

Chandlers Ridge Progression of Skills – Computing

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Teaching Focus		Technology all around us	Digital Writing	Using the Internet	PowerPoint Presentations	Programming Toys	Programming animations
Y1/2	NC OBJECTIVES	Recognise common uses of information technology beyond school	use technology purposefully to create, organise, store, manipulate and retrieve digital content	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	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	create and debug simple programs	create and debug simple programs
	LESSON AIMS	<ul style="list-style-type: none"> *Locate examples of technology in the classroom *Name the main parts of a computer *use a mouse to open a program *Type my name on a computer *Delete letters *Identify rules to keep us safe and healthy when we are using technology in and beyond the home 	<ul style="list-style-type: none"> *Type correctly on a digital device. *Use the space bar between words *Make a new line using enter *Add images and text to a document *Dictate into a digital device 	<ul style="list-style-type: none"> *Search the Internet using one word *Search the Internet to find results *Follow links to another web page. *Create content using information located online *Recognise and follow online safety rules 	<ul style="list-style-type: none"> * organise ideas for a presentation. * create a simple presentation with text. *add an image. *add animations *add slide transitions 	<ul style="list-style-type: none"> * create a sequence of instructions for people to follow (an algorithm) * explore a new device * plan and follow a set of instructions precisely * program a device * Create and debug simple programs 	<ul style="list-style-type: none"> * find the commands to move a sprite *Use a Start block in a program *change the value *Add and delete sprites * choose appropriate artwork for ay project
	Rationale	Recognise uses of technology within and beyond home/school	Use technology purposefully to create content	Retrieve and use content safely from online	Use technology purposefully to create an information presentation	execute programs by following precise and unambiguous instructions	Create and debug simple programs
	End Point	Use a mouse and keyboard to control a computer.	Create digital content using a desktop computer	Create content for an online blog	Create a presentation that combines text and images.	Use algorithms to program a toy around a designed circuit.	Create a 'Space race' project, with programmed sprites and backgrounds.
	Key Vocabulary	<i>technology, computer, mouse, keyboard, screen</i>	<i>Keys, space, font</i>	<i>Internet, online, search</i>	<i>Text, images, present, animate, transition, slides</i>	<i>Instructions, commands, control</i>	<i>command, sprite, block, programming,</i>
	Teaching Focus	Technology all around us	Digital Writing	Using the Internet	PowerPoint Presentations	Programming Toys	Animation and Programming

Y2	NC OBJECTIVES	Recognise common uses of information technology beyond school	use technology purposefully to create, organise, store, manipulate and retrieve digital content	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	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	understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions	use logical reasoning to predict the behaviour of simple programs
	LESSON OBJECTIVES	<ul style="list-style-type: none"> *Explain how technology helps us *Use a mouse to click and drag *Use a mouse to create a picture *Save my work to a file *Use the arrow keys to move the cursor *Identify rules to keep us safe and healthy when we are using technology in and beyond the home 	<ul style="list-style-type: none"> *Confidently type words quickly and correctly on a digital device. ^Use the space bar only once between words and use touch to navigate to words letter to edit *Copy and paste images and text *Add/paste images and text to a document *Dictate into a digital device more accurately and with punctuation. 	<ul style="list-style-type: none"> *Search the Internet using key words/phrases *Search the Internet to find results *Follow links to another web page. *Create content using information located online *Recognise and follow online safety rules 	<ul style="list-style-type: none"> * organise ideas for a presentation. * create a simple presentation with text. *add and format an image. *add animations *add slide transitions 	<ul style="list-style-type: none"> * create a sequence of instructions for people to follow (an algorithm) * explore a new device * plan and follow a set of instructions precisely * program a device * Create and debug simple programs 	<ul style="list-style-type: none"> *Use the commands to move a sprite * use more than one block by joining them together * say what happens when values are changes show that a project can include more than one sprite delete a sprite *add blocks to each of my sprites * decide how sprite will move * create an algorithm for each sprite
	Rationale	Recognise uses of technology within and beyond home/school	Use technology purposefully to create content	Retrieve and use content safely from online	Use technology purposefully to create an information presentation	Execute programs by following precise and unambiguous instructions	Create and debug simple programs
	End Point	Use a computer to create, save and retrieve content	Combine text and images to create digital content.	Create content for an online blog	Create a presentation that combines text and images.	Use and debug algorithms to program a toy/an onscreen turtle around a designed circuit.	Create a 'Space race' project, with programmed sprites and backgrounds.
	Key Vocabulary	<i>typing, double-click, save, open</i>	<i>backspace, toolbar, bold, italic, underline,</i>	<i>Internet, online, search engine, cursor</i>	<i>Text, images, present, animate, transiiton, slides</i>	<i>algorithms, debug</i>	<i>command, sprite, block, programming, algorithms</i>
	Teaching Focus	Creating Media – Desktop Publishing	Programming – Sequencing	Creating media – Editing Audio	Programming events and actions	Animation	Programming – Kodu

