KMA PROGRESSION IN COMPUTING

DATE	REVIEW DATE	SUBJECT LEADER
September 2020	July 2021	David Wilson

This document aims to give guidance on the progression of Computing knowledge and skills across the year groups.
It can also be used to differentiate work, and expectations, appropriately for pupils working above and below age-related expectations (particularly SEND pupils and GD pupils).
As pupils advance through school, it is expected that they can demonstrate a wider range of independent skills and knowledge in the three strands of Computing, across the curriculum.

In Computing, like all other subjects, we recognise the importance of the methods and practice of teaching (the pedagogy) we choose to use in enabling pupils to know more, understand more and remember more. In Computing, the following approaches will be used, and be evident in pupil discussion, observations and work in books, in order to ensure that the Computing learning opportunities are as effective as possible and that pupils progress throughout the year and across year groups during their Computing experiences in school:

TEACHING SEQUENCE IN COMPUTING

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Big picture: Look at and recap previous knowledge/skills that a relevant to the new learning.

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Provide realistic and relevant information.

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Specify key vocabulary to be used and its meaning.

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Provide opportunities for the children to work interactively with the teacher acting as the facilitator

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Ongoing opportunities to apply learned skills and knowledge across the curriculum.

Meta-cognition in Computing	
Activating prior knowledge	The teacher discusses with children the learnt strategies and content in previous reading lessons
Explicit strategy instruction	The teacher explicitly explains how to organise their ideas, with the emphasis on the cognitive strategy 'cause and effect' model' to help them organise and plan
Modelling of learned strategy	Use initial notes to model one part of the strategy
Memorisation of strategy	The teacher tests if pupils have memorised the key aspects of the strategy through questions and discussions
Guided practice	The teacher models one further example with the whole group, with pupils verbally contributing ideas
Independence practice	Pupils complete their own task
Structured reflection	The teacher encourages pupils to reflect on how appropriate the model was, how successfully they applied it, and how they might use it in the future.

TECHNOLOGY IN THE WIDER CURRICULUM
Apply knowledge and skills associated with the three strands below with increasing independence across the wider curriculum. →

DIGITAL LITERACY

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
KNOWLEDGE	Understand not to talk to strangers. Understand that they must only use a computer/device with an adult's permission	Safely search for images online. Understand what personal information is	Distinguish between kind and unkind behaviour online. Understand digital footprint. Recognise if a website is appropriate for children.	Begin to understand what cyberbullying is. Recognise advertisements online. Know how people communicate online.	Know how to respond to cyberbullying Understand that plagiarism is copying the work of others.	Understand spam emails and how to respond to them. .	Distinguish between bullying and cyberbullying. Understand when a website is safe and secure. Know the benefits and risks associated with online relationships. Understanding online media and its role in shaping ideas about gender
SKILLS		Name, date and save work. With support, compose an email.	Using links to access information Use keywords to safely search for information.	Create passwords Independently compose an email and decide if an email is safe to open.	Use search engines accurately. Creating safe online profiles and how this relates to personal information	Citation when researching and creating content. Creating strong passwords Edit photographs, including the context of social media	Citation when researching and creating content. Creating strong passwords Edit photographs, including the context of social media
KEY VOCABULARY	stranger permission	search personal information save email	digital footprint search engine links	cyberbullying advertisements password safe email	cyberbullying accuracy plagiarism personal information	spam email citation password editing photographs social media	cyberbullying https privacy policy media social media

