Computing Long Term Curriculum Plan

ELG 15	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes		
	Autumn	**Spring 1**	**Summer 1**
Reception Curriculum	Children engage in the home corner – they use the phone, oven and washing machine as part of their home based roleplay.	Children use programmes on the interactive whiteboard to practise maths games and sentence games. They also use a programme to design a house, thinking about where to place doors, windows, fences etc.	We use beebots as part of the minibeast topic. We learn how to program them as well as practise beebot coding skills on the ipad
Computing areas	Computers and hardware	Digital literacy Computational thinking	Computational Thinking
curricular Links	Drama – role play	DT – design a house	Science – mini beasts
Reading opportunity	Independent reading in the book corner	Children follow instructions and read captions	The Hungry Caterpillar, The Very Busy Spider, The What the ladybird Hear, The Teeny Weeny Tadpole Reading captions and making labels for the classroom
Writing Maths skills		Maths games SPAG games	Maths games SPAG games
School Values	1) Knowledge and Skills 2) Confidence & experiences	1) Knowledge and Skills 2) Confidence & experiences	1) Knowledge and Skills 2) Confidence & experiences

Computing Long Term Curriculum Plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 Curriculum	**Getting Started** Children are introduced to using computers more purposefully, learning to login & navigate around a computer, develop their mouse skills, learn how to drag, drop, click & control their cursor to create works of art.	**Programming** Children use Bee-Bots to navigate an area and constructing simple algorithms, through the story of The Three Little Pigs	**Algorithms** Away from computers, children relate algorithms, decomposition & debugging to familiar contexts, while learning why their instructions need to be specific and unambiguous	**Digital Imagery** Children plan a miniature adventure story and capture it using their developing photography skills. They learn to enhance their photos using a range of editing tools as well as searching for and adding other images to their project, resulting in a high-quality photo collage showcase	**Data** Pupils learn what data is & different ways that it can be represented, both with & without a computer. They develop their understanding of why data is useful, how it can be used & ways in which it can be gathered & recorded both by humans & computers	**Rockets** Children design, build & test rockets. They develop their keyboard & mouse skills, creating a digital list of materials, using drawing software & recording data. They develop their computational skills through sequencing and debugging a set of instructions
Computing areas	Digital literacy Computers & hardware	Computational thinking	Computational thinking	Digital literacy Computers & hardware Computational thinking	Digital literacy E Safety Computers & hardware	Digital literacy E Safety
curricular Links	Art: Children create art in the style of Kandinsky and self portraits	Geography: Children use bee bots to navigate a map	Geography: Children debug bee bots path around a map	Art: Children create a photo collage	Science: mini beasts hunt	DT: design and make a rocket History: space exploration
Reading opportunity	Children read the 3 Little Pigs and use pictures to retell a scene from the story and use a bee bot to navigate a story map.		Children read instructions Children read adventure stories		Non-fiction books on mini beasts Children read and follow instructions on how to build a rocket	
Writing Maths skills	Maths: shape & direction Writing: Children write instructions for the bee bot		Maths: shape & direction Writing: Children write instructions Children create a story		Maths: creating charts and graphs Measuring distances Writing: lists	
School Values	1) Knowledge and Skills 2) Relevance of skills 3) Confidence & experiences		1) Knowledge and Skills 2) Relevance of skills 3) Confidence & experiences		1) Knowledge and Skills 2) Relevance of skills 3) Confidence & experiences	