Y3	Rationale	Children to use skills taught in Y2 from word processing and apply in Microsoft publisher.	Children will explore the concept of sequencing in programming through Scratch.	Progresses students' knowledge and understanding of creating media, by focusing on the recording and editing of sound	Explores the links between events and actions, while consolidating prior learning relating to sequencing	This unit progresses students' knowledge and understanding of using digital devices to create media, exploring how they can create stop-frame animations.	This unit allows children to build on their programming knowledge from scratch to apply to creating a virtual world in Kodu.
	NC OBJECTIVES	select, use and combine a variety of software on a range of digital devices to design and create a range of content that accomplish given goals.	use sequence, in programs; work with variables and various forms of input and output	select, use and combine a variety of software on a range of digital devices to design and create a range of content that accomplish given goals.	use sequence, in programs; work with variables and various forms of input and output	*select, use and combine a variety of software on a range of digital devices to design and create a range of content that accomplish given goals.	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
	LESSON OBJECTIVES	<ul style="list-style-type: none"> * recognise how text and images convey information * recognise that text and layout can be edited * choose appropriate page settings * add content to a desktop publishing publication * consider how different layouts can suit different purposes * consider the benefits of desktop publishing 	<ul style="list-style-type: none"> * explore a new programming environment * identify that commands have an outcome * explain that a program has a start * recognise that a sequence of commands can have an order * change the appearance of my project * create a project from a task description 	<ul style="list-style-type: none"> * identify that sound can be digitally recorded: * use a digital device to record sound: * explain that a digital recording is stored as a file: * explain that audio can be changed through editing: * show that different types of audio can be combined and played together: * Evaluate sound files created 	<ul style="list-style-type: none"> * explain how a sprite moves in an existing project * create a program to move a sprite in 4 directions * adapt a program to a new context * develop a program by adding features * choose suitable keys to turn on additional features * build more sequences of commands to make my design work * identify and fix bugs in a program * design and create a maze-based challenge 	<ul style="list-style-type: none"> * explain that animation is a sequence of drawings or photographs * relate animated movement with a sequence of images * plan an animation * identify the need to work consistently and carefully * review and improve an animation * evaluate the impact of adding other media to an animation 	<ul style="list-style-type: none"> * investigate and evaluate the features of programming software. * program Kodu using 'When' and 'Do' instructions. * use tools and add features to create an original landscape in Kodu. * analyse and deconstruct code to work out its purpose. * program a character to be controlled around a custom track to reach a goal. * program a character to follow an automatic path.
	End Point	To have created a magazine page using template, layout and a range of styles.	The children will apply stages of program design through to make a representation of a piano.	Children will produce a podcast/jingle, which will include editing their work, adding multiple tracks, and opening and saving the audio files.	Learners design and code their own maze-tracing program.	Learners will use a range of techniques to create a stop-frame animation using tablets	Learners will plan, design and program a character round a virtual world.
	Key Vocabulary	<i>text, images, font, templates, layout</i>	<i>sprite, code, movement. block</i>	<i>input, audio</i>	<i>code, blocks, debug</i>	<i>stop-frame animation</i>	<i>variable, program</i>
	Y4	Teaching Focus	Computer systems & networks	Programming – Repetition in shapes	Interactive eBooks	Photo Editing	Data Loggers

