

AFIS Progression in Learning Framework for Computing – KS 1

The overarching aim for Computing in the national curriculum is to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of **computer science**, including abstraction, logic, algorithms and data representation
- can analyse problems in **computational** terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply **information technology**, including new or unfamiliar technologies, analytically to solve problems
- are **responsible, competent, confident and creative users** of information and communication technology.

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

<p>Computer Science:</p> <p><u>Problem Solving</u></p> <ul style="list-style-type: none"> • understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions <p><u>Programming</u></p> <ul style="list-style-type: none"> • create and debug simple programs <p><u>Logical Thinking</u></p> <ul style="list-style-type: none"> • use logical reasoning to predict the behaviour of simple programs 	<p>Information Technology:</p> <p><u>Creating Content</u></p> <ul style="list-style-type: none"> • use technology purposefully to create, organise, store, manipulate and retrieve digital content 	<p>Digital Literacy:</p> <p><u>Using IT beyond School</u></p> <ul style="list-style-type: none"> • recognise common uses of information technology beyond school <p><u>Esafty</u></p> <ul style="list-style-type: none"> • use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies
<p>Knowledge:</p> <p><u>Problem Solving</u></p> <ul style="list-style-type: none"> • Understand what algorithms are • Understand that algorithms are implemented as programs on digital devices • Understand that programs execute by following precise and unambiguous instructions 	<p>N/A</p>	<p>Knowledge:</p> <p><u>Using IT beyond School</u></p> <ul style="list-style-type: none"> • Recognise common uses of information technology at home • Recognise common uses of information technology outdoors <p><u>Esafty</u></p> <ul style="list-style-type: none"> • Know how to use technology safely • Know how to keep personal information private • Know how to use technology respectfully • Know how to identify where to go for help and support when they have concerns about content or contact on the Internet or other online technologies

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<p>Skills:</p> <p><u>Programming</u></p> <ul style="list-style-type: none"> Create simple programs Debug simple programs <p><u>Logical Thinking</u></p> <ul style="list-style-type: none"> Use logical reasoning to predict the behaviour of own programs Use logical reasoning to predict the behaviour of others' programs 	<p>Skills:</p> <p><u>Creating Content</u></p> <ul style="list-style-type: none"> Use technology purposefully to create digital content Use technology purposefully to store digital content Use technology purposefully to retrieve digital content Use technology purposefully to organise digital content Use technology purposefully to manipulate digital content 	<p>Skills:</p> <p><u>Esafty</u></p> <ul style="list-style-type: none"> Use technology safely Keep personal information private Use technology respectfully Identify where to go for help and support when they have concerns about content or contact on the Internet or other online technologies
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	Interface with EYFS <i>Birth to 5 matters</i>	Yr 1 Autumn Small Steps	Yr 1 Spring Small Steps	Yr 1 Summer Small Steps	Yr 2 Autumn Small Steps	Yr 2 Spring Small Steps	Yr 2 Summer Small Steps	Interface with KS2
Computer Science:	<p>Completes a simple program on electronic devices</p> <p>Uses ICT hardware to interact with age appropriate computer software</p>	<p>Understand what simple algorithms are in programmable toys, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions</p> <p>1.1 1.2</p> <p>Create and debug simple programs using programmable toys</p>	<p>Covered in Autumn & Summer</p>	<p>understand what alternative algorithms are in an audio app, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions</p> <p>1.5</p> <p>create and debug simple programs using an audio app</p> <p>1.5</p>	<p>understand what a variety of algorithms are in a coding app, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions</p> <p>2.1 2.2</p> <p>create and debug simple programs using a coding app</p>	<p>Covered in Autumn</p>	<p>Covered in Autumn</p>	<p>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>correct errors in algorithms and programs</p>

