

Computing Progression Map

	EYFS	KS1		KS2			
Key Areas	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Knowledge	<p><u>Pupils should be taught to:</u></p> <p><u>Physical, Social and Emotional Development</u></p> <ul style="list-style-type: none"> • Show resilience and perseverance in the face of a challenge. • Know and talk about the different factors that support their overall health and wellbeing: sensible amounts of 'screen time'. • Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave 	<p><u>Pupils should be taught to:</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 • 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. 		<p><u>Pupils should be taught to:</u></p> <ul style="list-style-type: none"> • 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 • 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. 			

	<p>accordingly.</p> <p><u>Physical Development</u></p> <ul style="list-style-type: none"> • Develop their small motor skills so that they can use a range of tools competently, safely and confidently. <p><u>Expressive Arts and Design</u></p> <ul style="list-style-type: none"> • Explore, use and refine a variety of artistic effects to express their ideas and feelings. • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. 						
<p><u>Key Skills:</u> What is a Computer?</p>	<ul style="list-style-type: none"> • Use different digital devices. • Recognise that you can access content on a digital device. • Use a mouse, touchscreen or appropriate access device to target and select options on screen. 	<ul style="list-style-type: none"> • Recognise a range of digital devices. • Select a digital device to fulfil a specific task, e.g. to take a photo. 	<ul style="list-style-type: none"> ▪ Recognise what a computer is (input > process > output) ▪ Recognise that a range of digital devices contain computers, 	<ul style="list-style-type: none"> • Describe what a computer is (input > process > output). • Explain the difference between input and output devices on a computer. 	<ul style="list-style-type: none"> • Recognise that you can organise files using folders. • Explain what a good file name would look like. 	<ul style="list-style-type: none"> • Type using fingers on both hands. • Use common keyboard shortcuts, e.g. ctrl C (copy), ctrl V (paste). • Explain what makes a 	<ul style="list-style-type: none"> • Type efficiently using both hands. • Use a range of keyboard shortcuts. • Recognise that different devices

	<ul style="list-style-type: none"> Recognise a selection of digital devices. Recognise the basic parts of a computer, e.g. mouse, screen, keyboard. Select a digital device to fulfil a specific task, e.g. to take a photo. 	<ul style="list-style-type: none"> Name a range of digital devices, e.g. laptop, phone, games console. Log on to the school computer / unlock the school tablet with support. Identify the basic parts of a computer, e.g. mouse, keyboard, screen. Use a suitable access device (mouse, keyboard, touchscreen, switch) to access and control an activity on a computer. Open key applications independently . - Save and open files with support. 	<p>e.g. phone, games console, smart speaker.</p> <ul style="list-style-type: none"> Explain what the basic parts of a computer are used for. Identify and use input devices, e.g. mouse, keyboard; and output devices, e.g. speakers, screen. Open key applications independently . Save and open files to/from a given folder. Add an image to a document from a given folder/source. 	<ul style="list-style-type: none"> Know where to save and open files (e.g. in shared folder). Save files with appropriate names. Use a keyboard effectively to type in text. Use left-, right- and double-click on the mouse. Add an image to a document from the internet. Resize and move an image in a document. Use a search engine to find simple information. Recognise that school 	<ul style="list-style-type: none"> Delete and move files Use key parts of a keyboard effectively, e.g. shift, arrow keys, delete). Know how to copy and paste text or images in a document Crop an image and apply simple filters. Use a search engine to find specific information. Recognise that school computers are connected together on a network. 	<p>strong password.</p> <ul style="list-style-type: none"> Use folders to organise files. Know how to mute and unmute audio on a computer or tablet. Recognise that there is more than one search engine, and they may produce different results. Use a search engine effectively to find information and images. Know how to search for an application on a computer/tablet. 	<ul style="list-style-type: none"> may have different operating systems. Organise files effectively using folders and files names. Use the advanced search tools when using a search engine to find specific information and images. Explain the basic function of an operating system. Recognise common file types and extensions e.g. jpeg, png, doc, wav Recognise a range of Internet
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		<ul style="list-style-type: none"> ▪ Add an image to a document from a given folder/source with support. 	<ul style="list-style-type: none"> ▪ Resize an image in a document. ▪ Highlight text and use arrow keys. ▪ Capture media independently (e.g. take photos, record audio). 	<p>computers are connected.</p>			<ul style="list-style-type: none"> • services, e.g. email, VOIP (e.g. Skype, FaceTime), World Wide Web, • and what they do.
<p>Key Skills: Presenting Information and Multimedia</p>	<ul style="list-style-type: none"> • Use technology to explore and access digital content. • Operate a digital device with support to fulfil a task. • Create simple digital content, e.g. digital art. • Choose media to convey information, e.g. image for a poster. 	<ul style="list-style-type: none"> ▪ Create digital content, e.g. digital art. ▪ Choose media from a selection (e.g. images, video, sound) to present information on a topic. • Recognise that you can find out information from a website. • Recognise that you can edit digital 	<ul style="list-style-type: none"> • Create simple digital content for a purpose, e.g. digital art. ▪ Recognise that we can use technology to record and playback audio or take and view photographs. ▪ Apply edits to digital content to achieve a particular 	<ul style="list-style-type: none"> • Present ideas and information by combining media independently, e.g. text and images. • Design and create simple digital content for a purpose/audience, e.g. poster. • Edit digital content to improve it, e.g. resize text. 	<ul style="list-style-type: none"> • Collect, organise and present information using a range of media. • Design and create digital content for a specific purpose, e.g. poster, animation. • Edit digital content to improve it according to feedback. 	<ul style="list-style-type: none"> • Identify and use appropriate hardware and software to fulfil a specific task. • Remix and edit a range of existing and their own media to create content. • Consider the audience when designing and creating digital content. 	<ul style="list-style-type: none"> • Select, combine and remix a range of media to create original content. • Consider all steps of the design process when creating content (e.g. identify problem, plan, create, evaluate, share.) • Identify the most

