

Our Computing Curriculum



Our Aim

As Computing is an increasing part of life today it is essential that all pupils gain the confidence and ability that they need in this subject to prepare them for the challenge of a rapidly developing and challenging technological world. Computing at Parkside will enhance and extend children's learning across the whole curriculum whilst developing motivation and social skills.

Our aim is to ensure that all pupils:

- Can design, write and debug programs that accomplish specific goals
- Use logical reasoning to explain how algorithms work and to detect and correct errors in algorithms and programs
- Use technology safely, respectfully and responsibly. We ensure that children are aware of the possible risks when using the internet by making online safety a regular part of Computing lessons and through whole school assemblies and visits from outside agencies
- Can select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content.
- Understand computer networks, including the internet, and the opportunities they offer for communication and collaboration.

The learning environment should contribute to the development of these skills and we will always endeavour to provide access to suitable, up to date equipment and emerging technologies. We have a computing suite with 30 computers and a teaching whiteboard. Every classroom is equipped with an interactive whiteboard and we have iPads for each year group. We subscribe to National Online Safety who provide comprehensive online safety training to pupils, parents/carers, staff and governors.

In the Early Years Foundation Stage (EYFS), children in Nursery and Reception will follow the expectations of the EYFS Framework. The level of development children should be expected to have attained by the end of the EYFS is defined by early learning goals (ELGs).

Despite Computing not being explicitly mentioned within the Early Years Foundation Stage (EYFS) statutory framework, there are many opportunities for young children to use technology to solve problems and produce creative outcomes.

Computing learning is covered within all 7 areas of the EYFS (including both prime and specific areas). Opportunities are provided for the children to experience technology throughout their learning journey in the EYFS.

Our Computing Curriculum Construction

The aim of the Computing curriculum at Parkside is to provide exciting and rigorous learning that addresses the challenges and opportunities offered by the technologically rich world in which we live. Parkside pupils studying computing will gain an understanding of technology as used in real-world systems and in creating purposeful products. At Parkside, pupils use the *Purple Mash* scheme of work which, as well as including a wide range of computing software and class-based ideas, includes assessment tools and individual storage space for each child to save and share work. The learning journey in computing enables pupils to self-evaluate and look for next steps to aim for, with an emphasis on problem-solving and using their learning creatively to extend their knowledge. With computing technology having an ever-growing influence on our daily lives, it is also vital that pupils are taught to engage with the online world safely and effectively. The Parkside computing curriculum ensures a balanced coverage of the three strands of the computing curriculum:

- **Computer science**
- **Information technology**
- **Digital literacy**

Children have experiences of all three strands in each year group, but the subject knowledge imparted becomes increasingly specific and in depth, with more complex skills being taught, thus ensuring that learning is scaffolded and all National Curriculum requirements are covered.

Computing is an invisible footprint across all aspects of a child's life. A high-quality computing curriculum equips children to use computational thinking and creativity to understand and change the world. Computing has links with mathematics, science and design and technology with insights into both natural and artificial systems. **Computer Science** is the core of computing where children are taught the principles of information and computation, how digital systems work and how to put this knowledge to use through programming. From here pupils are equipped to use **information technology** to create programs, systems and a range of

content. Computing also ensures that our children are **digitally literate**; able to use, express themselves and develop ideas through information technology as participants in the digital world and in the future workplace. Computing is taught using a blocked curriculum approach with discrete lessons, this ensures children are able to develop depth in their knowledge and skills over the duration of each of their computing topics. Purple Mash's computing scheme is used as a starting point for the planning of their computing lessons, which can be richly linked to engaging contexts in other subjects and topics. All year groups at Parkside have their own set of iPads and each classroom has an interactive whiteboard to ensure that all pupils have the opportunity to use a range of devices and programs for many purposes across the wider curriculum. Employing cross-curricular links motivates pupils and supports them to make connections and remember the steps they have been taught. Cross-curricular learning in all year groups, using software such as PowerPoint, develops their online competency in using keyboards and creating interesting visual content. Online safety is taken extremely seriously and is embedded within the curriculum. Our Online Safety Policy provides guidance for teachers and children about how to use the internet safely. Each year group participates in lessons on online safety, children understand how to stay safe when using technology and Online safety days are held annually to address current issues. We also have a Parkside- specific song [*Stay Safe On The Internet*] to encourage the children to think carefully about online safety.

