Computing Unit Overview

Unit	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Computing systems and networks – Technology around us	Creating media – Digital painting	Programming A – Moving a robot	Creating media – Digital writing	Data and information – Grouping data	Programming B – Introduction to animation
Year 2	Data and information – Pictograms	Computing systems and networks – IT around us	Programming A – Robot algorithms	Creating media – Making music	Programming B – An introduction to quizzes	Creating media – Digital photography
Year 3	Programming A – Sequence in music	Data and information – Branching databases	Computing systems and networks – Connecting computers	Creating media – Desktop publishing	Creating media – Animation	Programming B – Events and actions
Year 4	Computing systems and networks – The Internet	Programming A – Repetition in shapes	Data and information – Data logging	Creating media – Audio editing	Programming B – Repetition in games	Creating media – Photo editing
Year 5	Data and information – Flat-file databases	Creating media – Vector drawing	Programming A – Selection in physical computing	Computing systems and networks To Sharing Information	Creating media – Video editing	Programming B – Selection in quizzes
Year 6	Programming A – Variables in games	Data and information – Spreadsheets	Creating media – Web page creation	Computing systems and networks – Communication	Creating media – 3D Modelling	Programming B – Sensing

Reception statements can be used to assess pupils working below age expectations in KS1

Year Reception Skills Progression for Computing

INTENT: For children to become effective users of technology who: understand essential principles and key concepts of Computer Science; analyse problems in computational terms; use practical experience of computer programs to solve such problems; and develop their ideas at a level suitable to be active participants in a digital world.

	What is a Computer? Key Skills	Presenting Information & Multimedia	Data	Programming & Algorithms	Digital Literacy
Foundation Stage Early Years + Reception	To use different digital devices. To recognise that you can access content on a digital device. To use a mouse, touchscreen or appropriate access device to target and select options on screen. To recognise a selection of digital devices. To recognise the basic parts of a computer, e.g. mouse, screen, and keyboard. To select a digital device to fulfil a specific task, e.g. to take a photo.	To use technology to explore and access digital content. To operate a digital device with support to fulfil a task. To create simple digital content, e.g. digital art. To choose media to convey information, e.g. image for poster.	To access content in a range of formats, e.g. image, video, audio. To answer basic questions about information displayed in images e.g. more or less.	To explore technology. To repeat an action with technology to trigger a specific outcome. To recognise the success or failure of an action. To follow simple instructions to control a digital device. To recognise that we control computers. To input a short sequence of instructions to control a device.	To be aware that some online content is inappropriate. To be aware that information can be public or private. To know to tell an appropriate adult if they see something on the computer that upsets them.