		<p>content to change its appearance.</p> <ul style="list-style-type: none"> • Select basic tools/options to change the appearance of digital content, e.g. filter on an image / font / size of paintbrush. • Combine media with support to present information, e.g. text and images. 	<p>effect, e.g. emphasise part of a text.</p> <ul style="list-style-type: none"> ▪ Present ideas and information by combining media, e.g. text and images. ▪ Explain that you can search for information on the internet. ▪ Plan out digital content, e.g. a simple sketch or storyboard. ▪ Identify the common features of digital content, e.g. title, images. ▪ Recognise that we can use different types of media to convey 	<ul style="list-style-type: none"> • Identify the features of a good piece of digital content. • Explain why we use technology to create digital content. • Recognise why we use different types of media to convey information, e.g. text, image, audio, video. 	<ul style="list-style-type: none"> • Identify the features of a good piece of digital content and apply these in own design. • Explain the benefits of using technology to present information. • Know where to find copyright-free content, e.g. creative commons images. • Collaborate with peers using online tools, e.g. blogs, Google Drive, Office 365, if available. 	<ul style="list-style-type: none"> • Recognise the benefits of using technology to collaborate with others • Identify success criteria for creating digital content for a given purpose and audience. • Evaluate their own content against success criteria and make improvements accordingly. 	<p>effective tools to present information for a specific purpose.</p> <ul style="list-style-type: none"> • Explain the benefits of using technology to collaborate with others. • Evaluate existing digital content in terms of effectiveness and design.
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**Key Skills:
Data**

		<p>information, e.g. text, image, audio, video.</p>				
<ul style="list-style-type: none"> • Access content in a range of formats, e.g. image, video, audio. • Answer basic questions about information displayed in images e.g. more or less. 	<ul style="list-style-type: none"> ▪ Recognise different forms of digital content, i.e. text, image, video and audio. ▪ Collect simple data (e.g. likes/dislikes) on a topic. ▪ Present simple data using images, e.g. number of animals. ▪ Recognise charts and pictograms and why we use them. ▪ Explain information shown in a simple chart or pictogram. ▪ Modify simple charts/pictograms, e.g. add 	<ul style="list-style-type: none"> • Identify different forms of digital content, i.e. text, image, video and audio. ▪ Recognise charts, pictograms and branching databases, and why we use them. ▪ Identify an object using a branching database ▪ Recognise an error in a branching database. ▪ Create a branching database using pre-prepared images and questions 	<ul style="list-style-type: none"> • Recognise charts, pictograms and databases, and why we use them. • Present information using a suitable chart • Explore a record card database to find out information. • Use filters in a database to find out specific information. • Name the key parts of a database, e.g. record, field, search. • Answer questions about 	<ul style="list-style-type: none"> • Draw conclusions from information stored in a database, chart or table. • Design a questionnaire and collect a range of data on a theme. • Choose appropriate formats to present data to convey information. • Recognise that school computers are connected together on a network. • Recognise that the Internet is made up of 	<ul style="list-style-type: none"> • Explain the difference between data and information. • Appreciate that different programs work with different types of data, e.g. text, number, video. • Explain the difference between the Internet and the World Wide Web. • Know the difference between a search engine and a web browser. • Explain the basics of 	<ul style="list-style-type: none"> • Recognise what a spreadsheet is and what it is used for. • Explain the difference between physical, mobile and wireless networks. • Use simple formulae in a spreadsheet to find out information from a set of data. • Collect data for a purpose and plan out a spreadsheet to present it effectively, using relevant formulae. • Produce graphs from

