Progression planning for computing

Key computing concepts which will be covered and revisited: To code/ To communicate/ To connect/ To collect (E-safeguarding to be taught throughout every session)

Year 1

Tier 2: Sequence, instruction, game, research, maps, source, caption, communicate, app, object, action, error, event, run, repetition, locate, graph

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Focus/ Big Question	Espresso Coding What does home mean to you? To code	Clicker 6 DK find out Life on land is better than life under water. *Agree or disagree.* To communicate	Lego storytelling Should you give up on your dreams if they are too big?	Publisher Word Has London stayed the same through the years? To communicate	Espresso coding How does life in England compare with life in Tanzania? To code	Graphing programme What if the world was flat? Data collection To collect
Tier 3 subject specific vocabulary	Program Code Algorithm Command Debugging (fixing a broken algorithm) Bug Execute Input Loop Sprite	Publish Search engine World wide web (www) Google e-book (research)	Web cam/ camera Programme	Blog Publish Audience Hashtag	Program Code Algorithm Command Debugging (fixing a broken algorithm) Bug Execute Input Loop Sprite	Data base Chart Tally Collate Data Pictorial representation Statistics Pie chart Bar graph
What should children know, be able to do and remember?	**All children** should be able to log on and find espresso coding. Children will be able to listen to and follow the instructions. Children will follow the instructions to create a simple algorithm that will run the program. **Most children** will follow the instructions and create an algorithm to match, they will de-bug any	**All children** will be able to use the internet (search engine or an e-book) to research a subject (e.g. sea creatures) they will know 1 or 2 key pieces of information. **Most children** will use more than one source to be able to recall some key facts they have found from their research, this may be	**All children** will be able to make a storyboard using lego, they can take a photograph of their story and add a simple caption. **Most children** will be able to add more than one caption to their photograph and print this. **Some pupils** will be able to create multiple scenes which are photographed and have captions added to tell a story.	**All children** will use a familiar programme such as word to write a blog about a structure they have researched. **Most children** will be able to write their blog and copy and paste an image of their choosing from the internet **Some pupils** will use some key vocabulary	**All children** should be able to log on and find espresso coding. Children will be able to listen to and follow the instructions. Children will follow the instructions to create a simple algorithm that will run the program. **Most children** will follow the instructions and create an algorithm to match,	**All children** will use a computer programme to record the results of their research this will include basic tallies, charts and graphs. They will draw simple conclusions from this. **Most children** will be able to apply this learning to other surveys/ findings. They will combine

	mistakes in the programme and execute the program. **Some children** will be able to create their own code for their game. They will spot 'bugs' deliberately planned in the program. They will execute the program.	recorded electronically using Clicker 6. **Some pupils** will use a number of web based sources of information. The may copy and paste an image from the internet. They will collate this into an e-book using Clicker 6.		in the blog to promote their writing.	they will de-bug any mistakes in the programme and execute the program. **Some children** will be able to create their own code for their game. They will spot 'bugs' deliberately planned in the program. They will execute the program.	totals and find the difference. **Some children** will use the programme to present their findings using different graphs eg bar graph, pie chart.
Links to the key curriculum drivers	**Basic skills** – Cooperation, sequencing positional and directional language **Aspirations** – Preparing pupils for the next stage in their education and employment ensuring they are confident in using technology	**Basic skills** – Children to use the basic skills of reading and writing to read and process information they have found and use this information to write their facts. Children to develop their basic computing skills allowing them to use programmes across the curriculum.	**Basic skills** – Children develop their literacy skills (oracy and storytelling) by creating their own story sets and using these to retell/ create their own story.	**Basic skills** – Children to use the basic skills of reading and writing to read and process information they have found and use this information to write their blog. Children to develop their basic computing skills for communication.	**Basic skills** – Cooperation, sequencing positional and directional language **Aspirations** – Preparing pupils for the next stage in their education and employment ensuring they are confident in using technology	**Basic skills** – Children will use their skills as a mathematician to record their statistical findings. This will include interpreting data, asking and answering simple questions about the data and totalling and comparing statistical data
Wider curriculum links/ opportunities (National curriculum, British values, Christian values) Focus on relevant texts/ books	**Geography** – Normanton/ Maps	**Science** – Animals/Living things	**History** – Florence Nightingale/hospital/soldiers		**Geography** – Normanton/ Maps	**Science** – Animals and living things **Maths** – Statistics
Building blocks required	Children have been taught: To log on Choose the necessary program Use the keyboard Log off	Children have been taught: To log on Choose the necessary program Use the mouse Use the keyboard Use basic typing skills	Children have been taught: To log on Choose the necessary program Use the mouse Use the keyboard Take a photograph Use basic typing skills	Children have been taught: To log on Choose the necessary program Use the mouse Use the keyboard	Children have been taught: To log on Choose the necessary program Use the keyboard Log off	Children have been taught: To log on Choose the necessary program Use the touch screen Use the mouse

