Subject overview: Computing

What does a Computing look like at Mengham Infants? What personal skills and characteristics of learning, are particularly relevant for this subject?
Computing at Mengham is designed so that children are equipped with computational thinking skills and creativity to solve problems and to understand and change the world. All children use their resilience in order to tackle increasingly difficult problems. There are 2 strands to computing development. We follow Identify -> develop -> explain or Imitate -> Adapt -> Create depending on what our task is and what skills we will need to complete that task. Children will recognise the value of computing and its various uses in the world we live. We also understand how we keep ourselves and others safe online. Our computing curriculum is designed to be applied in other subjects areas to enhance learning and to present information including as part of class blogs.

These are the key skills and knowledge that a Computer programmer will develop during each year (**not just EYFS/NC objectives**):

Year R	Year 1	Year 2
Computer Science (Programming) – Needs to be taught on more than 1 occasion in more than 1 way		
Sequence ideas and events Create maps and instructions for people to follow Become designers and builders in a variety of contexts Sort objects etc in a variety of ways -> Spot when something is in the wrong place Use the language if…then… Find the requirements of a list (scavenger hunt) Experiment with Beebots and other programmable toys to write simple algorithms and programmes	Explain the words: algorithm, programme and code Identify sets of steps or instructions in an algorithm for a variety of different devices and contexts Follow the steps of a given code Create sets of algorithms Explain what algorithms we have created and others do Complete and unfinished algorithm Reverse the steps of an algorithm Identify, correct and explain errors and bugs in code	Including Year 1 objectives and add: Create algorithms/code with a limited set of commands Refine a sequence of commands to make it more effective Use the 'repeat' command Predict the results of algorithms and programmes
Using Technology		
To be able to log on and off the computer To be able to type their own name To understand the purposes of different equipment such as cameras and computers Taking photographs using cameras and tablets Operating simple equipment Investigating things using visualisers Using a voice recorder Add audio to videos they have created (Puppet Pals)	To discuss and talk about control technology and new technologies' and understand how to use them To select the appropriate program by finding and retrieval through the school network To save and retrieve work they have created	To use of a wide range of technology and can describe how it works in a variety of different contexts To select the appropriate piece of technology for a particular purpose and communicate this To discuss how information can be sent and received over the internet and how this can be done safely – eg facebook, whatsapp, email etc.
	Word processing and publishing:	

To use a simple paint programme to create pieces around their interests	Put text on screen Use the space bar, the return key and use shift to make a Capital letter Moving on to using upper and lowercase letters Practise keyboard skills using both hands, try to use more than two fingers and try to use the thumb on the space bar. To cut, copy and paste onto a document Use word processing and desktop publishing skills for specific problems/purposes	Develop speed when typing Make simple modifications to their work (edit) using the arrow keys Change the font style, size and colour Import graphics and add text to a document Use word processing and desktop publishing skills for specific problems/purposes
	Online	
	Explore a website by clicking on buttons, arrows, menus and hyperlinks. Navigate 'back' by clicking on the 'back' button. Complete a search under the supervision of adults.	Discuss which websites are most effective for the information they need Search with increasing independence (refer to e-safety)
	Presentation software	
	Add text, pictures and audio to create own audio book Edit by changing the size of the text, pictures etc	Using computer-based software Add text, pictures, video and audio Add slide transition and sound effects
	Art packages	
	Be able to use a simple package (2Paint) as a medium to convey their ideas, as one of a range of media available. Discuss the names of different tools	Use a wide range of tools within an art package such as: pen, fill and line tools Choose and create their own colours Use art packages for specific problems/purposes
	Digital photography	

	Use devices to take pictures and record video Select and sort through photos Discuss features of effective photos and improve their own photos through retaking them	Use photo editing software to enhance photos we have taken To use a video editing programme to edit photos and videos together
	Green Screen and Stop Motion	
	As part of small groups (with an adult) Record their own videos using green screen technology	With increasing independence: Record their own videos using green screen technology Create simple stop motion animations
E-Safety		
To talk about what they are doing on a computer or other device To say if something they find on the internet makes them feel bad and what to do about it To speak to an adult about what they have seen To follow the school's safer internet rules	To begin to evaluate websites and know that everything on the internet is not true To recognise that the majority of technology devices have access to the internet To understand that some information is personal and should not be shared online To know how to act if they find inappropriate content online To follow the school's safer internet rules To begin to understand the term web address To email safely as a class	*Recap year 1 as well as:* To recognise that there are other people on the internet and this affects how they should use it To know how to act if they find inappropriate content online To tell a trusted adult if someone they don't know tries to contact them via the internet To understand that they should only open an email from someone they know To send and receive emails safely To understand why passwords shouldn't be shared To use the internet safely for learning and communicating with others To recognise advertising on website and learn to ignore it To recognise why some websites and apps have age restrictions
Subject Leader - What three questions are key to you ensuring you have led your subject so that it has a positive impact on the children?		

Are children able to use and explain the key vocabulary?

Is learning in computing being applied across the curriculum? (Not just 'taking photos but also including programming)

Can children identify strategies for staying safe online?