		<p>title, item or labels.</p> <ul style="list-style-type: none"> ▪ Identify the key features of a chart or pictogram. ▪ Collect data on a topic (eye colour, pets etc.) and present in a pictogram or chart. 	<ul style="list-style-type: none"> ▪ Identify the features of a good question in a branching database. ▪ Independently plan out and create a branching database. ▪ Evaluate a given branching database and suggest improvements . 	<p>information in a database.</p> <ul style="list-style-type: none"> • Name some benefits of using a computer to create charts and databases. • Recognise that search engines store information in databases. 	<p>computers and other digital devices connected together all around the world.</p> <ul style="list-style-type: none"> • Know that you use a web browser to access information stored on the internet. • Appreciate that you need to use specific software to work with video, images, audio etc. 	<p>how search engines work, and that different search engines may give different results.</p> <ul style="list-style-type: none"> • Perform complex searches for information using advanced settings in search engines. • Recognise the benefits and risks of sharing data online. 	<p>data in a spreadsheet to answer a question.</p> <ul style="list-style-type: none"> • Analyse and evaluate data and information in a spreadsheet, chart or database. • Recognise that poor quality data leads to unreliable results.
<p>Key Skills: Programming and Algorithms</p>	<ul style="list-style-type: none"> • Explore technology. • Repeat an action with technology to trigger a specific outcome. • Recognise the success or failure of an action. • Follow simple instructions to control a digital device. 	<ul style="list-style-type: none"> • Recognise that computers don't have a brain. • Explain that we control computers by giving them instructions. 	<ul style="list-style-type: none"> • Explain that computers have no intelligence and we have to program them to do things. ▪ Create a program with multiple steps 	<ul style="list-style-type: none"> • Predict the outcome of a block or text-based program (Scratch/Logo). • Successfully modify an existing program, e.g. 	<ul style="list-style-type: none"> • Create a program using a range of events/inputs to control what happens. • Recognise that we can decompose 	<ul style="list-style-type: none"> • Name a range of sensors in physical systems. • Recognise that different solutions may exist for 	<ul style="list-style-type: none"> • Design and program a physical computing system that uses sensors. • Recognise and use procedures (sub-

