Beeston Primary School
Computing Progression Grid

Computing will allow us to learn the importance of using technology in a certain way to keep ourselves safe. Coding and project development specifically challenges our Growth Mindset and resilience to create a final piece free from bugs and errors. We constantly reflect on our projects to debug and make our work better. With the opportunity to explore at our own pace we apply and develop our computing skills practically.

	Vocabulary	Computing Systems and Networks (x.1)	Creating Media (x.2 and x.5)	Programming (x.3 & x.6)	Data and Information (x.4)	Online Safety
FS	**Computer systems** Technology Share Create Internet **Creating Media** Screen Mouse Images Keyboard Paint **Data** Collect Set of photos Count Organise **Programming** Equipment Buttons Movement **Digital Literacy** Choices Internet Website	- Use different digital devices. - Recognise that you can access content on a digital device. - Use a mouse, touchscreen or appropriate access device to target and select options on screen. - Recognise a selection of digital devices. - Recognise the basic parts of a computer, e.g. mouse, screen, keyboard. - Select a digital device to fulfil a specific task, e.g. to take a photo.	- Use technology to explore and access digital content. - Operate a digital device with support to fulfil a task. - Create simple digital content, e.g. digital art. - Choose media to convey information, e.g. image for a poster.	- Explore technology. - Repeat an action with technology to trigger a specific outcome. - Recognise the success or failure of an action. - Follow simple instructions to control a digital device. - Recognise that we control computers. - Input a short sequence of instructions to control a device.	- Access content in a range of formats, e.g. image, video, audio. - Answer basic questions about information displayed in images e.g. more or less	- Are aware that some online content is inappropriate. - Are aware that information can be public or private. - Know to tell an appropriate adult if they see something on the computer that upsets them.

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Y1	**Computing Systems** Purpose Online tools Communicate **Creating Media** Videos Camera stills Sounds Image bank Word bank Space bar **Data** Pictogram Digitally **Programming** Instructions Buttons Robots Patterns Program **Digital Literacy** Rules Online Private information Email	**Technology around us** • To identify technology • To identify a computer and its main parts • To use a mouse in different ways • To use a keyboard to type • To use the keyboard to edit text • To create rules for using technology responsibly	**Digital painting** • To describe what different freehand tools do • To use the shape tool and the line tools • To make careful choices when painting a digital picture • To explain why I chose the tools I used • To use a computer on my own to paint a picture • To compare painting a picture on a computer and on paper **Digital writing** • To use a computer to write • To add and remove text on a computer • To identify that the look of text can be changed on a computer • To make careful choices when changing text • To explain why I used the tools that I chose • To compare writing on a computer with writing on paper	**Moving a robot** • To explain what a given command will do • To act out a given word • To combine forwards and backwards commands to make a sequence • To combine four direction commands to make sequences • To plan a simple program • To find more than one solution to a problem **Introduction to animation** • To choose a command for a given purpose • To show that a series of commands can be joined together • To identify the effect of changing a value • To explain that each sprite has its own instructions • To design the parts of a project • To use my algorithm to create a program	**Grouping data** • To label objects • To identify that objects can be counted • To describe objects in different ways • To count objects with the same properties • To compare groups of objects • To answer questions about groups of objects	--Use a simple password when logging on, where relevant. - Explain why we use passwords. - Recognise examples of personal information e.g. name, image. - Know who to tell if concerned about content or contact online. - Recognise that digital content belongs to the person who created it. - Talk about their use of technology at home.
Y2	**Computing Systems** Information sources Communication Purposes Website content **Creating Media** Paint effects Templates Animation Documents Index finger typing Enter/return Caps lock Backspace **Data** Capturing moments Magnified images Questions Data collection Graphs Charts Save Retrieve **Programming** Forward Backward Right-angle turn Algorithm Sequence Debug Predict **Digital Literacy** Appropriate/inappropriate sites Cyber-bullying Digital footprint Keyword searching	**Information technology around us** • To recognise the uses and features of information technology • To identify information technology in the home • To identify information technology beyond school • To explain how information technology benefits us • To show how to use information technology safely • To recognise that choices are made when using information technology	**Digital photography** • To know what devices can be used to take photographs • To use a digital device to take a photograph • To describe what makes a good photograph • To decide how photographs can be improved • To use tools to change an image • To recognise that images can be changed **Making music** • To say how music can make us feel • To identify that there are patterns in music • To describe how music can be used in different ways • To show how music is made from a series of notes • To create music for a purpose • To review and refine our computer work	• **Robot algorithms** • To describe a series of instructions as a sequence • To explain what happens when we change the order of instructions • To use logical reasoning to predict the outcome of a program (series of commands) • To explain that programming projects can have code and artwork • To design an algorithm • To create and debug a program that I have written **Introduction to quizzes** • To explain that a sequence of commands has a start • To explain that a sequence of commands has an outcome • To create a program using a given design • To change a given design • To create a program using my own design • To decide how my project can be improved	**Pictograms** • To recognise that we can count and compare objects using tally charts • To recognise that objects can be represented as pictures • To create a pictogram • To select objects by attribute and make comparisons • To recognise that people can be described by attributes • To explain that we can present information using a computer	- Remember a simple password to log onto the computer or a website. - Identify rules for acceptable use of technology in school. - Recognise what personal information is and the need to keep it private. - Recognise that spending a lot of time in front of a screen can be unhealthy. - Recognise that some information found online may not be true

