West Heslerton C of E Primary School
Computing Curriculum Progression

	EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
Computing systems and networks	**Nursery:** I know how to operate simple equipment, e.g. turn on CD player, uses a remote control, can navigate touch-capable technology with support. **Reception:** Can I begin to list different IT in my home.	Can I identify technology Can I identify a computer and its main parts Can I use a mouse in different ways Can I use a keyboard to type Can I use the keyboard to edit text Can I create rules for using technology responsibly	Can I recognise the uses and features of information technology and similarities and differences between digital and non-digital Can I identify information technology in the home Can I identify information technology beyond school Can I explain how information technology benefits Can I show how to use information technology safely Can I recognise that choices are made when using information technology Can I begin to show an understanding of the world wide web/internet	Can I explain how digital devices function Can I identify input and output devices Can I recognise how digital devices can change the way we work Can I explain how a computer network can be used to share information Can I explore how digital devices can be connected Can I recognise the physical components of a network	Can I describe how networks physically connect to other networks Can I recognise how networked devices make up the internet Can I outline how websites can be shared via the World Wide Web Can I describe how content can be added and accessed on the World Wide Web Can I recognise how the content of the WWW is created by people Can I evaluate the consequences of unreliable content	Can I explain that computers can be connected together to form systems Can I recognise the role of computer systems in our lives Can I recognise how information is transferred over the internet Can I explain how sharing information online lets people in different places work together Can I contribute to a shared project online Can I evaluate different ways of working together online	Can I identify how to use a search engine Can I describe how search engines select results Can I describe how search engines select results Can I explain how search results are ranked Can I recognise why the order of results is important, and to whom Can I recognise how we communicate using technology Can I evaluate different methods of online communication
Vocabulary	remote control names of equipment that use technology	Computer mouse/trackpad, draw, click, double-click, click and drag, input device, computer, keyboard, mouse, shift, space bar, capital letter, full stop, screen, typing, Safely, responsibly, computer, technology	Information Technology (IT), computer, USB (memory stick), resize, barcode, scanner/scan, device Internet, information, world wide web Permission, appropriate	Digital device, input, output, process, program, connection, network, network switch, network switch, server, wireless access point (WAP) non-digital, cables, sockets	internet, network, router, network, security, switch, server, wireless, access point (WAP), web page, web address, links, files, content, download, sharing, ownership, permission, information, accurate, honest, adverts, legal.	system, connection, digital, input, process, output, protocol, address, packet, chat, explore, slide deck, reuse, remix, collaboration	Search, search engine, Google, Bing, Yahoo!, Swisscows, DuckDuckGo, refine Index, crawler, bot, search engine, ranking, search engine, search engine optimisation, links, web crawlers, selection, ranking, communication, internet, public, private, one- way, two-way, one to one, one to many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround

	EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
Programming	**Nursery:** Can I make toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. Can I show an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets **Reception:** Can I develop digital literacy skills by being able to access, understand and interact with a range of technologies Can I complete a simple program on electronic devices	Can I explain what a given command will do Can I act out a given word Can I combine forwards and backwards commands to make a sequence Can I combine four direction commands to make sequences Can I plan a simple program Can I find more than one solution to a problem Can I choose a command for a given purpose Can I show that a series of commands can be joined together Can I identify the effect of changing a value Can I explain that each sprite has its own instructions Can I design the parts of a project Can I use my algorithm to create a program	Can I describe a series of instructions as a sequence Can I explain what happens when we change the order of instructions Can I use logical reasoning to predict the outcome of a program (series of commands) Can I explain that programming projects can have code and artwork Can I design an algorithm Can I create and debug a program that I have written Can I explain that a sequence of commands has a start Can I explain that a sequence of commands has an outcome Can I create a program using a given design Can I change a given design Can I create