

Computing Disciplinary Knowledge & Skills– November '21 developed from STEM learning

	e-Safety* (DL)	Programming (CS)	Handling Data (IT)	Multimedia (IT)	Technology in our Lives (DL)
Early Years (Reception)	 a Know that I should have a trusted adult to speak to if I have any worries about being online b Know that should ask a trusted adult before going online 	2.a Complete a simple program on a computer2.b Use technological tools to move in various directions	3.a Use ICT to record a special event3.b Know that ICT can be used to record things that we have found out	 4.a Use a range of technological tools 4.b Use on/off switches and operate simple equipment including apps on tablets 	5.a Use a range of technological tools5.b Talk about different types of technology in my home and life
End of Key Stage 1 (Year 2)	 1.1 Explain why I need to keep my password and personal information private. 1.2 Describe the things that happen online that I must tell an adult about. 1.3 Talk about why it is im- portant to be kind and polite online and in real life. 1.4 Know that not everyone is who they say they are on the Internet. 	 2.1 Give instructions to my friend (using forward, backward and turn) and physically follow their instructions. 2.2 Tell you the order I need to do things to make something happen and talk about this as an algorithm. 2.3 Program a robot or software to do a particular task. 2.4 Watch a program execute and spot where it goes wrong so that I can debug it. 	 3.1 Talk about the different ways I use technology to collect information, including a camera, microscope or sound recorder. 3.2 Make and save a chart or graph using the data I collect. 3.3 Talk about the data that is shown in my chart or graph. 3.4 Start to understand a branching database. 3.5 Say what kind of information I could use to help me investigate a question. 	 4.1 Use technology to organise and present my ideas in differ- ent ways. 4.2 Use the keyboard on my device to add, delete and space text for others to read. 4.3 Use an online tool that will help me to share my ideas with other people. 4.4 Save and open files on the device I use. 	 5.1 Say why I use technology in the classroom and in my home and community. 5.2 Identify benefits of using technology including finding information, creating and communicating. 5.3 Talk about the differences between the Internet and things in the physical world.
End of Lower key Stage 2 (Year 4)	 S Choose a secure password when I am using a website. T alk about the ways I can protect myself and my friends from harm online. T Use the safety features of websites as well as reporting concerns to an adult. Know that anything I post online can be seen by others. Ghoose websites and games that are appropriate for my age. D Talk about why I need to ask a trusted adult before downloading files and games from the Internet. I comment positively and respectfully online. 	 2.5 Use logical thinking to solve an open-ended problem by breaking it up into smaller parts. 2.6 Use an efficient procedure to simplify a program. 2.7 Use a sensor to detect a change which can select an action within my program. 2.8 Know that I need to keep testing my program while I am putting it together. 2.9 Recognise an error in a program and debug it. 	 3.6 Organise data in different ways. 3.7 Collect data and identify where it could be inaccurate. 3.8 Plan, create and search a database to answer questions. 3.9 Choose the best way to present data to my friends. 3.10 Use a data logger to record and share my readings with my friends. 	 4.5 Use photos, video and sound to create an atmosphere when presenting to different audi- ences. 4.6 Change the appearance of text to increase its effective- ness. 4.7 Create, modify and present documents for a particular purpose. 4.8 Use a keyboard confidently and make use of a spelichecker to write and review my work. 4.9 Use an appropriate tool to share my work and collaborate. 	 5.4 Identify key words to use when searching safely on the World Wide Web. 5.5 Think about the reliability of information I read on the World Wide Web. 5.6 Tell you how to check who owns photos, text and clipart. 5.7 Create a hyperlink to a resource on the World Wide Web.
When we leave the school. Year 6	 1.12 Protect my password and other personal information. 1.13 Explain the consequences of sharing too much about myself online. 1.14 Explain the consequences of spending too much time online or on a game. 1.15 Explain the consequences to myself and others of not communicating kindly and respectfully. 	 2.10 Deconstruct a problem into smaller steps, recognising similarities to solutions used before. 2.11 Explain and program each of the steps in my algorithm. 2.12 Evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm. 2.13 Recognise when I need to use a variable to achieve a required output. 2.14 Use different inputs (including sensors) to control a device or onscreen action and predict what will happen. 2.15 Use logical reasoning to detect and correct errors in a algorithms and programs. 	 3.11 Plan the process needed to investigate the world around me. 3.12 Select the most effective tool to collect data for my investigation. 3.13 Check the data I collect for accuracy and plausibility. 3.14 Interpret the data I collect in an appropriate way. 3.16 Use the skills I have developed to interrogate a database. 	 4.10 Talk about audience, atmosphere and structure when planning a particular outcome. 4.11 Combine a range of media, recognising the contribution of each to achieve a particular outcome. 4.12 Explain why I select a particular online tool for a specific purpose. 	 5.8 Tell you the Internet services I need to use for different purposes. 5.9 Describe how information is transported on the Internet. 5.10 Select an appropriate tool to communicate and collaborate online. 5.11 Talk about the way search results are selected and ranked. 5.12 Check the reliability of a website. 5.13 Tell you about copyright and acknowledge the sources of information that I find online.

We believe these skills are important for life because:

- We want children to have confidence and flexibility to use existing and future digital technologies successfully . (IT)
- We want children to develop a logical approach to creating content and problem solving that can be applied to real life situations (CS)
- We want children to embrace new technologies but to also have a keen appreciation of e-safety, data security and the impact of their digital footprint so that they can use digital devices in a responsible manner now and in their futures. (DL) (*also reinforced in PSHE