Progress and assessment

The skills taught are mapped against the National Curriculum and the *Purple Mash* Scheme of Work. Each year group has a computing folder containing lesson plans and assessment material. Teachers reference codes to each statement and the unit(s) this most explicitly relates to. There are documents containing a skills progression overview for teachers and child friendly 'I can' statements for each computing strand. There is provision in the planning for children who show a good understanding to be able to challenge themselves as well as structures for children who may require additional support. The curriculum is structured in such a way that different strands of computing knowledge are developed throughout the

primary school journey from simple ideas in KS1 to more advanced, open-ended learning possibilities in subsequent year groups. Active learning involves children physically engaging with technology and encourages decision making in how a task could be achieved, with an encouragement to extend knowledge based on understanding of the main task.

Resources to support the computing curriculum

Parkside has invested significantly in keeping pace with advances in technology and online learning and pupils have a range of resources to use in school, or to extend their learning in their own time. Parkside has a dedicated computing suite, with 30 desktop computers that enable every child to work independently but also allows space for mixed-ability collaborative working on projects. As well as *Purple Mash* software, the school has access to *Discovery Education's Experience* platform that includes lots of cross-curricular games and video content. *Times Tables Rock Stars* has proved a popular and useful way to encourage pupils to learn their times tables in a competitive and fun way in school or at home. Similarly, we have invested in the *Accelerated Reader* programme to motivate the children to read at home. We subscribe to *Active Maths* and *Maths of the Day*, to enrich learning in this subject. Also, where we have adopted commercial schemes of work [Geography, Music, P.E. and MFL] we have ensured that the online resources are rich and diverse and help to engage the children in their learning.

Computing at Parkside is designed to allow children to use problem solving skills, creativity and exploration to develop a passion and good understanding of a subject that will be an increasingly important part of everyday life.

Computing Curriculum Overview

	Autumn				Spring				Summer		
Nursery	Miraculous Me Communication and Language: Giving verbal instructions and understanding them				Trusty Transport Mathematics: Directional/positional language/ observing patterns				Awesome Animals Expressive Arts and Design: Creating artwork on tablets (linked to our Expressive Arts focus)		
Reception	Class artist focus Digital artwork	Being safe while using technology Online Safety	Festivals and Celebrations Literacy: Using BeeBots to support the sequencing of a story		Online Safety	People Who Help Us Personal, Social and Emotional Development: Voice recordings to record feelings/Tips for using technology safely and being online/ Record videos of each other role-playing different roles in our society			Online Safety	We are Explorers Understanding the World/ Expressive Arts and Design: Find out about famous explorers/ Create pictures of them using technology	By the Sea Physical Development: Fine motor skills development using a keyboard and a mouse
1			Programming technology Using Bee Bots	Grouping and Sharing		Maze Explorers-Following instructions	Animated stories using an iPad			Technology outside of school	Coding for beginners-Year 1
2			Making basic tunes and music	Art/ Design-Making an E-card		Effective Searching Online	Basic PowerPoint skills Including typing skills	Coding Skills-Year 2		Coding- Year 2 Advanced	Technology around us (and how we use it)

Computing Curriculum Overview

	Autumn			Spring			Summer			
3	Class artist focus Digital artwork	Online Safety- Advanced	Understanding email and sending it correctly	Online Safety- Advanced	The basics of animation	Graphing	Online Safety- Advanced	Coding- Year 3 Advanced		Digital simulations
4			Coding- Year 4 Advanced		Animation- Advanced	Year 4 PowerPoint skills- Advanced		Logo	Making Music- Advanced	
5			Y5 PowerPoint skills- Advanced		Coding- Year 5 Advanced Using Chromebooks			Word processing- Advanced	Logo- Advanced	
6			Y6 PowerPoint skills- Advanced		Coding- Year 6 Advanced Using Chromebooks	Game Creator- Creating programmes		Text Adventures- An E-story for younger children	Film Making	

PSHE and Online Safety Overview

At Parkside, we acknowledge the growing use of technology in today's modern world and how awareness of online safety can play an important part in our children's well-being. Our PSHE curriculum contains additional online safety elements that complement the learning already taking place in our Computing lessons.

