

Computing at Meadows First School (Vision and Ethos)

The 5 principles of our curriculum are: *Unique Child, Positive Relationships, Key Knowledge & Skills, Love of Learning, Global Citizens* We embed these 5 principles within our Computing Curriculum as follows:

We equip children with the physical and digital computing **skills, vocabulary and knowledge** necessary for the next stage of their learning journey. Knowledge and skills are sequential and built upon to develop progress in Computing across the school. Vocabulary development plays a vital role in this. We want children to be able to computing as a logical and scientific means for problem solving through programming and to use terminology purposefully and skillfully. Both Key Stages also have a physical skill to develop. Key Stage 1's focus is on mouse manipulation and control: clicking and dragging, as well as single and double clicks. Key Stage 2's main focus is typing. Year 3 will complete a beginner's module on touch typing developing use of home keys and 2-hand typing. Throughout Key Stage 2, all children will partake in regular typing testing encouraging typing as a lifelong skill alongside reading and writing.

Our **digital and physical systems** curriculum embeds deep learning, ignites curiosity and broadens our children's awareness of cultural capital in Computing. For example, our children are introduced to coding and robotics with beebots and 2code in Key Stage 1. In Key Stage 2, children apply their coding knowledge into more complex crumble robotics and take part in a coding competition with a local game designer. We want children to develop a thirst for learning by using memorable and purposeful learning experiences: creating their own games through a variety of coding programs, linking the creative to the scientific. Through our digital platform Purple Mash, children have the opportunity to continue and grow their enjoyment of computing at home, sharing and creating projects with family and friends as well as working collaboratively in school.

We want our children to use the vibrancy of our great country, to learn from other cultures, respect diversity, and appreciate what they have. We achieve this by providing a strong SMSC curriculum, with British Values and our core values placed at the heart of everything we do. This feeds into the Computing curriculum where children learn to become kind and responsible digital citizens of the world. Understanding the benefits and uses of a World Wide Web to promote togetherness and collaboration across boundaries and cultures. We want children to feel empowered to make a difference and affect changes as **global citizens** to their community and the world in which they live. E.g. children design games and other digital content aimed at educating people to the importance of bees and the challenges they face.

At Meadows First School we can all become Computer programmers! We develop the holistic child, acknowledging their unique needs and ensuring all children are able to access the Computing curriculum. EG: we support all of our children with a range of equipment that caters for all needs. All of our children will have the opportunity to explore digital and physical systems at their own pace in tinkering sessions, all have the chance to develop their physical skills that help them to interact with a wide range of technologies, and all have the opportunity to share their work with teachers and students. Children use Meadows Mouse to develop lifelong learning habits to be;

Enthusiastic: to have a go and experience a range of interfaces and systems and to talk enthusiastically about their content.
Determined: We encourage a growth mindset, with high expectations, so children are proud to share and talk about their computing work.

Focused: We want them to have no ceiling to their achievements and to grow up wanting to be programmers, content producers, creators or enjoy an exciting STEM career!
Organised: We aim for our children to be independent and confident to use equipment safely as well as selecting the right equipment for the right piece of work.
 We are proud of what we can achieve!

Love of Learning

key knowledge & skills

Global citizens



Positive Relationships

Unique child

The Computing curriculum at Meadows supports the development of positive, respectful relationships. We encourage children to work together in Computing, supporting and encouraging each other, as well as reflecting on and critically evaluating each other's work. We enable parents to support and encourage their children's computing work by investing in a digital platform which can be viewed and accessed at home.