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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 2 Curriculum	**What is a computer?** Children learn exactly what a computer is, with pupils identifying and learning how inputs and outputs work, how computers are used in the wider world and designing their own computerised invention	**Word Processing** Children learn about word processing and how to stay safe online. They develop their touch typing skills & are introduced to keyboard shortcuts, & simple editing tools within a word processor.	**Programming** Using the app 'ScratchJr', pupils program a familiar story and an animation of an animal, make their own musical instruments and follow an algorithm to record a joke	**Algorithms** This combination of unplugged and plugged-in activities develop children's understanding of; what algorithms are, how to program them and how they can be developed to be more efficient, introducing pupils to loops	**Space Station** Building on their understanding of how computers sense the world around us, pupils learn how data is collected, used and displayed to keep astronauts safe onboard the ISS	**Stop Motion** Pupils learn how to create simple animations, storyboarding their ideas & decomposing the story into small parts of action to be captured using the Stop Motion Animation.
Computing areas	Computational thinking Computers & hardware	Digital literacy E Safety	Computational thinking Digital literacy	Computational thinking	Digital literacy Computational thinking	Digital literacy Computers & hardware
curricular Links	DT: Children design their own invention PSHCE: careers	PSHCE: Making friends online & staying safe	Music: Children compose a short piece	Geography: Children create a simple map of school	Science: Space & growing plants PSHCE: careers	Art: creating sets and characters
Reading opportunity	Children read poems selecting their favourite for an anthology		Children read The 3 Little Pigs and a range of jokes. They read and follow instructions.		Children research information about planets using the internet	
Writing Maths skills	Writing: Children create an information poster on E Safety		Maths: shape & direction		Maths: creating charts and graphs Measuring temperature Writing: children create story boards	
School Values	1) Knowledge and Skills 2) Relevance of skills 3) Global Citizen 4) Moral & Spiritual development		1) Knowledge and Skills 2) Relevance of skills 3) Confidence & experiences		1) Knowledge and Skills 2) Relevance of skills 3) Confidence & experiences	

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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3 Curriculum	**Email** Pupils learn how to send emails, including attachments and how to be responsible digital citizens	**Inside a Computer** Children learn about the different parts of a computer through role-play and develop their understanding of how they follow instructions	**Databases** Developing their understanding of data and databases, children play with and create their own Top Trumps cards, learning how to interpret information by ordering and filtering.	**Digital Literacy** Developing their video skills, pupils create a book trailer, storyboarding their trailers before then filming and editing their videos, adding effects such as transitions, music, voice and text	**Programming** Using Scratch, with its block-based approach to coding, pupils learn to tell stories and create simple games	**Networks** To understand how computers communicate, children learn about networks and how they are used to share information.
Computing areas	Digital literacy E Safety	Computational thinking Computers & hardware	Digital literacy	Digital literacy	Computational thinking	Computers & hardware
curricular Links	PSHCE: Cyberbullying, respect & responsibility	PSHCE: careers	PSHCE: fair play Geography: plan a holiday	Drama: Performing a film trailer	Music: Composing	Geography: create a map of school
Reading opportunity	Children read emails and consider what is appropriate and not appropriate. Children read and follow instructions.		Children read Top Trumps cards.		Children read example stories Children use the internet to carry out research	
Writing Maths skills	Writing: Children write emails Write explanations of different parts of the computer		Maths: collecting and presenting data / Time Writing: children create story boards & book reviews		Writing: children create story boards	
School Values	1) Knowledge and Skills 2) Relevance of skills 3) Moral & Spiritual development		1) Knowledge and Skills 2) Relevance of skills 3) Confidence & experiences		1) Knowledge and Skills 2) Confidence & experiences 3) Relevance of skills	

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Year 4 Curriculum	**Collaborating** Learning to work collaboratively in a responsible way using tools including Google Docs and Sheets	**The Internet** Children learn what the Internet is & how it works. Acting out different processes, they gain a deeper understanding of how data is transferred & how this enables us to view & interact with different websites	**Website Design** Pupils design and create their own websites, considering content and style, as well as understanding the importance of working collaboratively.	**HTML** Pupils explore the language behind well known websites, while developing their understanding of how to change the core characteristics of a website using HTML and CSS	**Weather** Children investigate the role of computers in forecasting and recording weather as well as how technology is used to present forecasts	**Computational Thinking** Children refer to the four skill areas needed to solve problems effectively: abstraction, algorithm design, decomposition & pattern recognition. They explore & apply these skills in a range of plugged & unplugged activities.
Computing areas	Digital literacy E Safety	Digital literacy E Safety Computers & hardware	Digital literacy E Safety	Digital literacy E Safety Computational thinking	Digital literacy E Safety Computational thinking	Computational thinking
curricular Links	PSHCE: rules, respect & responsibility	PSHCE: careers	PSHCE: team work	PSHCE: Fake news	Science/Geography: weather PSHCE: careers	PSHCE: careers
Reading opportunity	Children read surveys & questionnaires Children use the internet to carry out research		Children read books to review Children read news reports & consider reliability		Children use the internet to carry out research	
Writing Maths skills	Writing: Children write presentations Maths: collecting and presenting data		Writing: children create book reviews and create information texts for their own website. They write news reports.		Writing: children create weather reports Maths: collecting & presenting data / measures	
School Values	1) Knowledge and Skills 2) Relevance of skills 3) Moral & Spiritual development		1) Knowledge and Skills 2) Relevance of skills 3) Moral & Spiritual development		1) Knowledge and Skills 2) Confidence & experiences 3) Relevance of skills	