Rationale	Children build on understanding of the purpose of technology from KS1 to understand how computers are connected to a network.	This unit progresses students' knowledge and understanding of programming.	Learners can build on word processing skills from previous units to create interactive eBooks.	Develop understanding of how digital images can be changed and edited.	Pupils will consider how and why data is collected over time.	Learners will explore the concept of repetition in programming using the Scratch environment
NC OBJECTIVES	<ul style="list-style-type: none"> *understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 	<ul style="list-style-type: none"> *use sequence and repetition in programs; work with variables and various forms of input and output * use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 	select, use and combine a variety of software (on a range of digital devices to design and create a range of programs, and content that accomplish given goals	<ul style="list-style-type: none"> *select, use and combine a variety of software (on a range of digital devices to design and create a range of programs, and content that accomplish given goals *Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, and presenting data and information	use sequence and repetition in programs; work with variables and various forms of input and output
LESSON OBJECTIVES	<ul style="list-style-type: none"> * describe how networks physically connect to other networks * recognise how networked devices make up the internet * outline how websites can be shared via the World Wide Web * describe how content can be added and accessed on the World Wide Web recognise how the content of the WWW is created by people * evaluate the consequences of unreliable content 	<ul style="list-style-type: none"> * identify that accuracy in programming is important * create a program in a text-based language * explain what 'repeat' means * modify a count-controlled loop to produce a given outcome * decompose a task into small steps ^ create a program that uses count-controlled loops to produce a given outcome 	<ul style="list-style-type: none"> *Add and modify shapes £Edit background *Combine text and images *Add sound *Hyperlink content 	<ul style="list-style-type: none"> *explain that digital images can be changed *change the composition of an image *make good choices when selecting different tools *recognise that not all images are real *evaluate how changes can improve an image 	<ul style="list-style-type: none"> * explain that data gathered over time can be used to answer questions * use a digital device to collect data automatically * explain that a data logger collects 'data points' from sensors over time * use data collected over a long duration to find information * identify the data needed to answer questions * use collected data to answer questions 	<ul style="list-style-type: none"> * develop the use of count-controlled loops in a different programming environment * develop the use of count-controlled loops in a different programming environment * explain that in programming there are infinite loops and count-controlled loops * develop a design that includes two or more loops which run at the same time * modify an infinite loop in a given program * design a project that includes repetition * create a project that includes repetition

	End Point	Learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure.	Learners will create programs by planning, modifying, and testing commands to create shapes and patterns.	Create interactive eBooks to be shared and accessed collaboratively.	To consider the impact that editing images can have, and evaluate the effectiveness of their choices.	Children will collect, log and analyse data.	To design and create a game which uses repetition, applying stages of programming design throughout.
	Key Vocabulary	<i>network, connection</i>	<i>commands, algorithms</i>	<i>hyperlink</i>	<i>image, edited, filtered</i>	<i>data, sensors, input</i>	<i>loops, repetition</i>
Y5	Teaching Focus	Word Processing	Programming – Selection	Video Editing	Databases	Vector Drawing	Programming – Crumbles
	Rationale	Children will learn about formatting images and organising content into an effective layout.	pupils develop knowledge of ‘selection’ by revisiting how ‘conditions’ can be used in programming,	This unit gives learners the opportunity to learn how to create short videos in groups	This unit progresses pupils’ knowledge and understanding of why and how information might be stored in a database.	pupils learn how to use the different drawing tools and how images are created in layers.	learners will use physical computing to explore the concept of selection in programming through the use of the Crumble programming environment.
	NC OBJECTIVES	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.	use sequence, selection, and repetition in programs; work with variables and various forms of input and output	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.	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	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.	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output
	LESSON OBJECTIVES	<ul style="list-style-type: none"> * Format images for a purpose. * use formatting tools to create an effective layout. * use the spellcheck tool. * change a page layout for a purpose. * create hyperlinks within a word document. 	<ul style="list-style-type: none"> * explain how selection is used in computer programs * relate that a conditional statement connects a condition to an outcome * explain how selection directs the flow of a program * design a program which uses selection * create a program which uses selection * evaluate my program 	<ul style="list-style-type: none"> * recognise video as moving pictures, which can include audio * identify digital devices that can record video * capture video using a digital device * recognise the features of an effective video * identify that video can be improved through reshooting and editing * consider the impact of the choices made when making and sharing a video 	<ul style="list-style-type: none"> * use a form to record information * compare paper and computer-based databases * choose which field to sort data by to answer a given question * outline how grouping and then sorting data allows us to answer questions * explain that tools can be used to select specific data * explain that computer programs can be used to compare data visually 	<ul style="list-style-type: none"> * identify that drawing tools can be used to produce different outcomes * create a vector drawing by combining shapes * use tools to achieve a desired effect recognise that vector drawings consist of layers * group objects to make them easier to work with * evaluate my vector drawing 	<ul style="list-style-type: none"> * control a simple circuit connected to a computer * write a program that includes count-controlled loops * explain that a loop can stop when a condition is met, eg number of times * conclude that a loop can be used to repeatedly check whether a condition has been met * design a physical project that includes selection * create a controllable system that includes selection