Life in 21st Century has become dominated by our use of technology and children face a unique challenge growing up not just with the opportunities of technology provides but also the pitfalls and dangers, especially with cyber-bullying and negative effects of social media. Allowing children to access simulated scenarios to help them gain practical hands-on experience of the challenges and potential dangers of using the internet form a key part of our digital literacy content within our curriculum. **All children also spend time during internet safety day exploring how their individual actions can help to create a kinder digital world as well as building the resilience necessary to tackle cyber-bullying and not only support themselves on their digital journey but protect the interests and feelings of others too.**

MEADOWS FIRST SCHOOL LONG TERM PLAN - Computing

Intent (National Curriculum Aim/School Curriculum aims i.e global etc)

For all children to be able to access and interact with a range of computing devices appropriately and confidently. Becoming increasingly fluent with physical control manipulation of keyboard, mouse and touchscreen. Enjoying and identifying the benefits and positive effects of technology in daily life and developing a passion for solving problems through technology. To Become literate in computing language and coding sequences and nurture a caring attitude towards others through communication technology.

		<i>Autumn Term</i>		<i>Spring Term</i>		<i>Summer Term</i>	
<i>Implementation</i>		<i>Autumn 1</i>	<i>Autumn 2</i>	<i>Spring 1</i>	<i>Spring 2</i>	<i>Summer 1</i>	<i>Summer 2</i>
<i>Rights Respecting</i>		<i>I have the right to Friends. Article 15</i>	<i>I have the right to be safe. Article 19.</i>	<i>I have the right to be listened to. Article 12:</i>	<i>I have the right to play and rest. Article 31</i>	<i>I have the right to water/food. Article 24</i>	<i>The right to a good quality education. Article 28</i>
Nursery	Theme:	Settling In Marvellous Me	Celebrations Special times	STEM Machines!	My Wonderful World People	My wonderful World Nature	Fantasy Fun Transition
	<i>National Curriculum</i>		<p>Understanding the World – Technology: N4</p> <p><i>Knows that information can be retrieved from computers</i></p>	<p>Understanding the World – Technology: N1</p> <p><i>Knows how to operate simple equipment, e.g. turns on CD player and uses remote control.</i></p> <p>Understanding the World – Technology: N2</p> <p><i>Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.</i></p> <p>Understanding the World – Technology: N3</p>			

				Shows an interest in technological toys with knobs or pulleys			
	<i>Skills</i>		<p>Children should be able to identify a desktop/laptop & tablet and understand these to be computers. Children should also understand that interactive whiteboards and the content displayed through them (including sound) is coming from the computer it is connected to.</p>	<p>Children can identify key generic interface technological symbols that appear on remote controls and electrical devices including but not limited to: play button (triangle symbol) stop button (square), pause (two lines) On/off master switch (circle cut with line) tracking (horizontal arrow buttons) and can predict what should happen to a device when pressed</p> <p>Children to be encouraged to interact with beebots and codeapillar and comment on what happens when they input directional commands.</p> <p>Children to be encouraged to describe the effect of interacting with knobs and pulleys on simple toys (input/output). Expressing in terms of ordering actions (when I do this, this happens)</p>			