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		Save their work Print their work Log off	Save their work Print their work Log off	Use a photograph from the computer (saved) Use basic typing skills Save their work Print their work Log off		Use the keyboard to input numbers Log off

Program	A set of instructions in a programming language or code that tells the computer what to do.
Code	Computer programs are made using a special language called code. Coding is used so that the computer understands what to do.
Algorithm	A set of steps to solve a problem
Command	In computing, a command is a directive to a computer program to perform a specific task.
Debugging	Correct mistakes in a computer code
Bug	A mistake or problem in a computer program
Execute	To run a program i.e. to make a program follow the instructions in its code.
Input	An action such as clicking on a button on screen using a keyboard or mouse, or tilting a tablet
Loop	A repeating set of instructions
Sprite	A graphic that is made up of a series of frames

Positional language is taught through the use of beebots this takes place throughout the year rather than during a specific topic.

For further information https://www.bbc.co.uk/bitesize/clips/ztgxhyc#

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EYFS	Year 1	Year 2
•Completes a simple program on a computer. •Uses ICT hardware to interact with age-appropriate computer software. Early Learning Goal Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes. In the EYFS children have had the opportunity to: Log on to the computers in the classroom and choose a program. Children have experienced a range of technology through provision such as light boxes, cameras, iPads and as a result will use these age appropriately. To prepare children for coding in KS1 and to provide further hands on experiences of technology in the EYFS bee bots are used to introduce basic programming skills, this includes moving the beebot forwards, backwards and to the left and right and observe how the beebot responds to these instructions.	In Year 1 children have had the opportunity to: Use their prior knowledge of logging on in the EYFS and their basic programming skills through the use of beebots to: Input simple instructions to move a beebot both practically and on screen. Input simple instructions to programs such as Espresso coding. Explore how code makes the sprite on screen move and learn what happens when there is a mistake in the program/algorithm. Inputting numbers into graphing programmes and interpreting the data using simple questions. Use simple word processing skills in word, storytelling and powerpoint and know how to open, print and save their work.	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.

Progression planning for computing

Year 2

Tier 2: Sequence, instruction, game, research, maps, source, caption, communicate, app, object, action, error, event, run, repetition, locate, graph, author

