COMPUTING CURRICULUM PLAN – LORD DERAMORE'S PRIMARY SCHOOL

Intent: Through our computing curriculum, we aim to give our pupils the life-skills that will enable them to embrace and utilise new technology in a socially responsible and safe way (as responsible digital citizens) in order to flourish. We want our pupils to be able to operate in the 21st century workplace and we want them to know the career opportunities that will be open to them if they study computing. We want children to become autonomous, independent users of computing technologies, gaining confidence and enjoyment from their activities. We want the use of technology to support learning across the entire curriculum and to ensure that our curriculum is accessible to every child. Not only do we want them to be digitally literate and competent end-users of technology but through our computing lessons we want them to develop creativity, resilience and problem-solving and critical thinking skills; choosing the most appropriate technology and software to solve real world problems.

Implementation: Computing is taught both discretely and through other subjects. Skills taught are widely used to support learning in other subjects. Topics are on a yearly cycle with skills developing across the phases and year groups. Enrichment activities including visitors, experiences and field trips are carefully planned to enhance the topic and provide first hand and memorable experiences. Progression across each year group and phase is outlined in the progression document, along with key vocabulary, knowledge and skills that children will be taught. Implementation is supported across school by our Computing Specialist.

Impact: Teachers work alongside our computing technician Kat Chandler to develop their teaching expertise and keep abreast of changes in technology. Each class, from Y1-6 works with the support of Kat for on average 1 term throughout the year. Internet safety is weaved throughout the whole curriculum with topics directly addressed in both computing and PSHE lessons. Purple mash and the Google Classroom are used to store children's work and good examples are showcased on Twitter. We ensure that technology and computing are used to support and demonstrate learning across the wider curriculum. Class teachers assess fomratively, using recapping, questioning and observation within lessons to plan subsequent learning. End of year attainment is shared in each child's end of year report and recorded on DC Pro. The computing lead oversees the summative assessment as well as carrying out work trawls and pupil voice.

	PHASE 1		PHASE 2		PHASE 3		
	FS2	Y1	Y2	Y3	Y4	Y5	Y6
Knowledge (substantive and disciplinary)	<u>Understanding the World: Technology ELG: (2012</u> Complete a simple program on age-appropriate software e.g. 2simple, Teach Your Monster to Read Use every day technology for a purpose e.g. make a video, use a music player and speaker Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs. Recognise common uses of information technology beyond school.		Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. 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 technology Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Use sequence, selection, and repetition in programs'; work with variables and various forms of input and output.		Design, write and debug programs that accomplish specific goals, including controlling or simulating physical system; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs'; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Understand computer networks including the internet; how they can provide multiple services, such as the world-wide-web; and the opportunities they offer for communication and collaboration. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		

Progression and Expectations	Algorithms and Programming/Coding Give an instruction to a programmable toy and explore what the toy does Information Technology Use a camera to take pictures and videos and look at them. Record sound and play back. Digital literacy Explore using different types of technology including toys, cameras, recording equipment, tablets etc Taking pics Safe Computer Use Know that they can tell a trusted adult if they are worried about anything they see online	Algorithms and programming/Coding Create a series of instructions. Beebots Plan a journey for a programmable toy. Information Technology Create digital content. 2animate Pictograms Store digital content. Retrieve digital content. Use a website. Use a camera. Record sound and play back. Digital literacy Use technology safely. First lessons Keep information private. Passwords and safety Safe Computer Use Use games and programs that have been approved by the school. Coding Tell a grown up if they see anything inappropriate	Algorithms and programming/Coding Use a range of instructions (e.g. direction, angles, turns). Test and amend a set of instructions. Write a simple program and test it. Algorithms Find errors and amend (debug). Predict what the outcome of a simple program will be (logical reasoning). Information Technology Organise digital content. Pictograms Fruit tasting Words and Pictures Spreadsheets Presenting data Retrieve and manipulate digital content. Pointillism Impressionism Navigate the web to complete simple searches. Digital literacy Use technology respectfully. Know where to go for help if I am concerned. Know how technology is used in school and outside school. Safe Computer Use Use a password to access the secure network Follow the school's safer internet rules	Algorithms and programming/Coding Design a sequence of instructions, including directional instructions. Write programs that accomplish specific goals. Coding Work with various forms of input. Work with various forms of output. Understand that programs require precise instructions. And notice and change errors. Understand that algorithms are used on digital devices. Information Technology Use a range of software for similar purposes. Mondrian Art Collect information. Spreadsheets Design and create content. Pointillism Simple animations Present information. Graphs Branching databases Leaflets Search for information on the web in different ways. Manipulate and improve digital images. Digital literacy Use technology respectfully and responsibly. Know different ways I can get help if I am concerned.	Algorithms and programming/Coding Given an on-screen robot specific instructions that takes them from A to B. Polygons Investigating polygons De-bug a program. Experiment with variables to control models. Make an accurate prediction and explain why they believe something will happen. Information Technology Select and use software to accomplish given goals. Making music Rhythm and Tempo Christmas cards Science Animations Volcano animations Collect and present data. WWII vehicles Produce and upload digital content. Digital literacy Recognise acceptable and unacceptable behaviour using technology. Safe Computer Use Follow the school's safer internet rules. Know that not all information found on the internet is accurate or true Geography searches	Algorithms and programming/Coding Combine sequences of instructions and procedures to turn devices on and off. Lighthouses Detect errors in algorithms. Coding - debugging Use technology to control an external device. Lights Design algorithms that use repetition and 2-way selection. Information Technology Analyse information. Making music Evaluate information. Understand how search results are selected and ranked. Edit digital content. Exploring tempo Times tables spread sheets Digital literacy Understand that you have to make choices when using technology and that not everything is true and/or safe. Safe Computer Use Follow the school's safer internet rules. Use a variety of search engines so that they can find accurate information, knowing that not all information on the internet is true	Algorithms and programming/Coding Explain how an algorithm works. Design a solution by breaking a problem up. Use logical reasoning to detect errors in algorithms. Recognise that different solutions can exist for the same problem. Use selection in programs. Work with variables. Explain 'what if' questions by planning different scenarios for controlled devices. Information Technology Select, use and combine software on a range of digital devices. Use a range of technology for a specific project. Digital literacy Discuss the risks of online use of technology. (Including impact on mental health e.g. body image) Identify how to minimise risks. Safe Computer Use Follow the school's safer internet rules. Make choices about which websites and