YEAR GROUP	AUTUMN TERM			SPRING TERM			SUMMER TERM	
	Online Safety element covered			Online Safety element covered			Online Safety element covered	
EYFS	Health, wellbeing and lifestyle	Online relationships		Managing online information	Privacy and security	Online bullying Online reputation	Self-Image	Copyright and Ownership
1	Health, wellbeing and lifestyle	Online relationships		Managing online information	(PSHE) Online bullying	Online bullying Online reputation	Self-Image	Copyright and Ownership
2	Health, wellbeing and lifestyle	Managing online information		Online relationships	Image sharing (PSHE)	Online bullying Copyright and Ownership	Online reputation	Self-Image
3	Health, wellbeing and lifestyle	Self-Image		Managing online information	(PSHE) making friends	Online relationships Online reputation	Privacy and Security	Online bullying
4	Health, wellbeing and lifestyle	Self-Image		Managing online information	Online relationships Online reputation	(PSHE) Online bullying	Copyright and ownership	Privacy and Security
5	Health, wellbeing and lifestyle	Privacy and Security		Managing online information	Online bullying	Image sharing (PSHE)	Copyright and ownership	Self-Image
6	Health, wellbeing and lifestyle	(PSHE) making friends	Online reputation	Online relationships	(PSHE) In-app purchases	Privacy and security	Self-Image	Copyright and Ownership

Progression of Relevant Computing Vocabulary

EYFS

	Nursery	Reception
Computer Science	On, Off, Switch, Follow, Behind, Below, Top, Move, Turn, Tap	Backwards, Forward, Instruction, Sound, Moving, Problem, Record, Play, Stop, Click, Zoom
Information Technology	Buttons, Count, Collect, Picture, Take	Command, Computer, Keyboard, Keys, Mouse, Movement, Phone, Camera, Remote, Set of photos, Type, Video, App
Digital Literacy	Choices, Create, Share	Safe, Internet, Information, Technology, Website

Progression of Relevant Computing Vocabulary

KS1 and KS2

Computer Science

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
algorithm create command organise sequence softwarestore program	algorithm blocks command debug execute manipulate organise scripted sequence software sprite store predict program retrieve reverse engineer	algorithm block language command debug execute input output loops manipulate organise program repetition scripted sequence simulation sprite software store program physical system repetition retrieve reverse engineer	algorithm block language command collaboration debug encrypted execute HTTP input output loops manipulate organise program repetition scripted selection sequence simulation sprite software store packets of data program physical system repetition retrieve reverse engineer URL	algorithm block languagecommand control collaboration debug decomposition encrypted execute HTTP input output loops manipulate organise program repetitions scripted selection sequence simulation sprite software store packets of data program physical systemrepetition retrieve reverse engineer URL	algorithm block language command control collaboration debug decomposition encrypted execute hardware HTTP input IP address output loops manipulate organise program repetition scripted selection sequence simulation sprite software store packets of data program physical system repetition

Information Technology

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
digital content digital devices computer network	data digital contentdigital devices network	data digital content digital devices network safe search mode search technologies software	cached collecting data digital content digital devices network safe search mode search technologies server software	cached collecting data digital content digital devices evaluating network	safe search mode search technologies server software

Digital Literacy

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
personal information world wide web	password personal informationprivate world wide web	command evaluating digital content password personal information private world wide web	acceptable/unacceptable behaviours command evaluating digital content password personal information private world wide web	acceptable/unacceptable behaviours command encryption evaluating digital content password personal information private world wide web	acceptable/unacceptable behaviours command detect encryption evaluating digital content password personal information private responsibility world wide web