	<i>Program/interface</i>		<i>Laptop, interactive Whiteboard</i>	<i>Beebots/codeapillar/physical electronic devices</i>			
Reception	Theme:	Marvellous Me		Around the World & Beyond		Once Upon a Tale	All Creatures Great and Small
	<i>National Curriculum</i>	<p>Understanding the World – Technology: R1</p> <p>Completes a simple program on a computer.</p>	<p>Understanding the World – Technology: R2</p> <p>Uses ICT hardware to interact with age-appropriate computer software.</p>	<p>Understanding the World – Technology: R3</p> <p>Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.</p>	<p>Understanding the World – Technology: R2</p> <p>Uses ICT hardware to interact with age-appropriate computer software.</p>	<p>Understanding the World – Technology: R2</p> <p>Uses ICT hardware to interact with age-appropriate computer software.</p>	<p>Understanding the World – Technology: R1</p> <p>Completes a simple program on a computer.</p> <p>Understanding the World – Technology: R2</p> <p>Uses ICT hardware to interact with age-appropriate computer software.</p>
	<i>Skills</i>	<p>Children should (with guidance) complete a simple creative document such as digital painting, to achieve a specific objective. Children should focus on tablet technology (ipads and interactive whiteboards) to achieve this through touch interface to select and change colours, brush sizes etc when colouring in templates. Children can place a target in the room and create a</p>	<p>Children should use Mini Mash to engage with a range of simple programs that are primarily visual based: digital jigsaws and painting projects, to help strengthen and stimulate touch interfaces. Children should be given opportunity to select variables within these tasks e.g. colour and interact with selection menus.</p>	<p>Using SimpleCity in MiniMash, children can identify technological equipment in a chosen environment and understand how the technology is useful in this area, eg. Thermometer for taking temperature of pets at the vets, cement mixer for mixing the cement.</p> <p>How do you think the builder might use technology? - Measuring things with digital measure. - Using machinery to cut, mix</p>	<p>Children should use Mini Mash to engage with a range of simple programs that are primarily visual based: digital jigsaws and painting projects, to help strengthen and stimulate touch interfaces. Children should be given opportunity to select variables within these tasks e.g. colour and interact with selection menus</p>	<p>Children should use Mini Mash to engage with a range of simple programs that are primarily visual based: digital jigsaws and painting projects, to help strengthen and stimulate touch interfaces. Children should be given opportunity to select variables within these tasks e.g. colour and interact with selection menus.</p>	<p>Children should (with guidance) complete a simple creative document such as digital painting, to achieve a specific objective. Children should focus on tablet technology (ipads and interactive whiteboards) to achieve this through touch interface to select and change colours, brush sizes etc when colouring in templates. Children can place a target in the room and create a</p>

		<p>correct sequence on Codeapillar to reach that target with simple directional blocks. Children can complete a digital jigsaw by dragging correct pieces together to create a digital image.</p>		<p>and measure. - Machinery to lift and move the materials. - Websites to give information to the customers.</p> <p>There are lots of different environment to explore together including, building site, farm and vets. Provide children with a range of household tools to interact with.</p>			<p>correct sequence on Codeapillar to reach that target with simple directional blocks. Children can complete a digital jigsaw by dragging correct pieces together to create a digital image.</p> <p>Children should use Mini Mash to engage with a range of simple programs that are primarily visual based: digital jigsaws and painting projects, to help strengthen and stimulate touch interfaces. Children should be given opportunity to select variables within these tasks e.g. colour and interact with selection menus.</p>
	<p><i>Program /interface</i></p>	<p>All about me Pin Interactive Whiteboard / tablets</p>		<p>Purplemash Simple city Interactive Whiteboard / tablets</p>		<p>Fairytale Pin Interactive Whiteboard / tablets</p>	<p>Farm & Minibeasts Pins Purplemash simple city Interactive Whiteboard / tablets</p>

	Theme	Making SENSE of our world (our senses)	Memory box (Toys including materials)	Our Town, Bromsgrove	Animal Allsorts	Let's Explore Africa	Famous for More than Five Minutes
Year one	National Curriculum	<i>DL2: 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.</i>	<i>CS1: understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions CS2: create and debug simple programs CS3: use logical reasoning to predict the behaviour of simple programs</i>	<i>IT1: use technology purposefully to create, organise, store, manipulate and retrieve digital content</i>	<i>CS1: understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions CS2: create and debug simple programs CS3: use logical reasoning to predict the behaviour of simple programs</i>	<i>IT1: use technology purposefully to create, organise, store, manipulate and retrieve digital content</i>	<i>DL1: recognise common uses of information technology beyond school</i>
	Skills <i>Curric obj. code</i>	DL2 <i>Click and drag, typing</i> <i>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.</i>	CS1,2,3 <i>Click and drag</i> <i>Children can work out what is wrong with a simple algorithm when the steps are out of order.. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code</i> <i>When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of</i>	IT1 <i>Typing/ tap interface</i> <i>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, create databases and charts for information</i>	CS1,2,3 <i>Click and drag</i> <i>Children can work out what is wrong with a simple algorithm when the steps are out of order.. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code</i> <i>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</i>	IT1 <i>Numerical keys – mouse control/tap interface</i> <i>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, create databases and charts for information</i>	DL1 <i>Typing/mouse control</i> <i>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.</i>

