Computing Progression Overview

Strand	EYFS	Lower School	Upper School
Basic Use of Devices	• Know about technology and how to access it and use it for a purpose.	• Know how to store information and files by saving. • Know saved files can be retrieved and edited to improve them. • Can use both hands to type. • Can position their hands on the home keys. • Can use one space between words. • Become familiar with the position of letters on the keyboard. • Can type with increasing speed. • Can use return / enter key, shift and CAPS lock to enter capital letters and use delete and backspace to correct text.	• Can save and retrieve files independently. • Can recognise file types for text, image, sound and video files. • Can save work as a particular file type. • Can use a keyboard confidently to input text, characters and numbers. • Can use keyboard shortcuts on PCs and laptops e.g. Ctrl + C
Online Safety		2BeSafe units cover the themes of: • Self-Image and Identity • Online Relationships • Online Reputation • Online Bullying • Health, Wellbeing and Lifestyle • Privacy and Security • Managing Online Information • Copyright and Ownership See Education for a Connected World document for progression	
Computer Science / Programming	• Follows a longer list of instructions in a range of contexts • Follows and gives directions • Orders and sequences events using everyday language related to time • Can talk about sequences relevant to them e.g. school day; getting ready for bed • Describes a familiar route using directional language • Continues, copies and creates repeating patterns, spotting errors • Can make a simple floor robot move • Can use simple software to make something happen	**Skills** • Can give instructions for a partner to follow in a logical order. • Can program a simple programmable robot to do a particular task. • Can use programming software to make objects move onscreen. • Can use simple programming blocks to create a sequenced algorithm. • Can predict what will happen for a sequence of instructions in a program and explain reasons for the results. • Able to spot errors and debug algorithms where necessary. • Begins to use different inputs including motion sensors to control a device or onscreen actions.	**Skills** • Can break an open-ended problem into smaller parts. • Can write code using programming blocks to produce a specific desired outcome. • Can test their program and recognise when it needs debugging. • Can use a repeat command to make programming more efficient. • Can change an input to a program to achieve a different output. • Can use different inputs including temperature and light sensors to control a device or onscreen actions. • Can use 'if', 'else', 'then' commands to change outcomes. • Able to explain how more complex algorithms work and how errors can lead to different outcomes. • Can create a simple simulation of a real-world game / item e.g. dice.

		Knowledge	**Knowledge**
		• Know what an algorithm is and that they need to be in a logical, sequenced order • Know that algorithms can be used on computers and are used in everyday life e.g. making a cake, cleaning your teeth etc. • Know that algorithms can be changed to correct mistakes and that this is known as 'debugging'. • Know that writing instructions on the computer is known as 'writing code'. • Understand that the micro:bit is a tiny computer which needs code to make it work. • Understand how sensor inputs from the accelerometer can be used to detect movement.	• Know that they can write their own programs to accomplish specific goals. • Know that a programming block represents a piece of written code. • Know that breaking a problem into smaller parts is called 'decomposing'. • Know that programming blocks need to be selected and sequenced correctly for the right inputs and outputs to work. • Know that there are different forms of inputs and outputs e.g. press a key, when sprite clicked, sensor. • Know that commands can be conditional depending on inputs. • Understand what logic is and how it can be used to make different outputs happen according to different inputs. • Know that a computer model can provide information about a physical system.
Data Handling	• Can use tallies / mark making to count objects • Can tell you about different kinds of information such as pictures, video, text and sound	**Skills** • Can sort items using simple criteria. • Can organise data using a simple database. • Can retrieve specific data from a database. • Can search a ready-made database to answer questions. • Can represent collected data in a pictogram. • Can collect simple data and input it into a table to generate a graph or chart. • Can interpret simple graphs to answer questions. • Can use a totalling tool in database. • Can use an image bank to add images to a database. • Can use a binary tree (2Question) to separate and sort items. • Can create a branching database.	**Skills** • Can use a database and spreadsheet to collect and record data. • Can choose the most appropriate way to present data. • Can create a variety of graphs and charts to represent data. • Can incorporate percentages and averages into their spreadsheet. • Can create a spreadsheet to solve mathematical problems including involving shape and probability. • Can create their own databases of information records around a chosen topic. • Can search a database in different ways to find information and answers to questions. • Can navigate MS Excel using cell references. • Can use the SUM function in MS Excel. • Can sort data using filters and sorting tools.
		Knowledge • Know that items can be sorted by criteria. • Know that information can be shown in different ways. • Know the difference between a pictogram, block graph and bar graph. • Know how to generate binary (yes/no) questions.	**Knowledge** • Know that spreadsheets can be used to store data and carry out calculations. • Know that spreadsheets can be used to make calculations more efficient. • Know that using formulae allows the data to change and update the calculations automatically. • Know that there are ways to represent their data graphically and that spreadsheets can make the process of representing data easier. • Know that spreadsheets can be used to model real-life problems.