Progression of Computing Skills- EYFS

Nursery

	Skills relevant to Computing:
Communication and Language	• Listen to who is speaking • Ask questions • Make comments about the world around them
Personal, Social and Emotional Development	• Remember some basic rules and follow (with some adult support)
Physical Development	• Explore use of fine motor skills by pressing, moving and manipulating objects
Understanding the World	• Explore how things around them work
Expressive Arts and Design	• Explore artistic effects digitally
Literacy	• Use vocabulary already learnt to talk to adults and peers
Mathematics	• Begin to understand simple patterns in pictures • Begin to understand simple directional language

Progression of Computing Skills- EYFS

Reception

	Skills relevant to Computing:
Communication and Language	• Listen with attention • Ask questions that are relevant to a topic • Ask further questions to support their understanding
Personal, Social and Emotional Development	• Talk about important rules and instructions and follow them • Show a sense of resilience when facing problems • Show some understanding of personal wellbeing • Show some understanding of 'sensible' screen time while using technology- make links back to home life
Physical Development	• Refine fine motor skills by pressing, moving and manipulating objects/ tools and technology such as tablets, keyboards and remotes
Understanding the World	• Talk about how things around them work- explain understanding
Expressive Arts and Design	• Explore and refine artistic effects digitally and explain about them • Take creative photographs
Literacy	• Use vocabulary learnt to talk to adults and peers and explain themselves verbally • Understand the main points of a discussion
Mathematics	• Understand simple patterns • Understand simple directional language • Follow simple sequences

Progression of Computing Skills- KS1

Year 1

Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that an algorithm written for a computer is called a program.

Children can work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash and can write their own simple algorithm, e.g. Colouring in a Bird activity. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code, e.g. Bubbles activity in 2Code.

When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Children can, for example, interpret where the turtle in 2Go challenges will end up at the end of the program.

Children are able to sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2Count.

Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.

Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash.

Computer Science

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.

Information Technology

Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

Digital Literacy

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.

Year 2

Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code.

Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors, e.g. Debug Challenges: Chimp.Children's program designs display a growing awareness of the need for logical, programmable steps.

Children can identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program.

Children demonstrate an ability to organise data using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions within 2Sequence. Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound.

Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. They can share this knowledge, e.g. 2Publish example template. Children make links between technology they see around them, coding and multimedia work they do in school e.g. animations, interactive code and programs.

Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically such as posting work to the Purple Mash display board. They develop an understanding of using email safely by using 2Respond activities on Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult.

Computer Science	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.
Information Technology	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.
Digital Literacy	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.

Progression of Computing Skills- KS2

Year 3

Children can turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts. Their design shows that they are thinking of the desired task and how this translates into code. Children can identify an error within their program that prevents it following the desired algorithm and then fix it.

Children demonstrate the ability to design and code a program that follows a simple sequence. They experiment with timers to achieve repetition effects in their programs. Children are beginning to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. Children understand how variables can be used to store information while a program is executing.

Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, 'if' statements, repetition and variables. They make good attempts to 'step through' more complex code in order to identify errors in algorithms and can correct this. e.g. traffic light algorithm in 2Code. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately.

Children can list a range of ways that the internet can be used to provide different methods of communication. They can use some of these methods of communication, e.g. being able to open, respond to and attach files to emails using 2Email. They can describe appropriate email conventions when communicating in this way.

Children can carry out simple searches to retrieve digital content. They understand that to do this, they are connecting to the internet and using a search engine such as Purple Mash search or internet-wide search engines.

Children can collect, analyse, evaluate and present data and information using a selection of software, e.g. using a branching database (2Question), using software such as 2Graph. Children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails, e.g. 2Respond.

Children demonstrate the importance of having a secure password and not sharing this with anyone else. Furthermore, children can explain the negative implications of failure to keep passwords safe and secure. They understand the importance of staying safe and the importance of their conduct when using familiar communication tools such as 2Email in Purple Mash. They know more than one way to report unacceptable content and contact.