Year 1 Skills Progression for Computing							Year 2 Skills Progression for Computing					
INTENT: For children to become effective users of technology who: understand essential principles and key concepts of Computer Science; analyse problems in computational terms; use practical experience of computer programs to solve such problems; and develop their ideas at a level suitable to be active participants in a digital world.												
Breadth of Study	Computing systems and networks – Technology around us	Creating media – Digital painting	Programming A – Moving a robot	Creating media – Digital writing	Data and information – Grouping data	Programming B – Introduction to animation	Data and information – Pictograms	Computing systems and networks – IT around us	Programming A – Robot algorithms	Creating media – Making music	Programming B – An introduction to quizzes	Creating media – Digital photography
End Points												
Key Computer Skills	To recognise a range of digital devices. To select a digital device to fulfil a specific task, e.g. To take a photo. To name a range of digital devices, e.g. Laptop, phone, games console. To log on to the school computer / unlock the school tablet with support. To identify the basic parts of a computer, e.g. Mouse, keyboard, screen. To use a suitable access device (mouse, keyboard, touchscreen, switch) to access and control an activity on a computer. To open key applications independently. To save and open files with support. To add an image to a document from a given folder/source with support.						To recognise what a computer is (input > process > output). To recognise that a range of digital devices contain computers, e.g. Phone, games console, smart speaker. To explain what the basic parts of a computer are used for. To identify and use input devices, e.g. Mouse, keyboard, and output devices, e.g. Speakers, screen. To open key applications independently. To save and open files to/from a given folder. To add an image to a document from a given folder/source. To resize an image in a document. To highlight text and use arrow keys. To capture media independently (e.g. Take photos, record audio).					
Presenting Information and Multimedia	To create digital content, e.g. Digital art. To choose media from a selection (e.g. Images, video, sound) to present information on a topic. To recognise that you can find out information from a website. To recognise that you can edit digital content to change its appearance. To select basic tools/options to change the appearance of digital content, e.g. Filter on an image / font / size of paintbrush. To combine media with support to present information, e.g. Text and images.						To create simple digital content for a purpose, e.g. Digital art. To recognise that we can use technology to record and playback audio or take and view photographs. To apply edits to digital content to achieve a particular effect, e.g. Emphasise part of a text. To present ideas and information by combining media, e.g. Text and images. To explain that you can search for information on the internet. To plan out digital content, e.g. A simple sketch or storyboard. To identify the common features of digital content, e.g. Title, images. To recognise that we can use different types of media to convey information, e.g. Text, image, audio, video.					
Handling Data	To recognise different forms of digital content, i.e. Text, image, video and audio. To collect simple data (e.g. Likes/dislikes) on a topic. To present simple data using images, e.g. Number of animals. To recognise charts and pictograms and why we use them. To explain information shown in a simple chart or pictogram. To modify simple charts/pictograms, e.g. Add title, item or labels. To identify the key features of a chart or pictogram. To collect data on a topic (eye colour, pets etc.) And present in a pictogram or chart.						To identify different forms of digital content, i.e. Text, image, video and audio. To recognise charts, pictograms and branching databases, and why we use them. To identify an object using a branching database To recognise an error in a branching database. To create a branching database using pre-prepared images and questions To identify the features of a good question in a branching database. To independently plan out and create a branching database. To evaluate a given branching database and suggest improvements.					
Programming and Algorithms	To recognise that computers do not have a brain. To explain that we control computers by giving them instructions. To create a simple program e.g. To control a floor robot. To create a simple algorithm. To predict the outcome of a simple algorithm or program. To explain what an algorithm is – a sequence of instructions to make something happen. To recognise that the order of instructions in an algorithm is important. To debug an error in a simple algorithm or program e.g. For a floor robot.						To explain that computers have no intelligence, and we have to program them to do things. To create a program with multiple steps e.g. To control a floor robot. To predict the outcome of an algorithm or program with multiple steps. To recognise that the instructions in an algorithm need to be clear and unambiguous. To identify and correct errors in a given algorithm or program and recognise the term debugging. To explain what an algorithm is, and that when inputted on a computer it is called a program. To plan out a program by creating an algorithm and evaluate its success.					
Digital literacy (including E-safety)	To use a simple password when logging on, where relevant. To explain why we use passwords. To recognise examples of personal information e.g. Name, image. To know who to tell if concerned about content or contact online. To recognise that digital content belongs to the person who created it. To talk about their use of technology at home.						To remember a simple password to log onto the computer or a website. To identify rules for acceptable use of technology in school. To recognise what personal information is and the need to keep it private. To recognise that spending a lot of time in front of a screen can be unhealthy. To recognise that some information found online may not be true.					
Mastery Achieved (date)												

