MBK Year 5 Computing Long term progression plan

Multi-media	Programming	Data	Digital Literacy	Information Technology	Knowledge	Skills

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Unit/focus	Self-esteem and identity linked with photo editing	Using a flat file database to sort data and answer given questions.	Using micro controllers (Crumbles) to create using selection	3D design using CAD. Digital literacy on gaming.	Computing systems and networks. Computational thinking.	Selection in quizzes using Scratch
Planning resources	Creating digital media – Photo editing	Flat file Databases	Programming A Selection in physical computing medium term plan	3D modelling medium term plan	Internet medium term plan Intelligent piece of paper Spit not so	Programming B Selection in quizzes medium term plan **OR** Make a Game lessons for classes with more experience of Scratch
	Gender stereotypes online YouTube playlist Commonsense media copyright lesson	Trust me – Lesson 1 on reliable content		Keeping games fun and friendly Caught in the web (middle section on gaming) Parent leaflet on online gaming		
	nonogrids Non-verbal reasoning problems Teleporting robot					
Physical resources	Childnet online reputation poster	i-Pad/tablet Chromebook/laptop Internet access (J2e data)	Crumble starter kit Chromebook/laptops Crumble software	Internet TinkerCAD log in and class code	Teams or similar to do collaborative work.	Chromebook/laptop Internet access for Scratch Possible class logins

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Knowledge and skills	Know where to find copyright-free content, e.g. creative commons images.	I can evaluate digital content and can explain how to make choices about what is trustworthy e.g. differentiating between adverts and search results.	- I can build a simple circuit to connect a microcontroller to a computer - I can explain why I used an infinite loop - I can program a microcontroller to light an LED	To use a computer to create and manipulate three-dimensional (3D) digital objects, selecting appropriate software and hardware	To explain that computers can be connected together to form systems	To explain how selection is used in computer programs
	Consider the audience when designing and creating digital content.	I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence.	- I can connect more than one output device to a microcontroller	To compare working digitally with 2D and 3D graphics	To recognise the role of computer systems in our lives	To relate that a conditional statement connects a condition to an outcome
	I can give examples of positive and negative effects that retouching can have on an image	I can identify ways the internet can draw us to information for different agendas, e.g. website notifications, **pop-ups**, targeted ads.	- I can explain that a condition is something that can either be true or false (eg whether a value is more than 10, or whether a button has been pressed)	To identify that physical objects can be broken down into a collection of 3D shapes and to design a digital 3D model by combining the shapes.	To recognise how information is transferred over the internet	To explain how selection directs the flow of a program

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	Define "gender stereotypes" and describe how they can be present online. Understand that they can lead to unfairness or bias.	To outline how grouping and then sorting data allows us to answer questions	- I can explain that a condition being met can start an action - I can identify a condition and an action in my project	I can describe some of the ways people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions. (e.g. gaming communities or social media groups).	To explain how sharing information online lets people in different places work together	To design, create and evaluate a program which uses selection
	I can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online.	To explain that computer programs can be used to compare data visually	Recognise that different solutions may exist for the same problem.	I can identify times or situations when someone may need to limit the amount of time they use technology e.g. I can suggest strategies to help with limiting this time.	To evaluate different ways of working together online	To develop and apply the skills learnt in Term 3.

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	I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an **avatar**; social media) and why.	Explain the difference between data and information.	Use two-way selection in programs and algorithms, i.e. if…then…else…	I can give examples of technology-specific forms of communication (e.g. **emojis, memes and GIFs**).	Students understand that computers are not intelligent and need to be programmed logically to work.	I can decompose a game into parts.
	Evaluate their own content against success criteria and make improvements accordingly.	I can choose multiple criteria to answer a given question - I can choose which field and value are required to answer a given question - I can outline how 'AND' and 'OR' can be used to refine data selection	I can decide which output devices I control with a count-controlled loop - I can design sequences for given output devices	I can explain how and why some apps and games may request or take payment for additional content (e.g. **in-app purchases**, **lootboxes**) and explain the importance of seeking permission from a trusted adult before purchasing.	Students communicate with each other clearly to complete an online shared project.	
	I can choose appropriate tools to retouch an image	I can explain what a 'field' and a 'record' is in a database	I can program a microcontroller to respond to an input	Identify success criteria for creating digital content for a given purpose and audience.		

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	I can identify how an image has been retouched - I can explain ways that some of the information about anyone online could have been created, copied or shared by others.	Students can make decisions on what they trust online using agreed criteria	I can use selection (an 'if… then…' statement) to direct the flow of a program	Evaluate their own content against success criteria and make improvements accordingly.		
	I can give examples of content that is permitted to be reused and know how this content can be found online.	To apply my knowledge of a database to ask and answer real-world questions	I can test and debug my project - I can use selection to produce an intended outcome - I can write an algorithm to control lights and a motor	- I can position 3D objects in relation to each other - I can rotate a 3D object - I can select and duplicate multiple 3D objects		
Ongoing skills	-Type using fingers on both hands. - Use common keyboard shortcuts, e.g. ctrl C (copy), ctrl V (paste). - 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.					