Computer Science

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.

Information Technology

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.

Digital Literacy

Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.

Year 4

When turning a real-life situation into an algorithm, the children's design shows that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. Children make more intuitive attempts to debug their own programs.

Children's use of timers to achieve repetition effects are becoming more logical and are integrated into their program designs. They understand 'if statements' for selection and attempt to combine these with other coding structures including variables to achieve the effects that they design in their programs. As well as understanding how variables can be used to store information while a program is executing, they are able to use and manipulate the value of variables. Children can make use of user inputs and outputs such as 'print to screen'. e.g. [2Code](#).

Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, 'if' statements, repetition and variables. They can trace code and use step-through methods to identify errors in code and make logical attempts to correct this. e.g. traffic light algorithm in 2Code. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately.

Children recognise the main component parts of hardware which allow computers to join and form a network. Their ability to understand the online safety implications associated with the ways the internet can be used to provide different methods of communication is improving.

Children understand the function, features and layout of a search engine. They can appraise selected webpages for credibility and information at a basic level. .

Children are able to make improvements to digital solutions based on feedback. Children make informed software choices when presenting information and data. They create linked content using a range of software such as 2Connect and 2Publish+. Children share digital content within their community, i.e. using Virtual Display Boards.

Children can explore key concepts relating to online safety using concept mapping such as 2Connect. They can help others to understand the importance of online safety. Children know a range of ways of reporting inappropriate content and contact.

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	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.
Information Technology	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.
Digital Literacy	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.

Year 5

Children may attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts. Children are able to test and debug their programs as they go and can use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code.

Children can translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. They are combining sequence, selection and repetition with other coding structures to achieve their algorithm design.

When children code, they are beginning to think about their code structure in terms of the ability to debug and interpret the code later, e.g. the use of tabs to organise code and the naming of variables.

Children understand the value of computer networks but are also aware of the main dangers. They recognise what personal information is and can explain how this can be kept safe. Children can select the most appropriate form of online communications contingent on audience and digital content, e.g. 2Blog, 2Email, Display Boards.

Children search with greater complexity for digital content when using a search engine. They are able to explain in some detail how credible a webpage is and the information it contains.

Children are able to make appropriate improvements to digital solutions based on feedback received and can confidently comment on the success of the solution. e.g. creating their own program to meet a design brief using 2Code. They objectively review solutions from others. Children are able to collaboratively create content and solutions using digital features within software such as collaborative mode. They are able to use several ways of sharing digital content, i.e. 2Blog, Display Boards and 2Email.

Children have a secure knowledge of common online safety rules and can apply this by demonstrating the safe and respectful use of a few different technologies and online services. Children implicitly relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others.

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	Use sequence, selection and repetition in programs; work with variables and various forms of input and output.
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	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.
Digital Literacy	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.

Year 6

Children are able to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs. Children test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem.

Children translate algorithms that include sequence, selection and repetition into code and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures, including nesting structures within each other. Coding displays an improving understanding of variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions.

Children are able to interpret a program in parts and can make logical attempts to put the separate parts of a complex algorithm together to explain the program as a whole.

Children understand and can explain in some depth the difference between the internet and the World Wide Web. Children know what a WAN and LAN are and can describe how they access the internet in school.

Children readily apply filters when searching for digital content. They are able to explain in detail how credible a webpage is and the information it contains. They compare a range of digital content sources and are able to rate them in terms of content quality and accuracy. Children use critical thinking skills in everyday use of online communication.

Children make clear connections to the audience when designing and creating digital content. The children design and create their own blogs to become a content creator on the internet, e.g. 2Blog. They are able to use criteria to evaluate the quality of digital solutions and are able to identify improvements, making some refinements.

Children demonstrate the safe and respectful use of a range of different technologies and online services. They identify more discreet inappropriate behaviours through developing critical thinking, e.g. 2Respond activities. They recognise the value in preserving their privacy when online for their own and other people's safety.

