Progression of skills for Computing

Computing is split into 5 different categories: **Online Safety, Programming, Creating Media, Computer Systems and Networks** and **Data and Information.** Below you will find the progression of skills that children should learn from EYFS until they leave us in year 4.

Online Safety		
EYFS	**End of KS1**	**End of Lower KS2**
Talk about good & bad choices in real life e.g. taking turns, saying kind things, helping others, telling an adult if something upsets you. Play appropriate games on the Internet. Talk about good and bad choices when using websites – being kind, telling a grown up if something upsets us & keeping ourselves safe by keeping information private.	Understand they need to follow certain rules to remain safe when visiting places online. Begin to understand that if you create something you own it. Learn that many websites ask for information that is private & discuss how to responsibly handle such requests. Learn that directory sites with alphabetical listings offer one way to find things on the Internet. Stay safe online by choosing websites that are good for them to visit & not inappropriate sites. Explore what cyber-bullying means & what to do when they encounter it. Know that if they put information online it leaves a digital footprint or "trail" & they need to manage it so it's not hurtful. Understand that keyword searching is an effective way to locate online information & how to select keywords to produce the best search results. Discuss criteria for rating informational websites a site. Realise that not all websites are equally good sources of information.	Agree sensible e-safety rules for the classroom. Choose a secure password for age-appropriate websites. Discuss what actions could be taken if they are uncomfortable or upset online e.g. Report Abuse button. Talk about what games they enjoy playing and what good choices are when playing games e.g. content, screen time. Comment and provide positive feedback on the work of classmates in school or online, or the work of others online.

Programming

End of EYFS	End of KS1	End of Lower KS2
Help adults operate equipment around the school, independently operating simple equipment. Use simple software to make things happen Press buttons on a floor robot and talk about the movements. Explore options and make choices with toys, software and websites	**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 **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	**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 **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

Creating Media

End of EYFS	End of KS1	End of Lower KS2
Use a mouse to rearrange objects and pictures on a screen. Recognise text, images and sound when using ICT. Use a camera or sound recorder to collect photos or sound Use paint programs to create pictures. Begin to use a keyboard see programming Develop an interest in ICT by using age appropriate websites or programs.	**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 **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	**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 **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

End of EYFS	End of KS1	End of Lower KS2
Recognise purposes for using technology in school and at home. Understand that things they create belong to them and can be shared with others using technology. Recognise that they can use the Internet to play and learn.	**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 **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	**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 **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

| Collect information as photos or sound files. Use a simple pictogram or set of photos to count and organise information. | **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

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 | **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

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 |