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		<p>1.1</p> <p>Use logical reasoning to predict the behaviour of simple programs in programmable toys</p> <p>1.1</p>			<p>2.1</p> <p>use logical reasoning to predict the behaviour of simple programs in a computer using a coding app</p> <p>2.1 2.2</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>use logical reasoning to explain how some simple algorithms work and to detect and</p>
<p>Information Technology:</p>	<p>Can create content such as a video recording, stories, and/or draw a picture on screen</p>	<p>use technology purposefully to create, organise, store, manipulate and retrieve digital content using cameras on an Ipad</p> <p>1.2</p>	<p>use technology purposefully to create, organise, store, manipulate and retrieve digital content using creative apps</p> <p>1.3 1.4</p>	<p>use technology purposefully to create, organise, store, manipulate and retrieve digital content using audio apps and a spreadsheet program</p>	<p>Covered in Spring & Summer</p>	<p>use technology purposefully; a camera app on Ipad and using editing tools, to create, organise, store, manipulate and</p>	<p>use technology: an animation app purposefully to create an animation, organise, store, manipulate and retrieve digital content using an animation app</p>	<p>select, use and combine a variety of software (including internet services) on a range of digital</p>

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				1.5 1.6		retrieve digital content; 2.3 2.4	and a spreadsheet program 2.5 2.6	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:	Develops digital literacy skills by being able to access, understand and interact with a range of technologies Can use the internet with adult supervision to find and retrieve information	Recognise a few common uses of information technology beyond school 1.2	Recognise some common uses of information technology beyond school 1.3 1.4 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	Recognise a variety of common uses of information technology beyond school 1.5 1.6 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	Recognise common uses of information technology beyond school 2.2 use technology; a computer game safely and respectfully, keeping personal information private; 2.2	Recognise common uses of information technology beyond school 2.3 2.4 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	Recognise common uses of information technology beyond school 2.5 2.6 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	use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content understand computer networks, including

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	of interest to them		online technologies when using search engines on the internet , copyright 1.4	using a database, creating a tree 1.6		internet or other online technologies when using search engines on the internet 2.3 2.4	technologies using an animation app and a spreadsheet program 2.5 2.6	<p>the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration</p> <p>use technology safely, respectfully and responsibly; recognise acceptable /unacceptable behaviour; identify a range of ways to report concerns about content and contact</p>
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Switched on Computing Scheme (YEAR 1 & 2) (For Reference)		Unit 1.1 We are treasure hunters <i>(Solving problems using programmable toys – beebots)</i>	Unit 1.3 We are digital artists <i>(Creating work inspired by great artists -ipads)</i>	Unit 1.5 We are rhythmic <i>(Creating sound patterns in scratch junior & garage band)</i>	Unit 2.1 We are astronauts <i>(Programming on screen in scratch junior -1.1 +1.5)</i>	Unit 2.3 We are photographers <i>(Taking, selecting and editing digital images-2.5 + 2.6)</i>	Unit 2.5 We are animators <i>(Creating a stop-motion animation - 1.2 + 2.3)</i>	
		Unit 1.2 We are TV Chefs <i>(Filming the steps of recipe - camera/ipad)</i>	Unit 1.4 We are publishers <i>(Creating a multimedia ebook about our achievements- book creator/google photos, ipads))</i>	Unit 1.6 We are detectives <i>(Using data to solve clues- popplet)</i>	Unit 2.2 We are games' testers <i>(Working out the rules for a game - 2.1)</i>	Unit 2.4 We are safe researchers <i>(Researching a topic -1.4+ 1.6 + 2.3)</i>	Unit 2.6 We are zoologists <i>(Collecting data about bugs-1.6)</i>	
Milestone 1 – Year 1	<p>I know that a programmable toy can be controlled by inputting a sequence of instructions. I can record sequences of instructions as an algorithm (a sequence of precise instructions). I can program a robot to follow my algorithm. I can debug (correct) programs. I can predict how my program will work.</p> <p>I can break down a process into simple, clear steps (an algorithm). I can use different features of a video camera on iPad. I can use a video camera on an iPad to capture moving images. I can record a video using technology safely and respectfully. I can record an audio commentary. I can edit a video by adding an audio commentary. I can discuss my work and think about how it could be improved.</p>							
Milestone 2 – Year 1	<p>I can use tools in a creative iPad app to create artwork. I can edit and make changes to my work. I can store my digital artwork by saving it. I can retrieve my digital artwork.</p> <p>I know eBooks are a way of sharing stories digitally; without a physical book. I can plan and create a small multimedia eBook using a book creator app. I can choose and import images into my eBook. I can record audio commentary for my eBook. I can add text. I can edit text. I can store my eBook within the app, by saving it correctly. I can retrieve my eBook by finding the file name. I can think carefully about protecting my privacy, when using the internet. I can respect other people's copyright when searching for images on the internet to use in my eBook. I can revise and improve my work if needed.</p>							
Milestone 3 – Year 1	<p>I can create and record audio on a digital device (iPad). I can program sprites to playback recorded audio in an app (ScratchJr). I can create (program) repeating rhythms in an app (ScratchJr). I can explore different effects that can be applied to audio. I can edit and change (debug) my audio. I can create (program) a repeating percussion pattern using a virtual drum machine. I can manipulate my audio by experimenting with a range of virtual instruments.</p> <p>I can use technology safely to enter information into records. I can organise records into groups. I can create a tree to organise data. I understand what happens to a table of records when I put data into a form. I can use the filter tool on a table to find answers.</p>							
Milestone 1 – Year 2	<p>I can plan a sequence of instructions to move sprites in a coding app (ScratchJr). I can create programs for sprites in a coding app (ScratchJr). I can test programs for sprites in a coding app (ScratchJr). I can debug programs for sprites in a coding app (ScratchJr). I</p>							