Multimedia	• Can use technology to show their learning	**Skills** • Can create their own documents using text and images from an image bank. • Can add sounds from a sound bank. • Can create a story using templates to make pictures move e.g. using 2Create a Story. • Can add backgrounds and animation to multimedia content. • Can upload sounds from a bank of sounds. • Can move, sequence and edit sounds to create different tunes. • Can create and upload their own recorded sounds and videos. • Can use painting tools to create artwork and draw images. • Can collect, organise and present data and information in digital content. • Can use presentation software to present slides using text and images.	**Skills** • Can combine a range of media for a specific outcome. • Can use text formatting to make a piece of writing fit for its audience and purpose. • Can add and edit images in a MS Word document. Can use text, photo and sound editing tools to adapt to different audiences. • Can change the format of a document using text boxes and alignment. • Can use bullet points, numbering and columns in a MS Word document. • Can add hyperlinks to an external website. • Can create a simple animation using animation software. • Can use backgrounds and sounds to make more complex and imaginative animations. • Can create and upload their own recorded sounds and videos. • Can adapt existing 3D models to suit the purpose. • Can work together collaboratively to create a concept map.
		Knowledge • Know that digital content can be represented in many forms. • Know that you can create images, write text and create sounds using a computer program. • Know that animation means an object that moves on screen. • Know that text can be made to look different by changing the font. • Know the sounds can be combined and edited to create music. • Know that digital sounds can be used to make music.	**Knowledge** • Know what a word processing tool is for. • Know how to adapt their writing format and style to suit the intended audience and purpose. • Know how animation frames create the illusion of movement. • Know what the Onion Skin tool does in animation. • Know what 'stop motion' animation is and how it is created. • Know what Computer Aided Design (CAD) is and how it is used in real-life purposes. • Know what 3D printing is and how it is used in real-life purposes. • Know that concept maps can be used to organise ideas.
Digital Literacy / Technology in Our Lives	• Know about technology and how to access it and use it for a purpose • Knows that information can be retrieved from books, computers and mobile digital devices	**Skills** • Can effectively retrieve relevant and purposeful digital content by carrying out simple searches on a search engine. • Can find out information from weblinks in the results. • Can open and reply to an email. • Can add an attachment to an email. • Can search an address book for an email contact.	**Skills** • Can structure search queries to locate specific information. • Can analyse the contents of a web page for clues about the credibility of the information. • Can create a blog or blog posts with a specific purpose.
		Knowledge • Know what technology is and how it is used outside of school. • Know that search engines can be used to look for things on the internet. • Know that search engines bring up results of weblinks. • Know the implications of inappropriate online searches. • Know that things can be shared electronically. • Know that email can be used to communicate quickly. • Know what the term CC means.	**Knowledge** • Know search terms can effect the effectiveness of search results. • Know what Computer Aided Design (CAD) is and how it is used in real-life purposes. • Understand how a blog can be used as an informative text. • Know the key features of a blog. • Know that that content included in their blog must carefully consider the end user.