learn about some of the uses of the internet</i></p>	<p><i>For instance:</i></p> <p><i>Pupils learn to collaborate electronically by blogging - mailing and working on shared documents using the pupil sites of the DLG</i></p>	<p><i>For instance:</i></p> <p><i>Pupils learn to collaborate electronically by blogging-mailing, and working on shared documents using the pupil sites of the DLG. This can be extended to working with other schools</i></p> <p><i>Pupils learn that connected devices exchange packets of data and this can convey a range of information</i></p>

		from a text to a video call
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	Year 1/2	Year 3/4	Year 5/6
Digital Literacy	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> · use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content on the internet or other online technologies 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> · Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> · use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
	<p><i>For instance:</i></p> <p><i>Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information</i></p> <p><i>Pupils are introduced to the concept that real people send messages to one another on the Internet and learn how messages are sent and received. They recognise that it may be difficult to distinguish between someone who is real and someone who is not</i></p> <p><i>Pupils are introduced to the basics of online searching</i></p> <p><i>Pupils learn to explore websites and to say whether they like them or not and why</i></p>	<p><i>For instance:</i></p> <p><i>Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information</i></p> <p><i>Pupils learn to make good passwords for their accounts, learn about spam and how to deal with it. They begin to understand the implications for the information that they share online and how some websites might use that information without their knowledge</i></p> <p><i>Pupils are introduced to their roles as digital citizens in an online community, where they reflect on how they are responsible not only for themselves but for others, in order to create a safe and comfortable environment</i></p> <p><i>Pupils learn that the Internet is a public space and then develop the skills to protect their privacy and respect the privacy of others</i></p> <p><i>Pupils explore how they interact with others and are introduced to the concept of cyberbullying. They also learn how to communicate to be a responsible member of a connected culture effectively in order to prevent miscommunication</i></p>	<p><i>For instance:</i></p> <p><i>Pupils learn that the internet is a great place where online relationships can be developed. They compare and contrast online friends and real life, face to face friends and learn how to respond if an online friend asks them a personal question</i></p> <p><i>Pupils learn to create secure passwords for their accounts, learn about spam and how to deal with it, and decode website privacy policies, understanding the implications for the info that they share online</i></p> <p><i>Pupils explore their roles as digital citizens in an online community, where they reflect on their responsibilities and learn that good digital citizens are responsible and respectful in the digital world</i></p> <p><i>Pupils begin to explore the nature of online audiences and permanency of information online. They begin to understand the significance of published information and personal information</i></p> <p><i>Pupils understand what it means to be a good digital citizen as they interact with others online by understanding how to prevent and respond to cyberbullying. They also learn how to communicate effectively to prevent miscommunication in order to be a responsible member of a connected culture</i></p> <p><i>Pupils begin to consider the impact of their online presence on their own self- image and the way others see them and explore how to construct a positive online profile</i></p> <p><i>Pupils learn the 'do's and don'ts' of copying and pasting information to avoid plagiarism. They learn how to avoid plagiarism by putting information in their own words, putting excerpted information into quotes, and providing citations. They learn to show respect for other people's creations by giving them credit</i></p>

	<ul style="list-style-type: none"> · use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content 	<ul style="list-style-type: none"> · use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content
	<p><i>For instance:</i> Pupils are introduced to the basics of online searching, including how to use effective keywords. They also learn to conduct searches that provide them with the most helpful and relevant information</p>	<p><i>For instance:</i> Pupils explore issues relating to online searching, including how to use effective keywords, using directories and subject categories, and how to analyse the usefulness and relevancy of the results. They learn to conduct searches that provide them with the most helpful and relevant information Pupils develop skills for evaluating websites, online information and advertising by rating the trustworthiness and usefulness of websites, and learning to identify the different types of online advertising</p>

	Year 1/2	Year 3/4	Year 5/6
ICT	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> · use technology purposefully to create, organise, store, manipulate and retrieve digital content 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> · 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 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> · 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
	<p><i>For instance:</i> <u>Digital Publishing:</u> Pupils learn to use basic word processing package and to write and illustrate a short story <u>Presentation:</u> Pupils learn to make simple presentations <u>Graphics:</u> Pupils learn to create a simple digital painting <u>Animations:</u> Pupils learn to make a simple animation for instance in Puppet Pals <u>Media:</u> Pupils learn to use digital cameras and microphones for a purpose <u>Working with data:</u> Pupils learn to create and use a pictogram <u>Modelling:</u> Pupils explore online simulations such as Charlie Chimp</p>	<p><i>For instance:</i> <u>Digital Publishing:</u> Pupils learn how to use software to create an e-book, brochure or poster on a given subject <u>Presentations:</u> Pupils learn to write and deliver a presentation on a given subject <u>Graphics:</u> Pupils learn how to take, adapt or create images to enhance or further develop their work <u>Animations:</u> Pupils learn how to develop a storyboard and then create a simple animation using for instance 'Puppet Pals' or 'Stop Motions' Animation' <u>Sound and video:</u> Pupils record and edit media to create a short sequence <u>Working with data:</u> Pupils learn to search, sort and graph information</p>	<p><i>For instance:</i> <u>Digital Publishing:</u> Pupils learn how to use software to create an e-book, brochure or poster on a given subject, incorporating a range of media <u>Presentations:</u> Pupils learn to write and deliver a presentation, incorporating a range of media <u>Graphics:</u> Pupils learn how to take, adapt or create images to enhance or further develop their work and incorporate it in a wider project <u>Animations:</u> Pupils learn how to develop a storyboard and then create a simple animation using for instance Puppet pals' or 'Stop Motions Animation' - this may be extended by editing the final product in using video editing software <u>Sound and video:</u> Pupils record and edit media to create a short sequence - extended by editing the final product in using video editing software <u>Working with data:</u> Pupils learn to search, sort and graph information <u>Modelling:</u> Pupils learn how to use a spreadsheet to model data</p>