a program using my own design Can I decide how my project can be improved	Can I explore a new programming environment Can I identify that each sprite is controlled by the commands I choose Can I explain that a program has a start Can I recognise that a sequence of commands can have an order Can I change the appearance of my project Can I create a project from a task description Can I explain how a sprite moves in an existing project Can I create a program to move a sprite in four directions Can I adapt a program to a new context Can I develop my program by adding features Can I identify and fix bugs in a program Can I design and create a maze-based challenge	Can I identify that accuracy in programming is important Can I create a program in a text- based language Can I explain what 'repeat' means Can I modify a count-controlled loop to produce a given outcome Can I decompose a program into parts Can I create a program that uses count-controlled loops to produce a given outcome Can I develop the use of count- controlled loops in a different programming environment Can I explain that in programming there are infinite loops and count controlled loops Can I develop a design which includes two or more loops which run at the same time Can I modify an infinite loop in a given program Can I design a project that includes repetition Can I create a project that includes repetition	Can I control a simple circuit connected to a computer Can I write a program that includes count-controlled loops Can I explain that a loop can stop when a condition is met, eg number of times Can I conclude that a loop can be used to repeatedly check whether a condition has been met Can I design a physical project that includes selection Can I create a controllable system that includes selection Can I explain how selection is used in computer programs Can I relate that a conditional statement connects a condition to an outcome Can I explain how selection directs the flow of a program Can I design a program which uses selection Can I create a program which uses selection Can I evaluate a program	Can I define a 'variable' as something that is changeable Can I explain why a variable is used in a program Can I choose how to improve a game by using variables Can I design a project that builds on a given example Can I use my design to create a project Can I evaluate my project Can I create a program to run on a controllable device Can I explain that selection can control the flow of a program Can I update a variable with a user input Can I use an conditional statement to compare a variable to a value Can I design a project that uses inputs and outputs on a controllable device Can I develop a program to use inputs and outputs on a controllable device
Vocabulary	Click, On/Off, Up, Down, Space, Left, Right, Clear	sequence, program, debug, challenge, instructions, event, action, object, block, command, forwards, backwards, turn, clear,	instruction, sequence, clear, unambiguous, algorithm, program, sequence, order, algorithm, commands, prediction, artwork, design,	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion,	program, turtle, commands, code, snippet, algorithm, design, debug, logo, command, pattern, repeat, repetition, count controlled loop, value, count-controlled,	Microcontroller, Crumble controller, components, switch, motor, LED, Sparkle, crocodile clips, connect, battery box, program, condition, true,	variable, change, name, value, set, change, event, design, algorithm, code, task, artwork, program,

		go, left, right, plan, directions, algorithm, route, plan --- ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, start block, run, background, delete, reset, algorithm, predict, effect, change, value, design, instructions, delete, algorithm, appropriate,	route, mat, debugging, decomposition --- Sequence, command, program, run, program, start, outcome, predict, blocks, sprite, algorithm, design, actions, project, blocks, design, modify, change, design, build, match, compare, debug, features, evaluate	turn, point in direction, go to, glide, Sequence, event, task, design, run the code, order, note, chord, stage, costume, backdrop, design, algorithm, bug, debug --- Motion, event, sprite, algorithm, logic, move, resize, algorithm Extension block, pen up, set up, pen, design, actions, debugging, errors, setup	loop, trace, decompose, procedure, debug, program --- scratch, programming, sprite, blocks, code, loop, repeat, value, forever, count controlled loop, costume, animate,	false, input, output devices, selection, condition, action, task, design, selection, repetition, condition, action, microcontroller, Crumble controller, switch, crocodile clips, battery box Task, design, selection, repetition, algorithm, debug, evaluate --- Selection, condition, true, false, outcomes, conditional statement - the linking together of a condition and outcomes- algorithm, program, debug, Task, design, algorithm, input, program, selection, condition, outcomes, test, run, implement, share, evaluate, constructive	debug, improve, evaluate, share. --- micro:bit, makecode, input, process, output, flashing, USB, selection, condition, if... then.... Else, variable, random, sensing, accelerometer, compass, direction, design, task, algorithm, step counter, plan, code, test, debug.