Year 3 Skills Progression for Computing							Year 4 Skills Progression for Computing					
INTENT: For children to become effective users of technology who: understand essential principles and key concepts of Computer Science; analyse problems in computational terms; use practical experience of computer programs to solve such problems; and develop their ideas at a level suitable to be active participants in a digital world.												
Breadth of Study	Programming A – Sequence in music	Data and information – Branching databases	Computing systems and networks – Connecting computers	Creating media – Desktop publishing	Creating media – Animation	Programming B – Events and actions	Computing systems and networks – The Internet	Programming A – Repetition in shapes	Data and information – Data logging	Creating media – Audio editing	Programming B – Repetition in games	Creating media – Photo editing
End Points												
Key Computer Skills	To describe what a computer is (input > process > output). To explain the difference between input and output devices on a computer. To know where to save and open files appropriately (e.g. In shared folder). To use a keyboard effectively to type in text. To use left-, right- and double-click on the mouse. To add an image to a document from the internet. To resize and move an image in a document. To use a search engine to find simple information. To recognise that school computers are connected.						To recognise that you can organise files using folders. To explain what a good file name would look like. To delete and move files. To use key parts of a keyboard effectively, e.g. Shift, arrow keys, delete). To know how to copy and paste text or images in a document. To crop an image and apply simple filters. To use a search engine to find specific information. To recognise that school computers are connected together on a network.				
Presenting Information and Multimedia	To present ideas and information by combining media independently, e.g. text and images. To design and create simple digital content for a purpose/audience, e.g. poster. To edit digital content to improve it, e.g. resize text. To identify the features of a good piece of digital content. To explain why we use technology to create digital content. To recognise why we use different types of media to convey information, e.g. text, image, audio, video.						To collect, organise and present information using a range of media. To design and create digital content for a specific purpose, e.g. Poster, animation. To edit digital content to improve it according to feedback. To identify the features of a good piece of digital content and apply these in own design. To explain the benefits of using technology to present information. To know where to find copyright-free content, e.g. Creative commons images. To collaborate with peers using online tools, e.g. Blogs, google drive, office 365, if available.				
Handling Data	To recognise charts, pictograms and databases, and why we use them. To present information using a suitable chart To explore a record card database to find out information. To use filters in a database to find out specific information. To name the key parts of a database, e.g. Record, field, search. To answer questions about information in a database. To name some benefits of using a computer to create charts and databases. To recognise that search engines store information in databases.						To draw conclusions from information stored in a database, chart or table. To design a questionnaire and collect a range of data on a theme. To choose appropriate formats to present data to convey information. To recognise that school computers are connected together on a network. To recognise that the internet is made up of connected computers and other digital devices all around the world. To know that you use a web browser to access information stored on the internet. To appreciate that you need to use specific software to work with video, images, audio etc.				
Programming and Algorithms	To predict the outcome of a block or text-based program (scratch). To modify an existing program, e.g. Change background, number of times things happen. To identify repeated steps in a program or algorithm. To create examples of algorithms containing count-controlled loops. To use a count-controlled loop (e.g. Repeat 3 times) to make a program more efficient. To recognise that we can create an algorithm to help plan out a program. To recognise a forever loop in a program or algorithm. To use a forever loop in a program to keep something happening. To identify errors in a block or text-based program and correct them. To recognise that different inputs can be used to control a program.						To create a program using a range of events/inputs to control what happens. To recognise that we can decompose a problem into smaller parts to help solve it. To explain when to use forever loops and count-controlled loops, and use them in programs. To recognise selection in a program or algorithm. To use selection in algorithms in programs to alter what happens when a condition changes, e.g. If…then… To design a program for a purpose. Decompose into parts and create an algorithm for each one. To recognise common mistakes in programs and how to correct them.				
Digital literacy (including E-safety)	To explain why we need to keep our password safe. To recognise that digital content belongs to the person who first created it, but we can give permission for others to use it. To recognise when to share personal information and when not to. To recognise that some people lie about who they are online. To are aware that games and films have age ratings.						To remember and use an individual password. To recognise what kinds of websites are trustworthy sources of information. To recognise the benefits and risks of different apps and websites. To recognise that the media can portray groups of people differently. To can rate a game or film they have made and explain their rating.					
Mastery Achieved (date)												