			<p>the overall effect of the program.</p> <p>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.</p>		<p>overall effect of the program.</p> <p>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.</p>		
	Program/ interface	Computer PM – Avatar Creator, 2Paint, 2write, 2explore	Computer PM - 2go	Ipad PM – 2create a story	Computer PM – 2code	Ipad/computer PM 2calculate	Computer PM - Writing templates
Year 2	Theme	Oh I do like to be Beside the Seaside	Keeping Healthy	Chocolate: That's Not fair!	Knights and Castles	Plants and Animals	Pirates
	National Curriculum	DL2: 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.	<p>CS1: understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</p> <p>CS2: create and debug simple programs</p> <p>CS3: use logical reasoning to predict the behaviour of simple programs</p>	IT1: use technology purposefully to create, organise, store, manipulate and retrieve digital content	IT1: use technology purposefully to create, organise, store, manipulate and retrieve digital content	DL1: recognise common uses of information technology beyond school	IT1: use technology purposefully to create, organise, store, manipulate and retrieve digital content
	Skills Curric obj. code	<p>DL2 Typing, online safety scenarios</p> <p>Children know the implications of inappropriate online</p>	<p>CS1,2,3 Tap and drag, selecting from droplists</p> <p>Children can create a simple program that achieves a specific</p>	<p>IT1 Numerical keys Tap input</p> <p>Children demonstrate an ability to organise data using, for</p>	<p>IT1 Information input</p> <p>Children demonstrate an ability to organise data using, for example, a database and can retrieve</p>	<p>DL1 Browser interface, typing Evaluating sources</p> <p>Children can effectively retrieve</p>	<p>IT1 Click and drag</p> <p>Children demonstrate an ability to organise data using, for example, a database</p>

		searches. Children begin to understand how things are shared electronically. They develop an understanding of using email safely by and know ways of reporting inappropriate behaviours and content to a trusted adult.	purpose. They can also identify and correct some errors. 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 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.	example, a database and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions. 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.	specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions. 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.	relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. Children make links between technology they see around them, coding and multimedia work they do in school e.g. animations, interactive code and programs.	and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions. 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.
	Program/ interface	iPad -2respond/ 2email	lpad – tap interface 2code	lpad/computer 2calculate	lpad – 2question, 2investigate, 2calculate	lpad, Internet browser, 2quiz	Computer/laptop2paint
	Theme	Stone Age to Iron Age	Can I Run Faster Than Usain Bolt? Happy, Healthy Bodies	Forces and Magnets Light	Rocks and Soils Year 3 Production	Life of Plants Romans vs Britain	Blue Planet
	National Curriculum	CS1: design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	IT1: use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content DL1: use technology safely, respectfully and responsibly; recognise	IT2: 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,	IT2: 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,	CS4: 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	CS1: design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

Year 3		<p>CS2: use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>CS3: use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p>	<p>acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p>	<p>evaluating and presenting data and information</p>	<p>evaluating and presenting data and information</p>		
	<p>Focus-Physical skills/knowledge</p> <p>Curric obj. code</p>	<p>CS1,2,3 Algorithms – sequence, selection and repetition 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</p>	<p>DL1 IT1 Digital communication – typing, evaluating information 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 e-mail or chat forums. They know more than one way to report unacceptable content and contact.</p>	<p>IT2 numerical input – drop menu selection Children can collect, analyse, evaluate and present data and information using a selection of software. Given a choice, children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails.</p>	<p>IT2 – two handed typing, use of home keys, finger/key correspondence Children can collect, analyse, evaluate and present data and information using a selection of software. Given a choice, children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails.</p>	<p>CS4 Appropriate communication – evaluating information, typing 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. They can describe appropriate email conventions when communicating in this way.</p>	<p>CS1 – controlling physical systems Crumble Robotics program 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.</p>