	<ul style="list-style-type: none"> Recognise that we control computers. Input a short sequence of instructions to control a device. 	<ul style="list-style-type: none"> Create a simple program e.g. to control a floor robot. Create a simple algorithm. Predict the outcome of a simple algorithm or program. Explain what an algorithm is – a sequence of instructions to make something happen. Recognise that the order of instructions in an algorithm is important. Debug an error in a simple algorithm or program e.g. for a floor robot. 	<p>e.g. to control a floor robot.</p> <ul style="list-style-type: none"> Predict the outcome of an algorithm or program with multiple steps. Recognise that the instructions in an algorithm need to be clear and unambiguous. Identify and correct errors in a given algorithm or program, and recognise the term debugging. Explain what an algorithm is, and that when inputted on a computer it is called a program. Plan out a program by creating an 	<p>change background, number of times things happen.</p> <ul style="list-style-type: none"> Identify repeated steps in a program or algorithm. Create examples of algorithms containing count-controlled loops. Use a count-controlled loop (e.g. repeat 3 times) to make a program more efficient. Recognise that we can create an algorithm to help plan out a program. Recognise a forever loop 	<p>a problem into smaller parts to help solve it.</p> <ul style="list-style-type: none"> Explain when to use forever loops and count-controlled loops, and use them in programs. Recognise selection in a program or algorithm. Use selection in algorithms in programs to alter what happens when a condition changes, e.g. if...then... Design a program for a purpose. Decompose into parts and create an algorithm 	<p>the same problem.</p> <ul style="list-style-type: none"> Predict what will happen in a program or algorithm when the input changes (e.g. sensor, data or event). Use two-way selection in programs and algorithms, i.e. if...then...els e... Recognise variables in a program and what they do. Create programs including repeat until loops. Create and use simple variables, 	<p>routines) in programs.</p> <ul style="list-style-type: none"> Plan out a program in detail, including task, algorithm, code and execution level. Explain common errors in programs and how to fix them. Use nested selection statements in a program or algorithm effectively. Combine a variable with relational operators (< = >) to determine when a program changes, e.g. if score > 5, say "well done".
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			<p>algorithm, and evaluate its success.</p>	<p>in a program or algorithm.</p> <ul style="list-style-type: none"> • Use a forever loop in a program to keep something happening. • Identify errors in a block or text-based program and correct them. • Recognise that different inputs can be used to control a program. 	<p>for each one.</p> <ul style="list-style-type: none"> • Recognise common mistakes in programs and how to correct them. 	<p>e.g. to keep score.</p> <ul style="list-style-type: none"> • Evaluate a program and make improvements to the code or design accordingly. • Create an algorithm for a physical system containing a sensor 	<ul style="list-style-type: none"> • Recognise key concepts (sequence, selection, repetition and variables) in a range of languages and contexts.
<p>Key Skills: Digital Literacy</p>	<ul style="list-style-type: none"> • Are aware that some online content is inappropriate • Are aware that information can be public or private. • Know to tell an appropriate adult if they see something on the computer that upsets them 	<ul style="list-style-type: none"> • Use a simple password when logging on, where relevant. <ul style="list-style-type: none"> ▪ Explain why we use passwords. • Recognise examples of personal information e.g. name, 	<ul style="list-style-type: none"> ▪ Remember a simple password to log onto the computer or a website. ▪ Identify rules for acceptable use of technology in school. ▪ Recognise what personal information is and the need 	<ul style="list-style-type: none"> • Explain why we need to keep our password safe. • Recognise that digital content belongs to the person who first created it, but we can give permission for 	<ul style="list-style-type: none"> • Remember and use an individual password. • Recognise what kinds of websites are trustworthy sources of information. • Recognise the benefits and risks of 	<ul style="list-style-type: none"> • Know where to find copyright free images and audio, and why this is important. • Critically evaluate websites for reliability of information and 	<ul style="list-style-type: none"> • Explain what makes a strong password and why this is important at school and in the wider world. • Explain how algorithms are used to track online activities with a view to

		<p>image.</p> <ul style="list-style-type: none"> ▪ Know who to tell if concerned about content or contact online. ▪ Recognise that digital content belongs to the person who created it. • Talk about their use of technology at home. 	<p>to keep it private.</p> <ul style="list-style-type: none"> ▪ Recognise that spending a lot of time in front of a screen can be unhealthy. • Recognise that some information found online may not be true 	<p>others to use it.</p> <ul style="list-style-type: none"> • Recognise when to share personal information and when not to. • Recognise that some people lie about who they are online. • Are aware that games and films have age ratings. 	<p>different apps and websites.</p> <ul style="list-style-type: none"> • Recognise that the media can portray groups of people differently. • Can rate a game or film they have made and explain their rating. 	<p>authenticity.</p> <ul style="list-style-type: none"> • Demonstrate responsible use of a online services, and know a range of ways • to report concerns. 	<p>targeting advertising and information.</p> <ul style="list-style-type: none"> • Know that there are laws around the purchase of games; the production, sending and storage of images; what is written online; and around online gambling.
<p>Key Vocabulary: What is a computer?</p>	<ul style="list-style-type: none"> • Technology • Share • Create • Internet 	<ul style="list-style-type: none"> • Purpose • Online tools • Communicate 	<ul style="list-style-type: none"> • Information sources • Communication • Purposes • Website content 	<ul style="list-style-type: none"> • School network • Devices • Computer parts • Collaborate • Appropriate online communication • Search tools • Appropriate websites • Owner 	<ul style="list-style-type: none"> • Different networks • Information collection • Reliability • Owners 	<ul style="list-style-type: none"> • Computing devices • Internet parts • Collaboration • Responsibility • Searching strategies • Webpages 	<ul style="list-style-type: none"> • Information movement • Connecting devices • Different audiences • Research strategies • Search result rankings • Acknowledge resources
<p>Key Vocabulary</p>	<ul style="list-style-type: none"> • Screen • Mouse • Images • Keyboard • Paint 	<ul style="list-style-type: none"> • Videos • Camera stills • Sounds • Image bank • Word bank 	<ul style="list-style-type: none"> • Paint effects • Templates • Animation • Documents 	<ul style="list-style-type: none"> • Multimedia • Presentations • Alignment • Brush size • Repeats 	<ul style="list-style-type: none"> • Creating + modifying • Specific purpose 	<ul style="list-style-type: none"> • Online sharing • Multimedia effects 	<ul style="list-style-type: none"> • Appropriate online tools • Audience • Atmosphere • Structure