	EYFS	Key Stage 1	Lower Key Stage 2		Upper Key Stage 2	
Data and Information	**Nursery:** I know that information can be retrieved from digital devices and the internet? **Reception:** Can I label objects Can I identify that objects can be counted Can I describe objects in different ways Can I count objects with the same properties Can I compare groups of objects Can I answer questions about groups of objects	Can I recognise that we can count and compare objects using tally charts Can I recognise that objects can be represented as pictures Can I create a pictograms and databases Can I select objects by attribute and make comparisons Can I recognise that people can be described by attributes Can I collect data Can I suggest simple questions to ask of data Can I answer simple questions using collected data Can I explain that we can present information using a computer	Can I create questions with yes/no answers Can I identify the object attributes needed to collect relevant data Can I create a branching database Can I identify objects using a branching database Can I explain why it is helpful for a database to be well structured Can I compare the information shown in a pictogram with a branching database	Can I explain that data gathered over time can be used to answer questions Can I use a digital device to collect data automatically Can I explain that a data logger collects 'data points' from sensors over time Can I use data collected over a long duration to find information Can I identify the data needed to answer questions Can I use collected data to answer questions	**Flat-file databases** Can I use a form to record information Can I compare paper and computer-based databases Can I outline how grouping and then sorting data allows us to answer questions Can I explain that tools can be used to select specific data Can I explain that computer programs can be used to compare data visually Can I apply my knowledge of a database to ask and answer real-world questions	**Spreadsheets** Can I identify questions which can be answered using data Can I explain that objects can be described using data Can I explain that formula can be used to produce calculated data Can I apply formulas to data, including duplicating Can I create a spreadsheet to plan an event Can I choose suitable ways to present data
Vocabulary	Mouse, Keyboard, screen , Cursor, Group, object, property, value, label, colour, data set, more, less, most, least, fewest, the same, search, image, size, shape	More than, less than, most, least, organise, data object, tally chart, votes, total Pictogram, enter, compare, objects, count, explain, more, less, more common, least common, attribute, group, same, different, more than/less than, most/least popular, sharing, data, conclusion, block diagram	Attribute, value, questions, table, objects, branching database, database, , equal, even, separate, order, organise, value, question, j2data, selecting, pictogram, compare, information, decision tree	data, table, input device, sensor, data logger, data point, interval, analyse, data set, import, export, logged, collection, review, conclusion, layout.	Database, data, information, record, field, sort, order, group, search, criteria, graph, chart, axis, compare, filter, presentation	Spreadsheet, data, data heading, data set, cells, columns and rows, object, spreadsheet application, format, common attribute, formula, calculation, cell reference, operation, range, duplicate, sigma Propose, question, organised, graph, chart, evaluate, results, comparison, questions, software, tools, data

	EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
Creative Media	**Nursery:** I can draw a picture on a screen **Reception:** I can create content such as a video recording, stories, and/or draw a picture on screen.	Can I describe what different freehand tools do Can I use the shape tool and the line tools Can I make careful choices when painting a digital picture Can I explain why I chose the tools I used Can I use a computer on my own to paint a picture Can I compare painting a picture on a computer and on paper Can I use a computer to write Can I add and remove text on a computer Can I identify that the look of text can be changed on a computer Can I make careful choices when changing text Can I explain why I used the tools that I chose Can I compare writing on a computer with writing on paper Can I use an Ipad (swipe/scroll/click) to find and play games from home screen links Can I begin to use a laptop keyboard and mouse	Can I know what devices can be used to take photographs Can I use a digital device to take a photograph Can I describe what makes a good photograph Can I decide how photographs can be improved Can I use tools to change an image Can I recognise that images can be changed Can I say how music/sounds can make us feel Can I identify that there are patterns in music Can I describe how music/sounds can be used in different ways Can I show how music is made from a series of notes Can I create audio recordings for a purpose Can I review and refine our computer work Can I add text and images to a desktop publishing document Can I change text and layout Can I use an Ipads to take photos, search internet, use pic collage Can I switch on a laptop and use it to carry out simple word processing	Can I explain that animation is a sequence of drawings or photographs Can I relate animated movement with a sequence of images Can I plan an animation Can I identify the need to work consistently and carefully Can I review and improve an animation Can I evaluate the