Computing

Be inspired…. Have belief and grow.

Coding and programming 1

EYFS	Yr 1/2	Yr 3/4	Yr 5/6
Coding and programming (B Bot, purple mash and other simple programs and technologies) • Use direction buttons on a simple game to predict and control direction on a Bee Bot and a laptop. • Understand an algorithm as a set of instructions.	**Coding and programming (Purple Mash 2Logo, 2Go, the B bot and extending onto ScratchJunior):** • Understand an algorithm as a set of instructions. • Understand programs execute by following precise and unambiguous instructions •Predict the behaviour of simple programs • Create and debug simple programs. • Control motion by specifying the number of steps to travel, direction and turn. •Specify the nature of events (such as a single event or a loop).	**Coding and programming (Scratch, Purple Mash 2Logo and 2Go,):** • design, write and debug programs that accomplish specific goals. •Use sequence, selection and repetition in programs. • Predict the outcome of simple algorithms. • Detect and correct errors in simple algorithms. • Use specified screen coordinates to control movement. • Set the appearance of objects and create sequences of changes. • Create and edit sounds. Control when they are heard, their volume, duration and rests.	**Coding and programming (using Scratch)** •design, write and debug programs that accomplish specific goals and solve problems that arise by decomposing them into smaller parts. •Use sequence, selection and repetition in programs. • Predict the outcome of simple algorithms. • Set IF conditions for movements. Specify types of rotation giving the number of degrees. • Change the position of objects between screen layers (send to back, bring to front).

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		• Control when drawings appear and set the pen colour, size, shape. and shade of pens. • Specify conditions to trigger events. • Use IF THEN conditions to control events or objects. • Create conditions for actions by waiting for a user input • Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a line or responses to questions).	• Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation. • Combine the use of pens with movement to create interesting effects. • Set events to control other events by 'broadcasting' information as a trigger. • Use IF THEN ELSE conditions to control events or objects. • Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.

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Coding and programming 2

EYFS	Yr 1/2	Yr 3/4	Yr 5/6
• Use direction buttons on a simple game to predict and control direction on a Bee Bot and a laptop. • Understand an algorithm as a set of instructions.	**Year 1 follow Coding and Programming 1.** Develop coding and programming further (using Scratch Junior). Refer to coding and programming 1. **Year 2 below** • Show and hide objects and change the features of an object. • Select sounds and control when they are heard, their duration and volume. • Specify user inputs (such as clicks) to control events. • Use a repeat loop.	**Year 3 follow Coding and Programming 1.** Develop coding and programming further (using Scratch). Refer to coding and programming 1. **Year 4 below** • Use variables to store a value. • Use the functions define, set, change, show and hide to control the variables. • Use the Reporter operators () + () () - () () * () () / () to perform calculations.	**Year 5 follow Coding and Programming 1.** Develop coding and programming further (using Scratch). Refer to coding and programming 1 **Year 6 below** • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems • detect and correct errors in algorithms and programs • Use lists to create a set of variables. • Use the Boolean operators () < () () = () () > () ()and()

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			()or() Not() to define conditions. • Use the Reporter operators () + () () - () () * () () / () to perform calculations. Pick Random () to () Join () () Letter () of () Length of () () Mod () This reports the remainder after a division calculation Round () () of ().

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Internet and Safety/Using ICT purposefully 1

Skills from this unit to be consolidated throughout the curriculum.

EYFS	Yr 1/2	Yr 3/4	Yr 5/6
•Log on and off technology safely and appropriately. •Begin to understand the risks involved with IT and online use, and know what to do if they have a problem. •Control a mouse (moving, clicking, dragging etc…) when using simple programs. • Use the tools in a simple painting program. • Use a digital camera (both real and in role-play) •Be aware of how media and IT is used in the world around us.	**Autumn: Cycle A** **Internet, safety and connecting with others:** • To log on and off IT independently. •Understand online risks and the age rules for sites. •Participate in class online communication (for example: Purple Mash 2E-mail), •Use a range of IT and programs. •Save, retrieve, edit and publish work as appropriate.	**Internet, safety and connecting with others:** • Give examples of the risks posed in online communications. •Understand the term 'copyright'. •Understand the use of passwords and keeping information private. •Understand that comments made online that are hurtful or offensive are the same as bullying.	**Internet, safety and connecting with others:** • Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. • Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder.

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	Autumn Cycle A: Year 2 to be extended by: **Editing skills and Creating Content:** • use of the keyboard confidently, including the spacebar, backspace, delete, shift and to begin to use both hands for typing. • Select text using an appropriate method, eg. highlighting or clicking text to select. • Make simple changes to selected text, eg. colour, style and size. • Be able to undo and redo using icons. **Summer Cycle A** **Year 1- New Content** **Year 2- Consolidation** • Create simple presentations for different purposes using templates for support. • Create and select appropriate images, video or sounds to add to work.	• Contribute to blogs that are moderated by teachers. (Purple Mash 2Blog) • Understand how online services work. • Attach an attachment to an E-mail (Purple Mash 2-Email) •To save and retrieve work from their folder. •To use passwords independently.	• Understand the effect of online comments and show responsibility and sensitivity when online. • Understand how simple networks are set up and used. • Create and contribute to their own blogs and others that are moderated by teachers. (Purple Mash 2Blog). • Collaborate with others online on sites approved and moderated by teachers. •To create sub-folders in their folders to store, organise and retrieve their documents. **Editing skills and Creating Content:** • develop correct use of the keyboard with increasing speed and accuracy. •Format and edit work to improve clarity and purpose using a range of