		<ul style="list-style-type: none"> • Space bar 	<ul style="list-style-type: none"> • Index finger typing • Enter/return • Caps lock • Backspace 	<ul style="list-style-type: none"> • Reflections • Green screening • Amend • Copy • Paste 	<ul style="list-style-type: none"> • Photo modifying • Keyboard shortcuts • Bullet points • Spell check • Constructive feedback 	<ul style="list-style-type: none"> • Multimedia modification • Transitions • Hyperlinks • Editing tools • Refining • Online sharing 	<ul style="list-style-type: none"> • Copyright • Information collection • HTML code • Storing
Key Vocabulary: Data	<ul style="list-style-type: none"> • Collect • Set of photos • Count • Organise 	<ul style="list-style-type: none"> • Photographs • Video • Sound • Data • Pictogram • Digitally 	<ul style="list-style-type: none"> • Capturing moments • Magnified images • Questions • Data collection • Graphs • Charts • Save • Retrieve 	<ul style="list-style-type: none"> • Questioning • Database • Construct • Contribute • Recording data • Data logger • Present data 	<ul style="list-style-type: none"> • Database creation • Database searches • Inaccurate data 	<ul style="list-style-type: none"> • Spreadsheets • Complex searches (and/or: </>) • Problem solving • Present answers • Analyse information • Question data • Interpret 	<ul style="list-style-type: none"> • Generate • Process • Interpret • Store • Present information • Plausibility • Appropriate data tool • Interrogate • Investigations
Key Vocabulary: Programming and Algorithms	<ul style="list-style-type: none"> • Equipment • Buttons • Movement 	<ul style="list-style-type: none"> • Instructions • Buttons • Robots • Patterns • Program 	<ul style="list-style-type: none"> • Forward • Backward • Right-angle turn • Algorithm • Sequence • Debug • Predict 	<ul style="list-style-type: none"> • Sequence instructions • Sequence debugging • Test + improve • Logo commands • Sequence programming 	<ul style="list-style-type: none"> • Type + edit • logo commands • Sensors • Open-ended problems • Bugs in programs • Complex programming 	<ul style="list-style-type: none"> • Explore procedures • Refine procedures • Variable • Hardware + software control • Change inputs • Different outputs • Articulate solutions • Commands 	<ul style="list-style-type: none"> • Predicting outputs • Plan, program, test & review a program • Program writing • Control mimics + devices • Sensors • Measure input

							<ul style="list-style-type: none"> • Create variables • Link errors
Key Vocabulary: Digital Literacy	<ul style="list-style-type: none"> • Choices • Internet • Website 	<ul style="list-style-type: none"> • Rules • Online • Private information • Email 	<ul style="list-style-type: none"> • Appropriate/in appropriate sites • Cyber-bullying • Digital footprint • Keyword searching 	<ul style="list-style-type: none"> • E-safety rules • Secure passwords • Report abuse button • Gaming • Blogs 	<ul style="list-style-type: none"> • E-safety rules • Secure passwords • Report abuse button • Gaming • Blogs 	<ul style="list-style-type: none"> • Responsible online communication • Informed choices • Virus threats • Blogs • Messaging 	<ul style="list-style-type: none"> • Responsible online communication • Informed choices • Virus threats • Blogs • Messaging