

Computing Skills Progression Map from Nursery to KS1/2 (2019/20)

Computing – EYFS Expectations for Nursery

Pupils should be taught to:

- Investigate how to push, pull, lift or press parts of toys and domestic equipment.
- Explore the control technology of toys, e.g. toy electronic keyboard.
- Talk about electronic toys, what they do, what they can do with it and how to use it safely
- Become familiar with simple equipment, such as twisting or turning a knob.
- To be to recognise computers and other devices and begin to use them with adult supervision.
- Coordinate actions to use technology purposefully, for example, use buttons to dial a telephone number.
- Click on different icons to cause things to happen in a computer program.

Year Group	Autumn	Spring	Summer
Nursery (EYFS Development Matters)	<u>Ourselves</u> <u>Food</u>	<u>Under the Sea</u> <u>On the Farm</u>	<u>Nursery Rhymes – Miss Polly had a Dolly Superheroes</u>
Nursery			
To Code	To Connect	To Communicate	To Collect
Anticipates repeated sounds, sights and actions, e.g. when an adult demonstrates an action toy several times.	Knows that information can be retrieved from computers	Knows how use electronic devices with care	Knows how to operate simple equipment, e.g. turns on CD player and uses remote control.
Shows interest in toys with buttons, flaps and simple mechanisms and beginning to learn to operate them.	Demonstrates fine/gross motor skills using the mouse to create marks on the screen.	Asks an adult for permission to use a computer /To ask an adult for help	Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or or iPads.
	Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car	Understand how be kind to friends online	Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.
	Seeks to acquire basic skills in turning on and operating some Computing equipment.	Demonstrates fine/gross motor skills using the mouse to create marks on the screen.	

Computing – EYFS Expectations for Reception

Pupils should be taught to:

- Investigate how to push, pull, lift or press parts of toys and domestic equipment.
- Explore the control technology of toys, e.g. toy electronic keyboard.
- Talk about electronic toys, what they do, what they can do with it and how to use it safely
- Become familiar with simple equipment, such as twisting or turning a knob.
- To be to recognise computers and other devices and begin to use them with adult supervision.
- Coordinate actions to use technology purposefully, for example, use buttons to dial a telephone number.
- Click on different icons to cause things to happen in a computer program.
- Talk about the effect of their actions as they investigate what things can do.
- Be able speculate on the reasons why things happen or how things work.
- Understand that computers and other devices can be used to access the internet
- Begin to understand how to stay safe online and some of the benefits and hazards of using the internet with adult supervision.

Reception (EYFS Development Matters)	<u>Myself and My Family</u> <u>Celebrations</u>	<u>Everyday Materials</u> <u>Minibeasts</u>	<u>Once Upon a Time</u> <u>Shopping</u>
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Reception

To Code	To Connect	To Communicate	To Collect
Anticipate repeated sounds, sights and actions, e.g. when an adult demonstrates an action toy several times.	Knows that information can be retrieved from computers	Use digital devices with care Understands that computers can be used to access the internet	Can to operate simple equipment, e.g. turns on CD player and uses remote control.
Shows interest in toys with buttons, flaps and simple mechanisms and beginning to learn to operate them.	Demonstrates fine/gross motor skills using the mouse to create marks on the screen. Seeks to acquire basic skills in turning on and operating some ICT equipment	To stay safe online To ask an adult for help	Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones.
Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images	Demonstrates fine/gross motor skills using the mouse to move objects. Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car	To be kind to my friends	Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.

Computing – National Curriculum Expectations for Key Stage 1

Pupils should be taught to:

- Understand what algorithms are: how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- Create and debug simple programs
- Use logical reasoning to predict the behaviour of simple programs
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.
- Recognise common uses of information technology beyond school
- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies

Year 1 National Curriculum KS1	<u>Animals including humans</u> <u>Seasonal Changes</u>	<u>Everyday materials</u> <u>Seasonal Changes</u>	<u>Plants</u> <u>Seasonal Changes</u>
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Year 1

To Code	To Connect	To Communicate	To Collect
Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions. Control motion by specifying the number of steps to travel, direction and turn.	Organise, store, manipulate and retrieve data in a range of digital formats.	Communicate safely and respectfully online, keeping personal information private and recognise common uses of information technology beyond school	Use simple databases to record information in areas across the curriculum.
Write and test simple programs. Control motion by specifying the number of steps to travel, direction and turn.	Participate in class social media accounts.	Use a range of applications and devices in order to communicate ideas, work and messages.	
Use logical reasoning to predict the behaviour of simple programs. Specify the nature of events (such as a single event or a loop).	Understand online risks and the age rules for sites.		

