Cheadle Primary – the school at the heart of the village, free to flourish, ready to learn and succeed. **Progression of Skills and Knowledge: COMPUTING Year 5**

	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	1,2,4,5,6	5,6,7	1,2,3,6	5,6	6	1,2,3,6
Computing Units	Computing systems and networks	Creating media	Programming A	Data and information	Creating media	Programming B
Computing Topics	Sharing information	Video editing	Selection in physical computing	Flat-file databases	Vector drawing	Selection in quizzes
Key Knowledge	Identifying and exploring how information is shared between digital systems.	Planning, capturing, and editing video to produce a short film.	Exploring conditions and selection using a programmable microcontroller	Using a database to order data and create charts to answer questions	Creating images in a drawing program by using layers and groups of objects.	Exploring selection in programming to design and code an interactive quiz
Key Skills	explain that networked digital devices have unique addresses explain that the internet allows different media to be shared recognise that connected digital devices can allow us to access shared files stored online send information over the internet in different ways compare working online with working offline make thoughtful suggestions on my group's work explain how the internet enables effective collaboration identify different ways of working together online recognise that working together on the internet can be public or private	experiment with different camera angles capture video using a range of filming techniques review how effective my video is create and save video content outline the scenes of my video explain how to improve a video by reshooting and editing select the correct tools to make edits to my video store, retrieve, and export my recording to a computer evaluate my video and share my opinions make edits to my video and improve the final outcome	create a simple circuit and connect it to a microcontroller explain what an infinite loop does program a microcontroller to make an LED switch on design a conditional loop program a microcontroller to respond to an input explain that a condition being met can start an action use selection (an 'if…then…' statement) to direct the flow of a program create a detailed drawing of my project describe what my project will do test and debug my project write an algorithm that describes what my model will do	create multiple questions about the same field order, sort, and group my data cards choose which field to sort data by to answer a given question explain what a 'field' and a 'record' is in a database combine grouping and sorting to answer more specific questions explain how information can be grouped choose multiple criteria to answer a given question choose which field and value are required to answer a given question explain the benefits of using a computer to create graphs present my findings to a group	discuss how a vector drawing is different from paper-based drawings identify the main drawing tools recognise that vector drawings are made using shapes" identify the shapes used to make a vector drawing move, resize, and rotate objects I have duplicated modify objects to create different effects use the zoom tool to help me add detail to my drawings change the order of layers in a vector drawing identify which objects are in the front layer or in the back layer of a drawing" copy part of a drawing by duplicating several objects group to create a single object suggest improvements to a vector drawing	identify conditions in a program identify the condition and outcomes in an 'if... then… else...' statement design the flow of a program which contains 'if… then… else…' implement my algorithm to create the first section of my program share my program with others test my program extend my program further identify ways the program could be improved
Learning Intentions	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	To explain what makes a video effective To identify digital devices that can record video To capture video using a range of techniques To create a storyboard 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	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 To explain 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 program that controls a physical computing project	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	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	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
Resources	Google Slides	Microsoft Photos (for Microsoft Windows 10)	Crumble controller + starter kit + motor	j2data Database	Google Drawings	Scratch
Cross Curricular Links	Education for a Connected World					
Progression	This unit progresses learners' knowledge and understanding of computing systems and online collaborative working.	This unit progresses learners' knowledge and understanding of creating media by guiding them systematically through the process involved in creating a video. The unit builds on the Year 4 unit 'Photo editing' where composition is introduced and the Year 3 unit 'Stop-frame animation' where learners explored some of the features of video production. By the end of this unit, learners will have developed the skills required to plan, record, edit, and share a video.	This unit assumes that learners will have prior experience of programming using a block-based language (eg Scratch) and understand the concepts of sequence and repetition. Key stage 1 units focus on floor robots and ScratchJr, however, experience of other languages or environments may also be useful.	This unit progresses pupils' knowledge and understanding of why and how information might be stored in a database, and looks at how tools within a database can help us to answer questions about our data. It moves on to demonstrate how a database can help us display data visually, and how real-life databases can be used to help us solve problems. Pupils create a presentation showing understanding and application of all the tools used within the unit.	This unit progresses learners' knowledge and understanding of digital painting and has some links to the Year 3 'Creating media – Desktop publishing' unit, in which learners used digital images. In this Year 5 unit, learners create images that could be used in desktop publishing documents.	This unit assumes that learners will have prior experience of programming using block-based construction (eg Scratch), understand the concepts of 'sequence' and 'repetition', and have some experience of using 'selection'. Learners will have completed 'Programming A – Selection in physical computing' before undertaking this unit, as this will provide them with the required knowledge of 'selection'.