		<p>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.</p>	<p>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.</p>				
	<p>Program/ interface</p>	<p>Ipads/laptop 2-code</p>	<p>Laptops – 2blog, 2connect</p>	<p>Ipads – 2calculate</p>	<p>Laptops - 2type</p>	<p>Laptop – 2email</p>	<p>Laptop – Crumble robotics</p>

Year 4	Theme	Were the Dark Ages really dark?	Switch it Off Sound and Electricity	The Amazing Amazon	Beautiful Bromsgrove/ animals and habitats	The Good, The Bad, the Ugly States of Matter	Where does my Food go?
	National Curriculum	<p><i>CS4: 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</i></p> <p><i>DL1: use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</i></p> <p><i>IT1: use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</i></p>	<p><i>CS1: design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</i></p> <p><i>CS2: use sequence, selection, and repetition in programs; work with variables and various forms of input and output</i></p> <p><i>CS3: use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</i></p> <p><i>IT2: 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</i></p>	<p><i>CS1: design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</i></p> <p><i>CS2: use sequence, selection, and repetition in programs; work with variables and various forms of input and output</i></p> <p><i>CS3: use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</i></p>	<p><i>IT2: 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</i></p>	<p><i>IT2: 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</i></p>	

	<p><i>Focus- Physical skills/ knowledge</i></p> <p><i>Curric obj. code</i></p>	<p>DL1, IT1, CS4 Caring communication, typing, Safe search – browser interface - Identifying uses of computer hardware as part of network system</p> <p>Children can explore key concepts relating to online safety. They can help others to understand the importance of online safety. Children know a range of ways of reporting inappropriate content and contact.</p> <p>IT1 Safe search – browser interface</p> <p>Children understand the function, features and layout of a search engine. They can appraise selected webpages for credibility and information at a basic level.</p> <p>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</p>	<p>CS1,2,3 IT2 Algorithm If/Else values repetition and abstraction in code</p> <p>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.</p>	<p>CS1,2,3 Algorithm – if values and repetition</p> <p>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. Children’s designs for their programs show that they are thinking</p>	<p>IT2 Numerical input – drag and drop</p> <p>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. Children share digital content within their community.</p>	<p>IT2 Image capture, sequence and selection</p> <p>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. Children share digital content within their community.</p>	
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		<p><i>different methods of communication is improving.</i></p>	<p><i>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.</i></p> <p><i>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. Children share digital content within their community.</i></p>	<p><i>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.</i></p>			
	<p><i>Program/ interface</i></p>	<p><i>Ipad - 2connect, 2publish Laptop/ipad – web browser, 2quiz, 2connect</i></p>	<p><i>Laptop – 2Code</i></p>	<p><i>Laptop - 2logo</i></p>	<p><i>Laptop – 2calculate</i></p>	<p><i>iPad – 2animate</i></p>	