Year 2 National Curriculum KS1	<u>Uses of Everyday materials</u>	<u>Living things and their habitats</u>	<u>Animals including Humans</u> <u>Plants</u>

Year 2

To Code	To Connect	To Communicate	To Collect
Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions. Control motion by specifying the number of steps to travel, direction and turn.	Organise, store, manipulate and retrieve data in a range of digital formats.	Communicate safely and respectfully online, keeping personal information private and recognise common uses of information technology beyond school	Use simple databases to record information in areas across the curriculum.
Write and test simple programs. Select sounds and control when they are heard, their duration and volume	Participate in class social media accounts.	Use a range of applications and devices in order to communicate ideas, work and messages.	
Use logical reasoning to predict the behaviour of simple programs. Specify the nature of events (such as a single event or a loop).	Understand online risks and the age rules for sites.		

Computing – National Curriculum Expectations for Key Stage 2

Pupils should be taught to:

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- Use sequence, selection and repetition in programs; work with variables and various forms of input and output
- Use logical reasoning to explain how some simple algorithms work and detect and correct errors in algorithms and programs
- Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Year 3 National Curriculum KS2	<u>Rocks (Fossils)</u>	<u>Animals, including humans</u> <u>Plants</u>	<u>Light</u> <u>Forces and magnets</u>
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Year 3

To Code	To Connect	To Communicate	To Collect
<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>Use specified screen coordinates to control movement.</p>	<p>Collaborate with others online on sites approved and moderated by teachers.</p> <p>Contribute to blogs that are moderated by teachers.</p>	<p>Choose the most suitable applications and devices for the purposes of communication.</p> <p>Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally.</p>	<p>Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner.</p> <p>Devise and construct databases using applications designed for this purpose in areas across the curriculum.</p>
<p>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>Set the appearance of objects and create sequences of changes.</p>	<p>Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.</p> <p>Understand that comments made online that are hurtful or offensive are the same as bullying.</p>	<p>Use many of the advanced features in order to create high quality, professional or efficient communications</p>	

	Give examples of the risks posed by online communications.		
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Create and edit sounds. Control when they are heard, their volume, duration and rests	Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder. Understand the term 'copyright'.		
	Understand how simple networks are set up and used. Understand how online services work.		

Year 4 National Curriculum KS2	<u>States of matter</u> <u>Electricity</u>	<u>Living things and their habitats</u> <u>Sound</u>	<u>Animals including humans</u> <u>Plants</u>
Year 4			
To Code	To Connect	To Communicate	To Collect
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use specified screen coordinates to control movement.	Collaborate with others online on sites approved and moderated by teachers. Contribute to blogs that are moderated by teachers.	Choose the most suitable applications and devices for the purposes of communication. Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally.	Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. Devise and construct databases using applications designed for this purpose in areas across the curriculum.
Use sequence, selection, and repetition in programs; work with	Give examples of the risks of online communities and demonstrate	Use many of the advanced features in order to create high quality, professional or efficient communications	

<p>variables and various forms of input and output</p> <p>Set the appearance of objects and create sequences of changes.</p>	<p>knowledge of how to minimise risk and report problems.</p> <p>Understand that comments made online that are hurtful or offensive are the same as bullying.</p> <p>Give examples of the risks posed by online communications.</p>		
<p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p> <p>Create and edit sounds. Control when they are heard, their volume, duration and rests</p>	<p>Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder.</p> <p>Understand the term 'copyright'.</p>		
	<p>Understand how simple networks are set up and used.</p> <p>Understand how online services work.</p>		

<p>Year 5 National Curriculum KS2</p>	<p><u>Properties and Changes of Materials</u> <u>Forces</u></p>	<p><u>Earth and Space</u> <u>Living things and their habitats</u></p>	<p><u>Animals including humans</u></p>
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Year 5			
To Code	To Connect	To Communicate	To Collect
<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>Set IF conditions for movements. Specify types of rotation giving the number of degrees.</p>	<p>Collaborate with others online on sites approved and moderated by teachers.</p>	<p>Choose the most suitable applications and devices for the purposes of communication.</p>	<p>Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner</p>

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Change the position of objects between screen layers (send to back, bring to front).	Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.	Use many of the advanced features in order to create high quality, professional or efficient communications.	
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation.	Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder.		
	Understand the effect of online comments and show responsibility and sensitivity when online.		
	Understand how simple networks are set up and used.		

Year 6 National Curriculum KS2	Electricity Light	Evolution and inheritance	Animals including humans Living things and their Habitats
Year 6			
To Code	To Connect	To Communicate	To Collect
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	Collaborate with others online on sites approved and moderated by teachers.	Choose the most suitable applications and devices for the purposes of communication.	Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner
Use sequence, selection, and repetition in programs; work with	Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.	Use many of the advanced features in order to create high quality, professional or efficient communications.	

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 and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder.		
	Understand the effect of online comments and show responsibility and sensitivity when online.		
	Understand how simple networks are set up and used.		