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	• Use sound recorders on a range of devices to create, record and playback sounds. •Use paint packages or photo-manipulation software to edit/change an image, eg. cropping. •Use a range of digital devices to capture and save both still and moving images.	**Editing skills and Creating Content:** • use of the keyboard (with two hands) with increasing speed and accuracy. • Use different font sizes, colours and effects to communicate meaning for a given audience. • Use various layouts, formatting, graphics and illustrations for different purposes or audiences. • Use page setup to select different page sizes and orientations. • Be able to align text to right, left and centre. • Use cut, copy and paste to refine and re-order content. • Use appropriate editing tools to ensure their work is clear and error free, eg. spell checker, thesaurus, find and replace. • recognise and use key layout and design features, eg. text boxes, columns and borders. • Insert and edit simple tables.	tools, eg. cut and paste, justify, tabs, insert and replace. •Be able to add columns and rows to tables. •Recognise common file formats and use the most appropriate for the task and audience. •Independently select process and import images, video and sounds from a variety of sources to enhance presentations. •Develop the use of hyperlinks to produce more effective, interactive, non-linear presentations. •Make effective use of transitions and animations in presentations. Consider their appropriateness and overall effect on the audience. •Make use of reviewing tools (comments) in word processors to

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		• Select suitable text, sounds and graphics from other electronic sources and import into own work. •Select and import graphics from digital cameras, graphics packages and other sources and prepare for use, eg. cropping, resizing and editing. • Create a range of hyperlinks and produce a non-linear, interactive presentation. •Recognise intended audience and suggest improvements to make their work more relevant to that audience. •Use a variety of devices and software to save, create, select, manipulate and playback sounds for a purpose. •Capture, acquire, store and retrieve still and moving images from a range of digital devices and the Internet for a purpose. •Create and edit simple animations. •Use various tools in paint packages or photo-manipulation	collaborate and evaluate each other's work. Independently select, edit, manipulate and combine sound files from a range of sources for a purpose. •Create, acquire, store, manipulate, combine and edit images and film from different sources and devices. • Refine and make changes to images and film according to audience.

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		software to edit/change an image, eg. applying different special effects.	

Internet and Safety/Using ICT purposefully 2

EYFS	Yr 1/2	Yr 3/4	Yr 5/6
Log on and off technology safely and appropriately. •Begin to understand the risks involved with IT and online use and	**Year 1 in order to access new content need to be taught basic skills from 1.** **Basic skills:** • *To log on and off IT independently.*	**New content for Yr 3 & 4** **Internet and safety:**	**New content for Yr 5& 6** **Internet and safety:**

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know what to do if they have a problem. •Control a mouse (moving, clicking, dragging etc…) when using simple programs. • Use the tools in a simple painting program. • Use a digital camera (both real and in role-play) •Be aware of how media and IT is used in the world around us.	•*Understand online risks and the age rules for sites.* •*Use a range of IT and programs.* •*Save, retrieve, edit and publish work as appropriate.* **Editing skills and Creating Content:** • *use of the keyboard confidently, including the spacebar, backspace, delete, shift and to begin to use both hands for typing.* • *Select text using an appropriate method, eg. highlighting or clicking text to select.* • *Be able to undo and redo using icons.* **Autumn Cycle B** **Internet and safety:**	• Give examples of the risks posed in online communications and know the importance of age limits on sites. **Researching** • Use search engines to locate information and images for a purpose. • Use strategies to verify the accuracy and reliability of information, distinguishing between fact and opinion. **Collecting data:** • Devise and construct databases using applications designed for this purpose in areas across the curriculum. (2Investigate and Excel)	•Understand the effect of online comments and show responsibility and sensitivity when online. • Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. **Researching** • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • Choose to use the Internet when appropriate as a tool for independent research, eg. gathering text, images, videos and sound as resources to use in their own work.

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	• 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 **Summer Cycle B: New Content** **Researching:** • Locate specific, teacher defined, age appropriate websites	• Use a database to answer questions by searching, matching and ordering the contents of a single field. • Select and use the most appropriate method to organise, present, analyse and interpret data.	• Be able to create and use folders within lists of bookmarks or favourites to organise content. **Collecting data:** • Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner (Excel) • Design questions and perform complex searches using key words, to search a large pre-prepared database looking for relationships and patterns, eg. data on the Internet; census data. • Design a data capture form, eg. a questionnaire or table to collect information to answer a specific question.

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	Collecting data:		• Develop simple spreadsheet models to investigate a real-life problem. • Begin to use a range of simple formulae appropriate to solving a problem and enter the correct formulae into cells.
	• Use simple databases to record information in areas across the curriculum • use technology purposefully to create, organise, store, manipulate and retrieve digital content • Create, organise, store, search and manipulate a simple database (Purple Mash 2Investigate) • Use simple graphing software to produce pictograms and other basic tables or graphs (Purple Mash 2 Graph)		

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