Computing Skills Document

Nursery Technology Objective	30-50 Months skill/knowledge outcome	EYFS 40-60 month Technology Objective	40-60+ months skill/knowledge outcome
<p>Understanding the World – Technology: N1</p> <p>Knows how to operate simple equipment, e.g. turns on CD player and uses remote control.</p>	<p>Children can identify key generic interface technological symbols that appear on remote controls and electrical devices including but not limited to: play button (triangle symbol) stop button (square), pause (two lines) On/off master switch (circle cut with line) tracking (horizontal arrow buttons) and can predict what should happen to a device when pressed.</p>	<p>Understanding the World – Technology: R1</p> <p>Completes a simple program on a computer.</p>	<p>Children should (with guidance) complete a simple creative document such as digital painting, to achieve a specific objective. Children should focus on tablet technology (iPad and interactive whiteboards) to achieve this through touch interface to select and change colours, brush sizes etc. when colouring in templates. Children can place a target in the room and create a correct sequence on Codeapillar to reach that target with simple directional blocks. Children can complete a digital jigsaw by dragging correct pieces together to create a digital image.</p>
<p>Understanding the World – Technology: N2</p> <p>Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.</p>	<p>Children to be encouraged to interact with beebots and Codeapillar and comment on what happens when they input directional commands.</p>	<p>Understanding the World – Technology: R2</p> <p>Uses ICT hardware to interact with age-appropriate computer software.</p>	<p>Children should use Mini Mash to engage with a range of simple programs that are primarily visual based: digital jigsaws and painting projects, to help strengthen and stimulate touch interfaces. Children should be given opportunity to select variables within these tasks e.g. colour and interact with selection menus.</p>
<p>Understanding the World – Technology: N3</p> <p>Shows an interest in technological toys with knobs or pulleys,</p>	<p>Children to be encouraged to describe the effect of interacting with knobs and pulleys on simple toys (input/output).</p>	<p>EYFS ELG Technology Objective</p>	<p>Using Simple City in MiniMash, children can identify technological equipment in a chosen environment and understand how the technology is useful in this area, e.g. Thermometer for taking temperature of pets at the vets, cement mixer for mixing the cement.</p> <p>How do you think the builder might use technology? - Measuring things with digital measure. - Using machinery to cut, mix and measure. - Machinery to lift and move the materials. - Websites to give information to the customers.</p>

<p>Understanding the World – Technology: N4</p> <p>Knows that information can be retrieved from computers</p>	<p>Children should be able to identify a desktop/laptop & tablet and understand these to be computers. Children should also understand that interactive whiteboards and the content displayed through them (including sound) is coming from the computer it is connected to.</p>	<p>Understanding the World – Technology: R3</p> <p>Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.</p>	<p>There are lots of different environment to explore together including, building site, farm and vets. Provide children with a range of household tools to interact with.</p>
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KS1 Objective	Year 1 skill/knowledge outcome	Year 2 skill/knowledge outcome	KS2 Objective	Year 3 skill/knowledge outcome	Year 4 skill/knowledge outcome
<p>Computer Science</p> <p>Create and debug simple programs.</p>	<p>Children can work out what is wrong with a simple algorithm when the steps are out of order. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code</p>	<p>Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors.</p>	<p>Computer Science</p> <p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</p>	<p>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.</p>	<p>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.</p>
			<p>Computer Science</p> <p>Use sequence, selection and repetition in programs; work with variables and various forms of input and output.</p>	<p>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.</p>	<p>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.</p>

					<i>Children can make use of user inputs and outputs.</i>
Computer Science <i>Use logical reasoning to predict the behaviour of simple programs.</i>	<i>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.</i>	<i>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.</i>	Computer Science <i>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</i>	<i>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.</i>	<i>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.</i>
Computer Science <i>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</i>	<i>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.</i>	<i>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.</i>	Computer Science <i>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.</i>	<i>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. They can describe appropriate email conventions when communicating in this way.</i>	<i>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.</i>
Information Technology <i>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</i>	<i>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, create databases and charts for information</i>	<i>Children demonstrate an ability to organise data using, for example, a database and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions. Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their</i>	Information Technology <i>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</i>	<i>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.</i>	<i>Children understand the function, features and layout of a search engine. They can appraise selected webpages for credibility and information at a basic level.</i>

		<i>digital content including photos, text and sound.</i>			
Digital Literacy <i>Recognise common uses of information technology beyond school.</i>	<i>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.</i>	<i>Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. Children make links between technology they see around them, coding and multimedia work they do in school e.g. animations, interactive code and programs.</i>	Information Technology <i>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.</i>	<i>Children can collect, analyse, evaluate and present data and information using a selection of software. Given a choice, children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails.</i>	<i>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. Children share digital content within their community.</i>
Digital Literacy <i>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.</i>	<i>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.</i>	<i>Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically. They develop an understanding of using email safely by and know ways of reporting inappropriate behaviours and content to a trusted adult.</i>	Digital Literacy <i>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.</i>	<i>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 e-mail or chat forums. They know more than one way to report unacceptable content and contact.</i>	<i>Children can explore key concepts relating to online safety. They can help others to understand the importance of online safety. Children know a range of ways of reporting inappropriate content and contact.</i>



Computing

At Meadows, our aim is to prepare the children of today for the exciting, ever-more technological world around them. We believe in the importance of all pupils becoming digital citizens, learning how to use technology safely and responsibly, enjoying the many benefits technology has to offer in their lives.

