Cheadle Primary – the school at the heart of the village, free to flourish, ready to learn and succeed. **Progression of Skills: COMPUTING Year 4**

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic						
National Curriculum Learning Intentions	1 Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 2 Use sequence, selection, and repetition in programs; work with variables and various forms of input and output 3 Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 4 Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration 5 Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 6 Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information 7 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact					
NC LINKS	4,5,6,7	5,6,7	1,2,3	2,6	5,6,7	1,2,3,6
Computing Units	Computing systems and networks	Creating media	Programming A	Data and information	Creating media	Programming B
Computing Topics	The internet	Audio editing	Repetition in shapes	Data logging	Photo editing	Repetition in games
Key Knowledge	Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	Repetition in shapes Using a text-based programming language to explore count-controlled loops when drawing shapes.	Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	Using a block-based programming language to explore count-controlled and infinite loops when creating a game
Key Skills	describe how to access websites on the WWW explain the types of media that can be shared on the WWW explain what media can be found on websites recognise that I can add content to the WWW explain that there are rules to protect content suggest who owns the content on websites explain that not everything on the World Wide Web is true explain why I need to think carefully before I share or reshare content explain why some information I find online may not be honest, accurate, or legal	identify digital devices that can record sound and play it back identify the inputs and outputs required to play audio or record sound suggest how to improve my recording use a device to record audio and play back sound discuss why it is useful to be able to save digital recordings plan and write the content for a podcast save a digital recording as a file discuss ways in which audio recordings can be altered edit sections of of an audio recording open a digital recording from a file" use editing tools to arrange sections of audio suggest improvements to a digital recording	program a computer by typing commands" use a template to create a design for my program write an algorithm to produce a given outcome identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves identify patterns in a sequence choose which values to change in a loop design a program that includes count-controlled loops develop my program by debugging it make use of my design to write a program	identify data that can be gathered over time suggest questions that can be answered using a given data set use data from a sensor to answer a given question identify a suitable place to collect data talk about the data that I have captured" import a data set use a computer program to sort data use a computer to view data in different ways plan how to collect data using a data logger use a data logger to collect data draw conclusions from the data that I have collected explain the benefits of using a data logger interpret data that has been collected using a data logger	explain the effect that editing can have on an image change the composition of an image by selecting parts of it explain what has changed in an edited image" talk about changes made to images" choose appropriate tools to retouch an image give examples of positive and negative effects that retouching can have on an image sort images into 'fake' or 'real' and explain my choices compare the original image with my completed publication consider the effect of adding other elements to my work evaluate the impact of my publication on others through feedback"	predict the outcome of a snippet of code modify loops to produce a given outcome choose which action will be repeated for each object evaluate the effectiveness of the repeated sequences used in my program explain what the outcome of the repeated action should be explain the effect of my changes identify which parts of a loop can be changed re-use existing code snippets on new sprites develop my own design explaining what my project will do evaluate the use of repetition in a project select key parts of a given project to use in my own design build a program that follows my design evaluate the steps I followed when building my project
Learning Intentions	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 (WWW) To describe how content can be added and accessed on the World Wide Web (WWW) To recognise how the content of the WWW is created by people To evaluate the consequences of unreliable content	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	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 task into small steps To create a program that uses count-controlled loops to produce a given outcome	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	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	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 that 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
Resources	Various websites	Audacity	FMSLogo	Data logger	Paint.NET (for Microsoft Windows)	Scratch
Cross Curricular Links	PSHE Education for a Connected World	Science, English, Music Education for a Connected World		Science	Education for a Connected World	
Progression	This unit progresses students' knowledge and understanding of networks in Year 3. In Year 5, they will continue to develop their knowledge and understanding of computing systems and online collaborative working.	This unit progresses students' knowledge and understanding of creating media, by focusing on the recording and editing of sound to produce a podcast. Following this unit, learners will explore combining audio with video in the 'Video editing' unit in Year 5.	This unit progresses students' knowledge and understanding of programming. It progresses from the sequence of commands in a program to using count-controlled loops. Pupils will create algorithms and then implement those algorithms as code.	This unit progresses pupils' knowledge and understanding of data and how it can be collected over time to answer questions. The unit also introduces the idea of automatic data collection.	This unit progresses students' skills through editing digital images and considering the impact that editing can have on an image. Learners will also consider how editing can be used appropriately for different scenarios, and create and evaluate 'fake' images, combining all of their new skills.	This unit builds on learner's prior experience of programming. The KS1 units cover floor robots and ScratchJr, and Scratch is introduced in the Year 3 programming units.