Computer Science

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.

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Information Technology

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

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Digital Literacy

Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.

Spiritual, Moral, Social and Cultural Development in Computing

Overarching

In Computing, pupils have the opportunity to:

- Use the internet to research and communicate.
- Consider the consequences, advantages, disadvantages and dangers of privacy, cyber bullying, making 'virtual friends'.
- Understand the need for respect for themselves and others when using media sites.
- Formulate and articulate their opinions of their own work, and the work of other people, and to express these with awareness and sensitivity towards others.
- Broaden and strengthen cultural experiences.
- Take part in a wide variety of different activities which require social skills, the ability to work collaboratively as part of a pair or group, as part of their class and as part of the school.

Spiritual development

Spiritual education provides opportunities for reflection of awe and wonder about the achievements of ICT today and possibilities for the future. Pupils have the opportunity to reflect on issues – such as how computers can sometimes perform better in certain activities than people. Pupils' spiritual development, their sense of self and will to achieve is promoted by teachers valuing their contributions and endeavour.

Children:

- Reflect on their own and others' lives and the impact computer science has on this.
- Discuss the power and limitations that computing can have – particularly on individual's beliefs.
- Develop self-esteem through the presentation of work to others.
- Explore how ideas in computing have inspired others.
- Experiment with and trust their own beliefs and ideas.

Moral development

Moral education in computing provides opportunities for pupils, enabling them to reflect on the possible consequences of different actions and situations. It can raise issues and moral dilemmas, such as whether it is morally right to have computer games whose aim is killing and violence, reflecting on rules around these, e.g. age. They also have opportunities to discuss whether it is right that some people in this country and in other countries do not have access to the internet; as well as debating the sharing/selling of personal data and the consequences.

Children:

- Are taught good etiquette when using digital technology, including mobile devices, with due regard to e-safety.
- Are encouraged to respect other people's views and opinions.
- Develop respect in the use of digital equipment and its impact on the environment – ink and paper wastage.
- Explore moral issues around the use of digital technology – copyright and plagiarism.
- Express their own responses and opinions of the work of others with a justification for their view.

Social development

Parkside children always work collaboratively and this encourages encourages social development. Computing can also help pupils to express themselves clearly and to communicate.

Children:

- Are encouraged to assist each other when problem solving.
- Use appropriate social behaviours and to interact as part of a caring community.
- Are taught good practice and respect in the use of social networking.
- Work collaboratively as a matter course.

Cultural development

Cultural education involves breaking through linguistic and cultural barriers through e-mailing or chatting across the world (eg Skype).

New opportunities to communicate through different media are discussed with the children – such as social media. Pupils have opportunities to explore aspects of their own culture and they can also begin to make connections between different cultures.

Children:

- Use digital technology sensibly in the classroom and are encouraged to do the same at home.
- Are empowered to use and apply their computing skills to the wider curriculum.
- Respect and develop an awareness and appreciation of how differing cultural, spiritual and religious views might differ towards the use of digital technology.

Essential Characteristics Endpoint of a Learner in Computing in the EYFS

By the end of Reception every child will be able to:

- Understand that technology can help us in everyday life
- Follow a 'code' by using simple instructions
- Take a photograph using technology
- Use technology or an app to create artwork
- Know about different types of technology
- Understand that keeping safe while using technology and going online is important
- Know who they can speak to if they are unhappy about anything they see online

Essential Characteristics Endpoint of a Learner in Computing

The intent of the Computing curriculum at Parkside Primary School is to provide every pupil with:

- Competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects.
- The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity.
- An understanding of the connected nature of devices.
- The ability to communicate ideas well by using applications and devices throughout the curriculum.
- The ability to collect, organise and manipulate data effectively.
- The ability to use, and express themselves and develop their ideas through, information and communication technology. They are digitally literate.
- The ability to be active participants in a digital world.
- A passion for the subject and knowledge of up-to-date technological innovations, products and systems.