Year 5 Skills Progression for Computing							Year 6 Skills Progression for Computing					
INTENT: For children to become effective users of technology who: understand essential principles and key concepts of Computer Science; analyse problems in computational terms; use practical experience of computer programs to solve such problems; and develop their ideas at a level suitable to be active participants in a digital world.												
Breadth of Study	Data and information – Flat-file databases	Creating media – Vector drawing	Programming A – Selection in physical computing	Computing systems and networks To Sharing Information	Creating media – Video editing	Programming B – Selection in quizzes	Programming A – Variables in games	Data and information – Spreadsheets	Creating media – Web page creation	Computing systems and networks – Communication	Creating media – 3D Modelling	Programming B – Sensing
End Points												
Key Computer Skills	To type using fingers on both hands. To use common keyboard shortcuts, e.g. Ctrl c (copy), ctrl v (paste). To explain what makes a strong password. To use folders to organise files. To know how to mute and unmute audio on a computer or tablet. To recognise that there is more than one search engine, and they may produce different results. To use a search engine effectively to find information and images. To know how to search for an application on a computer/tablet.						To type efficiently using both hands. To use a range of keyboard shortcuts. To recognise that different devices may have different operating systems. To organise files effectively using folders and files names. To use the advanced search tools when using a search engine to find specific information and images. To recognise common file types and extensions e.g. Jpeg, png, doc, wav To recognise a range of internet services, e.g. Email, VOIP (e.g. Skype, facetime), WWW, and what they do.					
Presenting Information and Multimedia	To identify and use appropriate hardware and software to fulfil a specific task. To remix and edit a range of existing and their own media to create content. To consider the audience when designing and creating digital content. To recognise the benefits of using technology to collaborate with others To identify success criteria for creating digital content for a given purpose and audience. To evaluate their own content against success criteria and make improvements accordingly.						To select, combine and remix a range of media to create original content. To consider all steps of the design process when creating content (e.g. Identify problem, plan, create, evaluate, share.) To identify the most effective tools to present information for a specific purpose. To explain the benefits of using technology to collaborate with others. To evaluate existing digital content in terms of effectiveness and design.					
Handling Data	To explain the difference between data and information. To appreciate that different programs work with different types of data, e.g. Text, number, video. To explain the difference between the internet and the world wide web. To know the difference between a search engine and a web browser. To explain the basics of how search engines work, and that different search engines may give different results. To perform complex searches for information using advanced settings in search engines. To recognise the benefits and risks of sharing data online.						To recognise what a spreadsheet is and what it is used for. To explain the difference between physical, mobile and wireless networks. To use simple formulae in a spreadsheet to find out information from a set of data. To collect data for a purpose and plan out a spreadsheet to present it effectively, using relevant formulae. To produce graphs from data in a spreadsheet to answer a question. To analyse and evaluate data and information in a spreadsheet, chart or database. To recognise that poor quality data leads to unreliable results.					
Programming and Algorithms	To name a range of sensors in physical systems. To recognise that different solutions may exist for the same problem. To predict what will happen in a program or algorithm when the input changes (e.g. Sensor, data or event). To use two-way selection in programs and algorithms, i.e. If…then…else… To recognise variables in a program and what they do. To create programs including repeat until loops. To create and use simple variables, e.g. To keep score. To evaluate a program and make improvements to the code or design accordingly. To create an algorithm for a physical system containing a sensor.						To design and program a physical computing system that uses sensors. To recognise and use procedures (sub-routines) in programs. To plan out a program in detail, including task, algorithm, code and execution level. To explain common errors in programs and how to fix them. To use nested selection statements in a program or algorithm effectively. To combine a variable with relational operators (< = >) to determine when a program changes, e.g. If score > 5, say "well done". To recognise key computing concepts (sequence, selection, repetition and variables) in a range of contexts. To create an algorithm for a physical system containing a sensor.					
Digital literacy (including E-safety)	To know where to find copyright free images and audio, and why this is important. To critically evaluate websites for reliability of information and authenticity. To demonstrate responsible use of a online services, and know a range of ways to report concerns.						To explain what makes a strong password and why this is important at school and in the wider world. To explain how algorithms are used to track online activities with a view to targeting advertising and information. To 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.					
Mastery Achieved (date)												