Our computing curriculum is predominantly delivered through the **Purple Mash** online educational platform. This whole-school approach allows children to retain their interface knowledge and

build upon their computing skills as they progress through Meadows. All children at Meadows will explore computing through the use of desktop machines, laptops, tablets and physical robotic systems. Reflecting the National Curriculum objectives, our approach follows 3 key strands:

Coding and Programming

Coding and Programming Children will begin their journey into programming by interacting with and learning to control Bee-bot robots in EYFS. When they enter Key Stage 1, they will develop their understanding of creating instructions

(algorithms) to achieve specific goals using programs like 2Code in Purple Mash. Our pupils will develop their knowledge of controlling digital systems towards the end of Key Stage 1 applying greater complexity in their own coding as well as developing problem solving skills when debugging incorrect programs. Once they have a confident foundation in Key Stage 1, our pupils extend their knowledge of digital systems and begin to create their very own computer games in Year 3 as they learn to abstract their code into more succinct patterns and sequences. Through guided projects children will learn to identify and debug increasingly complex digital systems that require multiple-step solutions. Year 3 will then transfer their new knowledge into physical system robotics and learn to control light circuits through programming to create real-world computing projects. As they progress through Key Stage 2, children will then extend their programming skills with Logo, a Purple Mash program designed to teach children the basic principles of CAD design, combining their knowledge of algorithms with mathematical precision and reasoning.

Throughout their time at Meadows, children will also learn about how technology has helped solved many problems in our modern-day society and, in turn, will learn to problem solve like a computer and think about the positive impact technology has on our everyday lives in the hopes of inspiring and encouraging our pupils to become active producers of technology and not just passive consumers.



Interfaces and Information Technology.

Technology comes in all sorts of shapes and sizes and experiencing a wide range of physical and digital platforms is vital to help our children become digital citizens and develop a mastery of skills across a wide context range. In Key Stage 1, children develop their fine motor control using a computer mouse to create digital artwork. They will also begin to use keyboards and use Word processors to develop their 1:1 keyboard coordination skills. In Key Stage 2, children will take part in regular typing fluency tests to help them become confident and accurate typists. Children will also learn how to input numerical data and apply formulas in data entry platforms. Children will also learn to manipulate images and text to create posters using Purple Mash programs. Throughout their computing journey at Meadows, all children will have the opportunity to use mobile technology alongside desktop machines and laptops. This is important to ensure all children have equal opportunity to develop and apply their physical computing skills across a wide range of hardware and software.



Digital Literacy and Internet Safety

As the internet becomes a more increasing presence in our lives, we believe it is more vital than ever that our current generation of children learn how to responsibly interact with the online networks within the safe environment of school. In Key stage 1, children will learn to assess how they interact with the internet and will learn what programs and games they use that use the internet to work. Children will also explore how the internet allows people to communicate to one another and understand the importance of how they choose to communicate with people through online platforms. In Key Stage 2, children will learn how to use search engines and evaluate the quality of the information they receive. Children will be taught the importance of keeping personal information safe as well as looking at how companies will use their information. As well as exploring the internet, all children will learn how to be responsible and caring members of the online community with regular sessions that focus on the recognition and prevention of cyber-bullying. While much of our program is theoretical in approach, pupils in Key Stage 2 will use practical experiences to help embed their understanding of internet interaction through class blogs and pupil email. These experiences will allow children to evaluate and regulate how they use internet communication services while under careful supervision.