				Understand what computer networks do and how they provide multiple services. Discern where it is best to use technology and where it adds little or no value. Safe Computer Use Follow the school's safer internet rules. Know that they have to keep personal information safe on the internet Internet safety E-safety Know how to find help in the case of inappropriate content or cyber bullying	Know the importance of letting someone know if they see something inappropriate E-safety animations	Talk about and identify cyber bullying. Identify ways of getting help when they see something inappropriate online. Know why care must be taken when opening an email or attachment from someone they don't know. Online safety	search engines to use, ensuring they make safe choices. Report inappropriate content they may come across. KNow how to get help with cyber bullying. Know and explain why they should be careful when opening emails and attachments.
Vocabulary	Email Choices, Internet, Website, Rules, Online, Private information, Password Equipment, Computer, camera, laptop, tablet, phone, Buttons, Movement, Instructions, Buttons, Robots, Patterns, Program, Beebot, Botley, Control Screen, Mouse, Images, Keyboard, Paint, Videos, Camera stills, Sounds, Image bank, Word bank, Space bar Technology, Share, Create, Internet, Purpose, Online tools, Communicate Collect, Set of photos, Count, Organise, Photographs, Video, Data, Pictogram, Digitally		Appropriate/inappropriate sites, Cyber-bullying, Digital footprint, Keyword searching, E-safety rules, Secure passwords, Report abuse button, Gaming, Blogs Forward, Backward, Left/Right-angle turn, Algorithm, Sequence, Debug, Predict, Sequence instructions, Sequence debugging, Test + improve, Logo commands, Sequence programming Paint effects, Templates, Animation, Documents, Index finger typing, Enter/return, Caps lock, Backspace, Multimedia Presentations, Alignment, Brush size, Repeats, Reflections, Green screening, Amend, Copy, Paste Information sources, Communication Purposes, Website content, School network, Devices, Computer parts, Collaborate, Appropriate online communication, Search tools, Appropriate websites, Owner		Responsible online communication, Informed choices, Virus threats, Blogs, Messaging, E-safety rules, Secure passwords, Report abuse button, Gaming Explore procedures, Refine procedures, Variable, Hardware + software control, Change inputs, Different outputs, Articulate solutions, Commands, Predicting outputs, Plan, program, test & review a program, Program writing, Control mimics + devices, Sensors, Measure input, Create variables, Link errors,Type + edit logo commands, Open-ended problems, Bugs in programs, Complex programming Online sharing, Multimedia effects, Multimedia modification, Transitions, Hyperlinks, Editing tools, Refining, Online sharing, Appropriate online tools, Audience, Atmosphere, Structure, Copyright, Information collection, HTML code, Storing, Creating + modifying, Photo modifying, Keyboard shortcuts, Computing devices, Internet parts, Collaboration, Responsibility, Searching strategies, Webpages, Information movement, Connecting devices, Different audiences, Research strategies, Search result rankings, Acknowledge resources, Different networks, Information collection, Reliability, Owners		

		Capturing moments, Magnified images, Questions, Data collection, Graphs, Charts, Save, Retrieve, Database, Recording data, Data logger, Present data	Spreadsheets, Complex searches (and/or: </>), Problem solving, Present answers, Analyse information Question data, Interpret, Generate, Process, Interpret, Store, Present information Plausibility, Appropriate data tool, Interrogate, Investigations, Database creation, Database searches, Inaccurate data
Literature		Troll Stink (E-safety)	Little People; Big Dream - Steve Jobs Ada Lovelace: Poet of Science
Experiences	Digital photography Competition (Themed)	Digital photography Competition (Themed)	Virtual reality Digital photography Competition (Themed) Coding club - after school club University of York Robotics The children's society
Diversity	Women in STEM (e.g. Ada Lovellace, Fei Fei Li, Katherine Johnson)	Women in STEM (e.g. Ada Lovellace, Fei Fei Li, Katherine Johnson)	Coding club (focus on girls) Women in STEM (e.g. Ada Lovellace, Fei Fei Li, Katherine Johnson)
Long Term Planning Links	Continuous provision – Botley, Beebots, IWB, iPad, music Computer Science: coding (Beebots, Botley) Information Technology: Purple Mash – animated storybooks and lego-builders Digital Literacy: Using Technology safely – how to use iPad, IWB, camera, talking pots etc. Safe use physically and safe searches on internet Creating and Storing – taking photos and videos, recording voices/sounds, iPad, IWB digital cameras, exploring purple mash	Computer science: coding, IT: Pictures, music, spreadsheets/ databases and graphing, presenting Digital literacy: emails and search engines (including internet safety) Ongoing: Internet safety	Computer Science: coding, game creator and logo IT: spreadsheets, animation, 3D modelling, quizzing, music Ongoing: safe and effective searches and internet safety