Curriculum Planning – Key skills and knowledge covered in each Year group

Computing

KS1

KS1			
Computing	The teaching sequence over the year must include: • A review of previous learning • Independent and group work • Links to other areas of the curriculum	**Learning, working and talking like a computer scientist**	Being introduced to the key vocabulary that a computer scientist would use; defining the key vocabulary that a computer scientist would use; high expectations of pupils 'talking' like a computer scientist.
		Logic	Predicting and analysing
		Algorithms	Making Steps and Rules
		Decomposition	Breaking down into parts
		Patterns	Spotting and using similarities
		Abstraction	Removing unnecessary detail
		Evaluation	Making judgement

Progression in Computing KS1

Year 1		Year 2		End of Key Stage Expectations
Theme 1	Technology around us. Teachcomputing.org	Theme 1	IT around us - Teachcomputing.org	• understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • create and debug simple programs • use logical reasoning to predict the behaviour of simple programs • use technology purposefully to create, organise, store, manipulate and retrieve digital content • recognise common uses of information technology beyond school • use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.
Theme 2	Code.org – Course A	Theme 2	Digital music - Teachcomputing.org	
Theme 3	Grouping data - Teachcomputing.org	Theme 3	code.org - course B	
Theme 4	Digital painting - Teachcomputing.org	Theme 4	Digit photography - Teachcomputing.org	
Theme 5	Digital writing - Teachcomputing.org	Theme 5	Pictograms - Teachcomputing.org	

Year 1

Theme 1		Theme 2		Theme 3		Theme 4		Theme 5	
Skills	**Knowledge**	**Skills**	**Knowledge**	**Skills**	**Knowledge**	**Skills**	**Knowledge**	**Skills**	**Knowledge**

To be able to identify technology as something that helps us. To be able to identify a computer and its main parts. To be able to use a mouse in different ways and use a keyboard to type on a computer.	To name the main parts of a computer. To click and drag a mouse to make objects on a screen. To save my work to and open my work from a file. To understand how technology can help us in our everyday lives. I can discuss how we benefit from rules for using technology. I can identify rules to keep us safe and healthy when we are using technology in and beyond the home.	Select and operate appropriate software to perform a variety of tasks and recognize that users have different needs and preferences for the technology they use. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Work respectfully and responsibly with others online. Develop programs with sequences and simple loops, to express ideas or address a problem. Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.	Use appropriate terminology in identifying and describing the function of common physical components of computing systems (hardware). Describe basic hardware and software problems using accurate terminology. Keep login information private, and log off of devices appropriately. Compare how people live and work before and after the implementation or adoption of new computing technology.	To be able to label objects. To be able to describe objects in different ways. To be able to count objects with the same properties. To choose how to group object and describe groups of objects. To be able to compare and answer questions about groups of objects. To decide how to group objects to answer a question.	A label is a property used to describe an object, eg 'green'. To understand that objects have different properties. To understand that objects can be grouped in different ways.	To make marks on a screen and explain which tools I used. To be able to use the shape tool and line tools. To be able to make careful choices when painting a digital picture. To be able to explain why I chose the tools I used. To be able to use a computer on my own to paint a picture. To be able to compare painting a picture on a computer and on paper.	To be able to describe what different freehand tools do. To create a picture in the style of an artist using the shape, fill, and undo tools. To say which tools were helpful and why. To know how to change the colour and brush sizes.	To be able to use a computer to write. To be able to add and remove text on a computer. To be able to make careful choices when changing text and explain why I used the tools that I chose. To be able to compare typing on a computer to writing on paper.	To identify and find keys on a keyboard to enter text into a computer. To understand that the look of text can be changed on a computer. To identify the toolbar and use bold, italic and underline. To change font and select all of the text by clicking and dragging. To decide if my changes have improved my writing.
Vocab	**Key Concepts**	**Vocab**	**Key Concepts**	**Vocab**	**Key Concepts**	**Vocab**	**Key Concepts**	**Vocab**	**Key Concepts**
Technology Computer Mouse Trackpad Keyboard Double-click	Decomposition Evaluation E-safety	Algorithm Debugging Click Double-Click Drag Drop Bug Program Programming Loop Repeat	Logic Algorithms Decompositions Patterns Abstraction Debugging E-safety	Label Object Property Value Data set	Decomposition Evaluation Logic	Tools Erase Undo fill	Logic Decomposition Abstraction Evaluation Creating	Cursor Space Backspace Toolbar Font Bold Italic Underline	Decomposition Evaluation Creating Logic Evaluation Persevering

Year 2

Theme 1		Theme 2		Theme 3		Theme 4		Theme 5	
Skills	**Knowledge**	**Skills**	**Knowledge**	**Skills**	**Knowledge**	**Skills**	**Knowledge**	**Skills**	**Knowledge**
To identify and sort the purposes of different devices based on their uses and features in and beyond school.	To describe some uses of computers. To understand the uses of information technology. To understand that some IT can be used in more than one way. To understand that there are different rules for using IT. To explain how information technology helps us. To explain how to use information technology safely and	To experiment with sound using a computer. To use a computer to create a musical pattern. To create music for a purpose. To review and refine our computer work.	To identify that there are patterns in music. To use a computer to experiment with pitch and tempo. Musical pattern can be refined on a computer To understand that a rhythm can be created on a computer. To understand that making changes to our work may make it better or worse.	Work respectfully and responsibly with others online. Model daily processes by creating and following algorithms (sets of step-by-step instructions) to complete tasks. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's	Compare how people live and work before and after the implementation or adoption of new computing technology. Keep login information private, and log off of devices appropriately. Explain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorized access.	To use a digital device to take a photograph. To make choices when taking a photograph. To use tools to change an image. To recognise that photos can be changed. To be able to explain why a photo has been changed.	To understand that there are steps to follow in order to take a good photograph. To describe what makes a good photograph. To understand that a photograph can be improved by retaking it. Different light sources can affect the quality of a photograph. To recognise that images can be changed.	To count and compare objects using tally charts. To create a pictogram. To select objects by attribute and make comparisons. To describe people by their attributes. To represent objects as pictures.	To explain that a computer can present information. To understand what a tally chart is. To understand that a computer can show data in different formats. To explain what a pictogram shows. To understand that we can tally objects using a common attribute. To understand how to create pictograms and

	to recognise that choices are made when using it.			sequence of events, goals, and expected outcomes. Develop programs with sequences and simple loops, to express ideas or address a problem. Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.			To understand that a range of photography skills need to be applied to capture a photo. To understand that not all images we see are real.		draw conclusions from them.
Vocab	**Key Concepts**	**Vocab**	**Key Concepts**	**Vocab**	**Key Concepts**	**Vocab**	**Key Concepts**	**Vocab**	**Key Concepts**
Information Technology (IT) Barcode Scanner Rules	Decomposition Evaluation E-safety	Pattern Rhythm Tempo Create Open Edit	Decomposition Creating Tinkering Patterns Evaluation	Digital footprint Algorithm Bug Debugging Click Double-Click Drag Drop Program Programming Loop Repeat	Logic Algorithms Decompositions Patterns Abstraction Debugging Persevering Abstraction Creating Tinkering Collaborating Evaluation	Image Digital Focus Editing Filter	Decomposition Creating Abstraction Evaluation E-safety	Organise Data Pictogram Compare Attribute Group	Decomposition Creating Patterns Logic