Reception Computing Objectives		
ELG: • Recognise that a range of technology is used in places such as homes and schools. • Select and use technology for purposefully.		
Computer Science (Programming and Computational Thinking)	**Information Technology**	**Digital Literacy**
• I can make a floor robot move by itself. • I can use simple software to make something happen. • I can make choices about the buttons and icons I press, touch or click on.	I can tell you about different kinds of information such as pictures, video, text and sound. I can move objects on a screen. I can create shapes and text on a screen. I can use technology to show my learning.	• I can tell you about technology that is used at home and in school. • I can operate simple equipment.

Year One Computing Objectives		
Computer Science (Programming and Computational Thinking) **Spring 1 and Summer 2**	**Information Technology** **Autumn 1, Spring 2 and Summer 1**	**Digital Literacy (Online Safety)** **Autumn 1**
• Predict what will happen for a simple sequence of instructions (algorithm). • Investigate how algorithms work. • Make an algorithm/program to achieve a simple outcome. • Improve a simple algorithm by identifying basic errors (bugs) and correcting (debugging).	• Save via an app or when the saving location has been set by an adult. • Setup a device, by logging in, logging out and shutting down from a website or device. • Input commands using the space bar, backspace, enter, caps lock, letters and numbers on a keyboard on any device (including on a tablet) to enter text. • Input commands using a mouse to control a cursor and use the left click to select options OR use finger control to interact with a tablet (double tap, swipe, pinch zoom).	• To understand that people online may try to manipulate others, how this can make someone feel and how to identify and approach adults who can help. • To understand that photos can be shared online. • To understand the importance of seeking permission before sharing a photo. • To understand how to identify and approach adults who can help.

	• Experience a range of simple apps used for creating and presenting ideas. • Evaluate what is good about their work.	

Year Two Computing Objectives		
Computer Science (Programming and Computational Thinking) **Autumn 2 and Spring 1**	**Information Technology** **Spring 2, Summer 1 and Summer 2**	**Digital Literacy (Online Safety)** **Autumn 1**
• Predict what will happen in an algorithm using logical reasoning. • Investigate the way algorithms need precise, unambiguous instructions to work. • Make algorithms that solve a problem, using simple drawings or diagrams to plan the solution. • Improve algorithms, using debugging skills such as checking back through their plan and algorithm.	• Save and retrieve work using a sensible file name (child initials and type of work). • Setup a device, by logging in, logging out, and navigating to an app. • Input commands by using both hands on a keyboard, understanding where home keys, top and bottom rows of keys are. • Input commands using a mouse/touchpad, with an understanding of the difference between buttons. • Experience a range of simple apps, creating and presenting work to solve a given problem. • Evaluate what is good about work and how it could be improved.	• To understand what personal information means. • To understand that personal information is unique to themselves. • To understand that personal information should only be given to trusted adults. • To begin to identify the characteristics of people who are worthy of trust and who can help them make choices that keep them safe. • To understand that emotions can be a tool to help unsafe situations. • To understand the importance of checking with an adult before participating in an online environment.

Year Three Computing Objectives		
Computer Science (Programming and Computational Thinking) **Autumn 2 and Summer 2**	**Information Technology** **Spring 1, Spring 2 and Summer 1**	**Digital Literacy (Online Safety)** **Autumn 1**
• Predict what will happen for a more complex sequence of instructions which uses repetition. • Investigate how a problem can be solved by decomposing it into smaller steps and by planning a solution. • Make algorithms that solve problems which use sequences and repetition. • Improve more complex algorithms by identifying mistakes (bugs) and correcting (debugging).	• Save and retrieve files on the school network (a shared drive like Google), understanding that information can be saved in different places (an individual device, a local network or the cloud). • Setup a device by logging in and out, and managing simple individual passwords. • Input commands using a keyboard with increased fluency. • Create, modify and present work for a particular audience. • Evaluate their work and improve its effectiveness.	• To recognise when something encountered online does not feel right. • To identify some of the risks of sharing publically online. • To understand some measures that can be taken to stay safe. • To raise awareness about appropriate and inappropriate content for online sharing. • To understand potential consequences of sharing without consent. • To understand some of the ways we can protect ourselves online against manipulations. • To understand the ways the internet can make young people feel about themselves. • To understand the need for strong passwords. • To identify several forms of advertising can take online.

