Cranfield Academy
Computing Overview and Progression Grid

Pre-school	○ Explore how things work ○ Remembering rules without needing an adult to remind them
EYFS	Taken from Development Matters: ○ Completes a simple program on a computer **Beebots** ○ Uses ICT hardware to interact with age appropriate computer software. **Beebots/tablets/computers** ○ Children recognise that a range of technology is used in places such as homes and schools. **Circle time and continuous provision** ○ They select and use technology for particular purposes. **Circle time and continuous provision**
Key Stage One **National Curriculum**	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.
Key Stage Two **National Curriculum**	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 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.

Teach Computing	Computing systems and networks	Creating media	Programming A	Data Information	Creating media	Programming B
EYFS Coverage **(EYFS coverage, split into Teach Computing units)**	○ Role play using technology. ○ Help adults operate equipment around school. ○ Operate simple equipment independently. ○ Begin to identify technology in their environment.	○ Use age appropriate websites. Use a mouse to arrange objects on a screen. ○ With support, use a keyboard for simple typing. ○ Interact and explore their environment using different ICT equipment e.g. cameras, microscopes, visualisers. ○ Collect information, e.g. by taking photographs or collecting object	○ Explore a variety of controlled and programmable devices. ○ Explore simple simulations, finding out what happened. ○ Discuss what happens when a floor robot is controlled. **Beebots**	○ Begin to sort, classify or group various objects progressing from practical activities to the use of ICT e.g., practically sorting fruit into colours, types or shapes, and then on-screen. ○ Use ICT to sort and sequence objects on a screen or interactive whiteboard. ○ Produce simple pictograms with help.		
Year 1	**Technology around us** Recognising technology in school and using it responsibly. **paintz.app**	**Digital painting** Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally. **Microsoft Paint**	**Moving a robot** Writing short algorithms and programs for floor robots, and predicting program outcomes. **Beebots**	**Grouping data** Exploring object labels, then using them to sort and group objects by properties. **Microsoft PowerPoint**	**Digital writing** Using a computer to create and format text, before comparing to writing non-digitally. **Microsoft Word**	**Programming animations** Designing and programming the movement of a character on screen to tell stories. **Scratch Jr**
Year 2	**Information technology around us** Identifying IT and how its responsible use improves our world in school and beyond. **Microsoft PowerPoint**	**Digital photography** Capturing and changing digital photographs for different purposes. **Digital cameras (iPads)**	**Robot algorithms** Creating and debugging programs, and using logical reasoning to make predictions. **Beebots**	**Pictograms** Collecting data in tally charts and using attributes to organise and present data on a computer. **j2data pictogram**	**Digital music** Using a computer as a tool to explore rhythms and melodies, before creating a musical composition. **Chrome Music Lab**	**Programming quizzes** Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz. **Scratch Jr**

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Year 3	**Connecting computers** Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks. **Medibang Paint (app)**	**Stop-frame animation** Capturing and editing digital still images to produce a stop-frame animation that tells a story. **iMotion (app)**	**Sequencing sounds** Creating sequences in a block-based programming language to make music. **Scratch**	**Branching databases** Building and using branching databases to group objects using yes/no questions. **j2data Branch and Pictogram**	**Desktop publishing** Creating documents by modifying text, images, and page layouts for a specified purpose. **Canva.com**	**Events and actions in programs** Writing algorithms and programs that use a range of events to trigger sequences of actions. **Scratch**
Year 4	**The internet** Recognising the internet as a network of networks including the WWW, and why we should evaluate online content. **Various websites**	**Audio production** Capturing and editing audio to produce a podcast, ensuring that copyright is considered. **Garage Band (iPads)**	**Repetition in shapes** Using a text-based programming language to explore count-controlled loops when drawing shapes **Turtle Academy**	**Data logging** Recognising how and why data is collected over time, before using data loggers to carry out an investigation. **Arduino Science Journal (app)**	**Photo editing** Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled. **Paint.NET**	**Repetition in games** Using a block-based programming language to explore count-controlled and infinite loops when creating a game. **Scratch**