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Y3	**Computer Systems** School network Devices Computer parts Collaborate Appropriate online communication Search tools Appropriate websites Owner **Creating Media** Multimedia Presentations Alignment Brush size Repeats Reflections Green screening Amend Copy Paste	**Data** Questioning Database Construct Contribute Recording data Data logger Present data **Programming** Sequence instructions Sequence debugging Test + improve Logo commands Sequence programming **Digital Literacy** Online safety rules Secure passwords Report abuse button Gaming Blogs	**Connecting computers** •To explain how digital devices function •To identify input and output devices •To recognise how digital devices can change the way we work •To explain how a computer network can be used to share information •To explore how digital devices can be connected •To recognise the physical components of a network	**Stop-frame animation** •To explain that animation is a sequence of drawings or photographs •To relate animated movement with a sequence of images •To plan an animation •To identify the need to work consistently and carefully •To review and improve an animation •To evaluate the impact of adding other media to an animation **Desktop publishing** •To recognise how text and images convey information •To recognise that text and layout can be edited •To choose appropriate page settings •To add content to a desktop publishing publication •To consider how different layouts can suit different purposes •To consider the benefits of desktop publishing	**Sequence in music** •To explore a new programming environment •I can identify that each sprite is controlled by the commands I choose •To explain that a program has a start •To recognise that a sequence of commands can have an order •To change the appearance of my project •To create a project from a task description **Events and actions** •To explain how a sprite moves in an existing project •To create a program to move a sprite in four directions •To adapt a program to a new context •To develop my program by adding features •To identify and fix bugs in a program •To design and create a maze-based challenge	**Branching databases** • To create questions with yes/no answers • To identify the object attributes needed to collect relevant data • To create a branching database • To identify objects using a branching database • To explain why it is helpful for a database to be well structured • To compare the information shown in a pictogram with a branching database	- Explain why we need to keep our password safe. - Recognise that digital content belongs to the person who first created it, but we can give permission for others to use it. - Recognise when to share personal information and when not to. - Recognise that some people lie about who they are online. - Are aware that games and films have age ratings.
Y4	**Computer Systems** Different networks Information collection Reliability Owners **Creating Media** Creating + modifying Specific purpose Photo modifying Keyboard shortcuts Bullet points Spell check Constructive feedback **Data** Database creation Database searches Inaccurate data **Programming** Type + edit logo commands Sensors Open-ended problems Bugs in programs Complex programming **Digital Literacy** Online safety rules Secure passwords Report abuse button Gaming Blogs		**The internet** •To describe how networks physically connect to other networks •To recognise how networked devices make up the internet •To outline how websites can be shared via the World Wide Web •To describe how content can be added and accessed on the World Wide Web •To recognise how the content of the WWW is created by people •To evaluate the consequences of unreliable content	**Audio editing** •To identify that sound can be digitally recorded •To use a digital device to record sound •To explain that a digital recording is stored as a file •To explain that audio can be changed through editing •To show that different types of audio can be combined and played together •To evaluate editing choices made **Photo editing** •To explain that digital images can be changed •To change the composition of an image •To describe how images can be changed for different uses •To make good choices when selecting different tools •To recognise that not all images are real •To evaluate how changes can improve an image	**Repetition in shapes** •To identify that accuracy in programming is important •To create a program in a text-based language •To explain what 'repeat' means •To modify a count-controlled loop to produce a given outcome •To decompose a program into parts •To create a program that uses count-controlled loops to produce a given outcome **Repetition in games** •To develop the use of count-controlled loops in a different programming environment •To explain that in programming there are infinite loops and count controlled loops •To develop a design which includes two or more loops which run at the same time •To modify an infinite loop in a given program •To design a project that includes repetition •To create a project that includes repetition	**Data logging** • To explain that data gathered over time can be used to answer questions • To use a digital device to collect data automatically • To explain that a data logger collects 'data points' from sensors over time • To use data collected over a long duration to find information • To identify the data needed to answer questions • To use collected data to answer questions	- Remember and use an individual password. - Recognise what kinds of websites are trustworthy sources of information. - Recognise the benefits and risks of different apps and websites. - Recognise that the media can portray groups of people differently. - Can rate a game or film they have made and explain their rating.