					* apply my knowledge of a database to ask and answer real-world questions		
	End Point	Children to apply formatting skills to produce a range of o creating a range of different word documents	Design a quiz in response to a given task and implement it as a program.	skills required to plan, record, edit, and finalise a video.	Pupils use tools within a database to order and answer questions about data. They create graphs and charts from their data to help solve problems.	explore the ways in which images can be grouped and duplicated to support them in creating more complex pieces of work.	learners will design and make a working model of a fairground carousel that will incorporate their understanding of how the microcontroller and its components are connected.
	Key Vocabulary	<i>Format, image, insert,</i>	<i>selection, conditions</i>	<i>audio, video, zoom, clipping, transition</i>	<i>field, order, sort, group</i>	<i>vector, object, layer</i>	<i>Input, output, LED, algorithms</i>
Y6	Teaching Focus	Computer systems & networks: Communication	Programming – Variables in games	Website Design	Programming – Sensors and Variables	3D Modelling	Spreadsheets & Text Based Programming
	Rationale	Learn about the World Wide Web as a communication tool	Explore the concept of variables in programming through games in Scratch	Introduce learners to the creation of websites for a chosen purpose	pupils will learn what variables are, and relate them to real-world examples of values that can be set and changed	learners will develop their knowledge and understanding of using a computer to produce 3D models.	Children to have opportunities to use different software packages in preparation for transition to secondary.
	NC OBJECTIVES	*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 * use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	use sequence, selection, and repetition in programs; work with variables and various forms of input and output	*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 *use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour.	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	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,	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

	<p>LESSON OBJECTIVES</p>	<ul style="list-style-type: none"> *identify how to use a search engine * describe how search engines select results * explain how search results are ranked * recognise why the order of results is important, and to whom * recognise how we communicate using technology * evaluate different methods of online communication 	<ul style="list-style-type: none"> * define a 'variable' as something that is changeable * explain why a variable is used in a program * choose how to improve a game by using variables * design a project that builds on a given example * use my design to create a project * evaluate my project 	<ul style="list-style-type: none"> * review an existing website and consider its structure * plan the features of a web page * consider the ownership and use of images (copyright) * recognise the need to preview pages * outline the need for a navigation path * recognise the implications of linking to content owned by other people 	<ul style="list-style-type: none"> * define a 'variable' as something that is changeable *explain why a variable is used in a program *choose how to improve a game by using variables *design a project that builds on a given example *create a design to create a project *create a project 	<ul style="list-style-type: none"> *use a computer to create and manipulate three-dimensional (3D) digital objects *compare working digitally with 2D and 3D graphics *construct a digital 3D model of a physical object *identify that physical objects can be broken down into a collection of 3D shapes *design a digital model by combining 3D objects *develop and improve a digital 3D model 	<ul style="list-style-type: none"> *Use and apply formulas in excel * write text-based commands *Create text commands/functions to program keyboard inputs * write basic python syntax to complete a series of challenges *use python language as a calculator
	<p>End Point</p>	<p>evaluate which methods of internet communication to use for particular purposes.</p>	<p>Create a game using variables</p>	<p>Create a webpage</p>	<p>pupils will apply their knowledge of variables and design create a game.</p>	<p>learners plan, develop, and evaluate their own 3D model.</p>	<p>Learners will explore programming using python.</p>
	<p>Key Vocabulary</p>	<p><i>search engine, world wide web, communication</i></p>	<p><i>code, program, variable</i></p>	<p><i>HTML code, copyright, hyperlink</i></p>	<p><i>variables, algorithms</i></p>	<p><i>graphics, 3D Modelling</i></p>	<p><i>formulae, cell, programming</i></p>