Year Four Computing Objectives		
Computer Science (Programming and Computational Thinking) **Autumn 2 and Summer 1**	**Information Technology** **Spring 1 and Spring 2**	**Digital Literacy (Online Safety)** **Autumn 1 and Summer 2**
- Plan the solution to a problem by decomposing into smaller parts e.g. with a flow diagram, storyboard or other plan. - Investigate how algorithms work and identity the purpose of the different parts of an algorithm. - Make programs which use sequences, repetition and inputs and outputs when necessary. - Improve a program by debugging systematically.	- Save and retrieve work over the World Wide Web, the school network or Cloud system like Google. - Use Input devices fluently, such as keyboards, mice and/or touchscreens. - Create, modify and present work for a particular audience, using built in functions that help the user e.g. spellchecker, dictate, immersive reader. - Evaluate their work and improve it, based on other people's views. - Collect basic qualitative data. - Display quantitative data using computer-based software. - Interpret discrete and continuous data bar charts and time graphs	- Distinguish between personal and private information. - Give reasons why I should only share information with people I choose to and can trust. - Explain that if I am not sure or I feel pressured, I should ask a trusted adult. - Understand and can give reasons why passwords are important. - Describe simple strategies for creating and keeping passwords private. - Describe how connected devices can collect and share my information with others. - Identify strategies for dealing responsibly with cyberbullying.

Year Five Computing Objectives

Computer Science (Programming and Computational Thinking) Autumn 2 and Spring 2	Information Technology Summer 1	Digital Literacy (Online Safety) Autumn 1, Spring 1 and Summer 2
• Plan efficient solutions to problems that include controlling or simulating physical systems, using decomposition to solve the problem. • Make programs using more complex algorithms, selecting when to use sequences, selection, (if, then), repetition and a range of inputs and outputs. • Investigate how algorithms work on different platforms, by comparing one block-based code language to another (e.g. Scratch with 2Code). • Improve code by systematically testing and debugging it, with an understanding of logic and syntax bugs.	• Recognise different parts of a school or office network e.g. server, switch, router, client, Wi-Fi point, and explain the purpose of each. • Understand online communication and collaboration tools are used for different purposes. • Use a search engine efficiently by filtering and begin to understand how results are selected and ranked. • To understand that the World Wide Web is one of the services offered on the internet. • To know that the World Wide Web consists of many websites and web pages that can be accessed using the internet. • To understand that many people remix content to work on the World Wide Web.	• Create and use strong and secure passwords. • Explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice, messages, and geolocation) with others. • Explain how and why some apps may request or take payment for additional content (e.g. in-app purchases) and explain why I should seek permission from a trusted adult before purchasing. • To define cyber bullying. • To explore the differences and similarities between cyber bullying and more traditional forms of bullying. • To understand what to do if confronted with cyber bullying.

Year Six Computing Objectives		
Computer Science (Programming and Computational Thinking) **Autumn 2 and Summer 1**	**Information Technology** **Spring 1 and Spring 2**	**Digital Literacy (Online Safety)** **Autumn 1 and Summer 2**
- Plan programs to achieve a specific goal, including controlling or simulating of physical systems by decomposing and by choosing an efficient method of planning i.e. storyboarding, flow diagrams or other method. - Make algorithms which find solutions to problems, choosing when to use sequences, functions, repetition, selection (if, then, else) or variables. - Investigate different ways of evaluating algorithms for effectiveness and efficiency. - Improve algorithms, systematically testing and debugging errors with an understanding of logic and syntax bugs.	- Use search tools within a system to find saved work. - Help ensure that devices around the school are setup probably and secured when not in use. - Create content using more than one type of software which solves problems, with a regard to audience and user needs. - Use Input devices fluently, such as keyboards, mice, touchscreens and voice command to enter data in a system. - Evaluate their work and improve it, understanding how photos, video and sound can aid this. - Construct surveys to collect data on a topic. - Display different data types using computer-based software. - Interpret information in different forms.	- Understand the importance of protecting their private information. - Know how to stay safe online. - Explain how the media can play a powerful role in shaping their ideas. - Understand what Cyberbullying is and how it can be prevented. - Make decisions about information sharing on the sites and services they use.

	• Present their findings to others, using feedback to improve work. • Extract information from data by solving problems using pie charts and line graphs.	