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Y5	**Computer Systems** Computing devices Internet parts Collaboration Responsibility Searching strategies Webpages **Creating Media** Online sharing Multimedia effects Multimedia modification Transitions Hyperlinks Editing tools Refining Online sharing **Data** Spreadsheets Complex searches (and/or:) Problem solving Present answers Analyse information Question data Interpret	**Programming** Explore procedures Refine procedures Variable Hardware + software control Change inputs Different outputs Articulate solutions Commands **Digital Literacy** Responsible online communication Informed choices Virus threats Blogs Messaging	**Sharing information** •To explain that computers can be connected together to form systems •To recognise the role of computer systems in our lives •To recognise how information is transferred over the internet •To explain how sharing information online lets people in different places work together •To contribute to a shared project online •To evaluate different ways of working together online	**Video editing** •To recognise video as moving pictures, which can include audio •To identify digital devices that can record video •To capture video using a digital device •To recognise the features of an effective video •To identify that video can be improved through reshooting and editing •To consider the impact of the choices made when making and sharing a video **Vector drawing** •To identify that drawing tools can be used to produce different outcomes •To create a vector drawing by combining shapes •To use tools to achieve a desired effect •To recognise that vector drawings consist of layers •To group objects to make them easier to work with •To evaluate my vector drawing	**Selection in physical computing** •To control a simple circuit connected to a computer •To write a program that includes count-controlled loops •To explain that a loop can stop when a condition is met, eg number of times •To conclude that a loop can be used to repeatedly check whether a condition has been met •To design a physical project that includes selection •To create a controllable system that includes selection **Selection in games** •To explain how selection is used in computer programs •To relate that a conditional statement connects a condition to an outcome •To explain how selection directs the flow of a program •To design a program which uses selection •To create a program which uses selection •To evaluate my program	**Flat-file databases** •To use a form to record information •To compare paper and computer-based databases •To outline how grouping and then sorting data allows us to answer questions •To explain that tools can be used to select specific data •To explain that computer programs can be used to compare data visually •To apply my knowledge of a database to ask and answer real-world questions	- Know where to find copyright free images and audio, and why this is important. - Critically evaluate websites for reliability of information and authenticity. - Demonstrate responsible use of a online services, and know a range of ways to report concerns.
Y6	**Computer Systems** Information movement Connecting devices Different audiences Research strategies Search result rankings Acknowledge resources **Creating media** Appropriate online tools Audience Atmosphere Structure Copyright Information collection HTML code Storing **Data** Generate Process Interpret Store Present information Plausibility Appropriate data tool Interrogate Investigations	**Programming** Predicting outputs Plan, program, test & review a program Program writing Control mimics + devices Sensors Measure input Create variables Link errors **Digital Literacy** Responsible online communication Informed choices Virus threats Blogs Messaging	**Communication** •To identify how to use a search engine •To describe how search engines select results •To describe how search engines select results •To explain how search results are ranked •To recognise why the order of results is important, and to whom •To recognise how we communicate using technology •To evaluate different methods of online communication	**Web page creation** •To review an existing website and consider its structure •To plan the features of a web page •To consider the ownership and use of images (copyright) •To recognise the need to preview pages •To outline the need for a navigation path •To recognise the implications of linking to content owned by other people **3D modelling** •To use a computer to create and manipulate three-dimensional (3D) digital objects •To compare working digitally with 2D and 3D graphics •To construct a digital 3D model of a physical object •To identify that physical objects can be broken down into a collection of 3D shapes •To design a digital model by combining 3D objects •To develop and improve a digital 3D model	**Variables in games** •To define a 'variable' as something that is changeable •To explain why a variable is used in a program •To choose how to improve a game by using variables •To design a project that builds on a given example •To use my design to create a project •To evaluate my project **Sensing** •To create a program to run on a controllable device •To explain that selection can control the flow of a program •To update a variable with a user input •To use an conditional statement to compare a variable to a value •To design a project that uses inputs and outputs on a controllable device •To develop a program to use inputs and outputs on a controllable device	**Spreadsheets** •To identify questions which can be answered using data •To explain that objects can be described using data •To explain that formula can be used to produce calculated data •To apply formulas to data, including duplicating •To create a spreadsheet to plan an event •To choose suitable ways to present data	- Explain what makes a strong password and why this is important at school and in the wider world. - Explain how algorithms are used to track online activities with a view to targeting advertising and information. - Know that there are laws around the purchase of games; the production, sending and storage of images; what is written online; and around online gambling.