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	<p>know how to input into a coding app (ScratchJr). I know what an output is in a coding app (ScratchJr). I can use the repetition tool in my coding program.</p> <p>I can observe carefully what happens in a computer game. I can describe carefully what happens in a computer game. I can use logical reasoning to make predictions of what a program will do. I can test my predictions to see if the program works. I can think critically about computer game. I can create sequences of instructions for a virtual robot to solve a problem. I can work out strategies for playing a game well. I am aware of how to use games safely; for limited periods of time.</p>	
<p>Milestone 2 – Year 2</p>	<p>I can understand what makes a good photo. I can say what makes a good photo. I can select and use the iPad camera app. I can take digital photographs. I can retrieve and review photographs that I take. I can reject and delete the photographs that I take. I can select the photographs that I take. I can edit and enhance my digital photographs. I can store my digital photographs. I know where my digital photographs are stored and I can retrieve them. I know I need to and I can tell an adult if I find images on the internet that give me Early Warning Signs. I can tell an adult if I find images on the internet that give me Early Warning Signs.</p> <p>I can use a mind-mapping app to display my research questions. I can use search engines to find information on the Internet. I know how to use key words or a question to find relevant information on the internet. I know that I need to tell an adult, if I have Early Warning Signs when searching on the internet. I can tell an adult, if I have Early Warning Signs when searching on the internet. I can create a multimedia presentation. I can present a multimedia presentation. I can store my presentation correctly.</p>	
<p>Milestone 3 – Year 2</p>	<p>I can see and explain how an animation works. I can use a storyboard to plan my own animation. I can create my own original characters, props and backgrounds for an animation. I can film my own stop-motion animation using an app. I can review my stop-motion animation using an app. I can edit my stop-motion animation in an app. I can record audio to accompany my animation.</p> <p>I can sort and classify a group of items by answering questions. I can collect data using tick or tally charts. I can take digital photographs. I can retrieve and review photographs that I take. I can edit and enhance my digital photographs. I can store my digital photographs. I know where my digital photographs are stored and I can retrieve them. I can enter data into a spreadsheet program (Google Sheets or Microsoft Excel). I can select data and create basic charts in a spreadsheet program (Google Sheets or Microsoft Excel). I can use Google Maps to find a specific place. I can record information on a digital map. I can present what I have learned in a presentation. I know that I need to tell an adult, if I have Early Warning Signs when searching on the internet. I can tell an adult, if I have Early Warning Signs when searching on the internet.</p>	