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Focus/ Big Question	Lego storytelling Is it right to fight for what you believe in? WW2 To communicate	DK find out Powerpoint Why can't we live on Mars? To communicate	Espresso coding Where in the world have you been and what have you seen? To code	Publisher Word How unsinkable was the infamous Titanic? To connect	Graphing programme Do all living things sleep at night time? To collect	Lego coding How does your garden grow? To code
Tier 3 subject specific vocabulary	Web cam/ camera Programme	Publish Search engine World wide web (www) Google (maps) e-book (research)	Program Code Algorithm Command Debugging (fixing a broken algorithm) Bug Execute Input Loop Sprite	Blog Publish Audience Hashtag	Data base Chart Tally Collate Data Pictorial representation Statistics Pie chart Bar graph (Maths)	Program Code Algorithm Command Debugging (fixing a broken algorithm) Bug Execute Input Loop Sprite
What should children know, be able to do and remember?	**All children** will be able to make a storyboard using lego, they can take a photograph of their story and add a simple caption. **Most children** will be able to add more than one caption to their photograph and print this. **Some pupils** will be able to create multiple scenes which are photographed and have captions added to tell a story.	**All children** will be able to use the internet (search engine or an e-book) to research a subject (e.g. space) they will know 1 or 2 key pieces of information. **Most children** will use more than one source to be able to recall some key facts they have found from their research, this may be recorded electronically. **Some pupils** will use a number of web based sources of information.	**All children** should be able to log on and find espresso coding. Children will be able to listen to and follow the instructions. Children will follow the instructions to create an algorithm that will run the program. **Most children** will follow the instructions and create an algorithm to match, they will de-bug any mistakes in the programme and execute the program.	**All children** will use a familiar programme such as word to write a blog about the Titanic from their research. **Most children** will be able to write their blog and copy and paste an image of the Titanic from the internet **Some pupils** will include hashtags for key vocabulary in the blog to promote their writing.	**All children** will use a computer programme to record the results of their research (nocturnal animals) this will include basic tallies, charts and graphs. They will draw simple conclusions from this. **Most children** will be able to apply this learning to other surveys/ findings. They will combine totals and find the difference. **Some children** will use the programme to	**All children** should be able to log on and find the Lego coding programme. All children can follow the basic instructions to build a crocodile/boat with a peer though they made need help to spot remedy/mistakes. All Children will be able to add code to make their model move. **Most children** will follow instructions to make the model with a peer correcting mistakes with adult support if necessary.

		The may copy and paste an image from the internet. They will collate this into a document e.g. publisher.	Some children will be able to create their own code for their game. They will spot 'bugs' deliberately planned in the program. They will execute the program and explore the use of loops to repeat a code.		present their findings using different graphs eg bar graph, pie chart.	They will add code to make the model move. They will experiment with this code to include sound. Some children will confidently build the model and recognise where this may have been done incorrectly, they will work back and (de-bug) fix the problem. They will correctly code their model and will add other functions such as repeat/timer. If this does not perform as they expected they will go back and de-bug the programme. They may experiment with looping algorithms.
Links to the key curriculum drivers	Basic skills – Children develop their literacy skills (oracy and storytelling) by creating their own story sets and using these to retell/ create their own story.	Basic skills – Children to use the basic skills of reading and writing to read and process information they have found and use this information to write their facts. Children to develop their basic computing skills allowing them to use programmes across the curriculum.	Basic skills – Cooperation, sequencing positional and directional language Aspirations – Preparing pupils for the next stage in their education and employment ensuring they are confident in using technology	Basic skills – Children to use the basic skills of reading and writing to read and process information they have found and use this information to write their blog. Children to develop their basic computing skills for communication.	Basic skills – Children will use their skills as a mathematician to record their statistical findings. This will include interpreting data, asking and answering simple questions about the data and totalling and comparing statistical data	Basic skills – Cooperation, sequencing positional and directional language Aspirations – Preparing pupils for the next stage in their education and employment ensuring they are confident in using technology
Wider curriculum links/ opportunities (National curriculum, British values, Christian values)	History – Propaganda posters linked to Land Girls (WW2 topic)	Science – Space History – Significant person (Neil Armstrong)		Literacy- Storytelling	Science – Nocturnal animals Maths – Statistics	Maths - Linked to positional and directional vocabulary.

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Focus on relevant texts/ books						
Building blocks required	Children have been taught: To log on Choose the necessary program Use the mouse Use the keyboard Take a photograph Use basic typing skills Save their work Print their work Log off	Children have been taught: To log on Choose the necessary program Use the mouse Use the keyboard Use basic typing skills Save their work Print their work Log off	Children have been taught: To log on Choose the necessary program Use the touch screen Use the mouse Use the keyboard Log off	Children have been taught: To log on Choose the necessary program Use the mouse Use the keyboard Use a photograph from the computer (saved) Use basic typing skills Save their work Print their work Log off	Children have been taught: To log on Choose the necessary program Use the touch screen Use the mouse Use the keyboard to input numbers Log off	Children have been taught: To log on Choose the necessary program Use the touch screen Use the mouse Use the keyboard Log off

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