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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5 Curriculum	**E Safety** Pupils create an online safety resource for younger children using tools such as presentation software, video tools or a simple stop-motion animation	**Programming** Pupils create algorithms and programs a micro:bit. They predict, test and evaluate to create and debug programs with specific aims: a simple animation, a polling program, pedometer and scoreboard	**Search Engines** To enable children to quickly and accurately find information and become independent learners, they need to develop their searching skills and learn how to identify trustworthy sources	**Sonic Pi** Composing music using code through Sonic Pi, pupils can import samples, add drum beats and compose simple tunes culminating in a 'battle of the bands' using live loops of music	**Mars Rover** Pupils explore inputs and outputs as well as Binary numbers to understand how the Mars Rover transmits and receives data and how scientists are able to control it to explore another planet! Children learn how the Mars Rover is able to send images all the way back to Earth and experiment with online CAD software to design new tyres for it	
Computing areas	Digital literacy E Safety	Computational thinking Computers & hardware	Digital literacy E Safety	Digital literacy Computational thinking	Digital literacy Computers & hardware	
curricular Links	PSHCE: rules, respect & responsibility Personal safety	PSHCE: careers, health & wellbeing	PSHCE: fake news	Music: composition & how music helps wellbeing & mood	Science: Space Art: pixel art PSHCE: careers DT: designing tyres	
Reading opportunity	Children use the internet to carry out research		Children read information online & consider reliability Children read a story to create a soundtrack for		Children use the internet to carry out research and read Information texts on Space	
Writing Maths skills	Writing: Children write story boards Maths: collecting and presenting data		Maths: sequences and patterns. Writing: Children create an information text based on own research		Maths: Calculating distances/ data handling/ calculate binary addition & subtraction Writing: Presentations	
School Values	1) Knowledge and Skills 2) Relevance of skills 3) Moral & Spiritual development		1) Knowledge and Skills 2) Relevance of skills 3) Moral & Spiritual development		1) Knowledge and Skills 2) Relevance of skills 3) Confidence & experiences	

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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 6 Curriculum	**Python** Building on their knowledge of coding from previous years, children are introduced to the text-based programming language Python, which is the language behind many apps and programs, such as Dropbox	**Data** Children learn how data is collected and stored by exploring barcodes, QR codes and RFID chips, and investigate how collecting big data can be used to help people in a variety of different scenarios	**Bletchley Park** Children learn about the history of Bletchley Park, & how the first modern computers were created at as part of a WWII code breaking team. They consider how computers have evolved over time & investigate secret codes & how they are created, exploring 'brute force' hacking & how to make passwords more secure.		**Data 2** Children learn the difference between mobile data and WiFi and how data is transferred and use their understanding of big data to design their own smart school	**Showcase** Designing a product, pupils: evaluate, adapt & debug code to make it suitable & efficient for their needs; use a software program to design their products & then create their own websites & video adverts to promote their inventions
Computing areas	Computational thinking	Digital literacy Computers & hardware	Digital literacy E Safety Computational thinking		Digital literacy E Safety	Digital literacy E Safety Computers & hardware Computational thinking
curricular Links	Art & Design: creating own Islamic art & work inspired by Mondrian	History: Al-Zahrawi & Muslim medicine Science: Light PSHCE: careers	History: WWII How computers have changed over time.		DT: designing a smart school PSHCE: privacy	DT: designing an electronic product
Reading opportunity	Children read nonfiction texts & internet research Al-Zahrawi & medicine		Children read nonfiction texts & internet research to develop their understanding of key figures and events from WWII		Children use the internet for research	
Writing Maths skills	Writing: children create a storyboard Maths: writing an 8 digit code/ interpreting data		Writing: An explanation text on the importance of historical computing figure and a radio play Maths: codes & ciphers		Writing: create a website & adverts to advertise their product	
School Values	1) Knowledge and Skills 2) Relevance of skills 3) Confidence & experiences		1) Knowledge and Skills 2) Relevance of skills 3) Global issues		1) Confidence & experiences 2) Relevance of skills	