INFORMATION TECHNOLOGY

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
WORD PROCESSING	Logs onto a computer independently. Can use a mouse to input and select information. Uses a touch screen to input and select information. Recognises the technology used at home and in school.	Using a keyboard to input text. Editing text. Formatting the font of text.	Using a keyboard to input text. Editing text. Formatting the font of text.	Taking and inserting screenshots. Changing between upper case and lower case. Aligning text to aid presentation (including use of bullet points and numbering) Insert and format text boxes.	Formatting images. Using spellcheck consistently. Inserting and formatting tables. Creating and using hyperlinks.	Formatting images. Using spellcheck consistently. Inserting and formatting tables. Creating and using hyperlinks.	Formatting images. Using spellcheck consistently. Inserting and formatting tables. Creating and using hyperlinks.
DESIGNING		Creating a simple poster containing colours, images and text.	Using tools in paint to create different styles of art.			Create and manipulate 3D shapes to create 3D drawings and increasingly complex models.	Create and manipulate 3D shapes to create 3D drawings and increasingly complex models.
PRESENTATION SKILLS				Create slide templates Create hyperlinks (including buttons) between slides Format transitions, animation and themes.	Create slide templates Create hyperlinks (including buttons) between slides Format transitions, animation and themes.		
ANIMATION				Create a simple digital 2D animation.	Create a simple digital 3D animation.		
VIDEO EDITING				Record and edit videos using iMovie, using features such as transitions and filters.	Record and edit videos using iMovie, using features such as transitions and filters.		Record a video on one device and import to another. Edit video footage using Windows Movie Maker (WMM), using features such as transitions, captions, information cards. Insert audio to a video using WMM.
WEBSITE					Create a webpage with appropriate layout, which includes an animation.	Create a webpage with appropriate layout, using features from previous units of	Create a webpage with appropriate layout, using features from previous

						Information Technology.	units of Information Technology.
AUDIO RECORDING			Record and manipulate sound files.			Record and manipulate sound files. Record a podcast and radio advertisement.	
SPREAD SHEETS						Entering data. Using the sum formula Design a simple spreadsheet.	Entering data. Using the sum formula Order and manipulate data using MIN, MAX and AVERAGE functions. Design a spreadsheet for a specific purpose.
KEY VOCABULARY	mouse screen keyboard computer tablet	text Input font images Microsoft Word word processing	folder presentation Microsoft PowerPoint text images paint drawing tool fill tool shape tool audio sound	screenshot shift caps lock text box keyboard shortcut grouping template transition animation theme stop motion animation iMovie record video editing video file	transition theme format hyperlinks webpage spellcheck table 2D animation stop motion animation iMovie record video editing filter transition video file	format spellcheck table hyperlinks webpage domain hyperlink publishing CAD (computer-aided design) 3D modelling inference point mp3 (audio file) microphone podcast	format spellcheck table webpage hyperlinks spreadsheet Microsoft Excel data formula sum function min function max function average function import export mp3 (audio file) mp4 (video file) media

COMPUTING SCIENCE

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
SKILLS		Instruct a sprite to move and change size. Create a program that plays a sound. Create simple, precise and ordered instructions using pictures.	Use left and right turn algorithms. Give and follow algorithms to make half and quarter turns. Using a repeat function. Change the backdrop on Scratch. Begin to debug simple programs	Use turning algorithms to make more complex shapes and patterns. Begin to debug simple programs involving the skills above	Begin to use variables. Decompose and edit a program. Using algorithms to draw, including the use of different colours, fill effects and arcs. Begin to debug simple programs involving the skills above.	Design a maze game. Adding and using effects in Scratch. Design and create a game with a specific goal. Independently debug programs involving the skills above	Structure and time events. Controlling when objects are visible. Sequencing events. Adding interactive features to a program. Use 'when,' 'if' and 'do' functions. Evaluate a game to increase or reduce challenge.
KEY VOCABULARY		sprite algorithm ordered instructions sound Scratch Jr	algorithm turn command repeat function backdrop debug Scratch Turtlelogo sprite	algorithm repeat function debug Scratch Turtlelogo sprite sequence code	algorithm repeat function debug variable arc Scratch Turtlelogo sprite sequence code	algorithm repeat function debug variable Scratch sprite score sequence code	iteration broadcast receive algorithm repeat function debug variable Scratch sprite sequence code