impact of adding other media to an animation Can I recognise how text and images convey information Can I recognise that text and layout can be edited Can I choose appropriate page settings Can I add content to a desktop publishing publication Can I consider how different layouts can suit different purposes Can I consider the benefits of desktop publishing Can I use an Ipad to carry out – Internet	Can I identify that sound can be digitally recorded Can I use a digital device to record sound Can I explain that a digital recording is stored as a file Can I explain that audio can be changed through editing Can I show that different types of audio can be combined and played together Can I evaluate editing choices made Can I explain that digital images can be changed Can I change the composition of an image Can I describe how images can be changed for different uses Can I make good choices when selecting different tools Can I recognise that not all images are real Can I evaluate how changes can improve an image Can I use an Ipad to carry out Internet searches for a specific purpose Can I use a laptops to word process (**B,** *i,* U), and for Desktop publishing and save and retrieve documents	Can I recognise video as moving pictures, which can include audio Can I identify digital devices that can record video Can I capture video using a digital device Can I recognise the features of an effective video Can I identify that video can be improved through reshooting and editing Can I consider the impact of the choices made when making and sharing a video Can I identify that drawing tools can be used to produce different outcomes Can I create a vector drawing by combining shapes Can I use tools to achieve a desired effect Can I recognise that vector drawings consist of layers Can I group objects to make them easier to work with Can I evaluate my vector drawing Can I use an Ipad to carry out Internet searches for specific purposes, create Powerpoint documents and print Can I use a Laptop to word process (layout and	Can I review an existing website and consider its structure Can I plan the features of a web page Can I consider the ownership and use of images (copyright) Can I recognise the need to preview pages Can I outline the need for a navigation path Can I recognise the implications of linking to content owned by other people Can I use a computer to create and manipulate three- dimensional (3D) digital objects Can I compare working digitally with 2D and 3D graphics Can I construct a digital 3D model of a physical object Can I identify that physical objects can be broken down into a collection of 3D shapes Can I design a digital model by combining 3D objects Can I develop and improve a digital 3D model Can I use an Ipad confidently for a range of purposes and Air drop documents Can I use a Laptop to word process (formatting), for Desktop publishing, to

				searches, create a Pic collage with text Can I use a Laptop to Log on and shut down correctly, word process (font, colour, size) and use basic Desktop publishing		inserting pictures), for Desktop publishing, create basic Powerpoints, use Basic Excel and Print documents	create Powerpoints for a specific purpose and use Excel
Vocabulary	screen, draw, Ipad, computer	size, toolbar, shift, shape, line, tools, insert, paintbrush, erase, fill, undo, paint program, colour, size --------- Word processor, keyboard, mouse, cursor, select, font, toolbar, bold, italic, underline, Microsoft Word, keys, letters, type, numbers, space, backspace, text, capital letters, undo, redo, format, writing, typing, compare	device, camera, photograph, capture, image, digital, landscape, portrait, horizontal, vertical, field of view, narrow, wide, format, Framing, focal point, subject matter, field of view, format, compose, natural lighting, artificial lighting, flash, focus, subject background, foreground Editing, tools, colour, filter, images, Pixlr, light source, focus, filter, changed, real --------- music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, Neptune, pitch, tempo, rhythm, notes, instrument, create, emotion, pitch, pulse/beat, open, edit text, layout, font, images, copy, paste, delete, audio, record, microphone, speaker, stop, playback	Animation, flip book, stop frame animation, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency evaluation, animation, delete, frame, media, import, transition ---------- Text, images, advantages, disadvantages, communicate, font, font style, template, landscape, portrait, orientation, placeholder, desktop publishing, copy, paste, layout, purpose, benefit, content,	audio, record, playback, microphone, speaker, headphones, input, output, sound, start, stop, pause, save, file, edit, section, mixing, time shift. ------- Image, edit, arrange, select, crop, undo, save, copyright, pixels, rotate, flip, adjustment, effects, colours, hue/ saturation, sepia, save, version, illustrator, vignette, retouch, edit, clone, recolour, image, fake, real, composite, cut, copy, paste, background, foreground, combine, alter, zoom.	Video, audio, AV, recording, capture, zoom, storage, digital, tape, save, videographer, technique, pan, tilt, content, light, camera, angles, export, lighting, setting, computer, split, edit, timeline, transition, special effects, title screen, end credits, export, constructive, feedback. ------- vector, drawing tool, shapes, object, icon, toolbar, move, resize, colour, rotate, duplicate/ copy, organise, zoom, select, alignment grid, handles, consistency, modify, layers, front, back, order, copy, paste, group, ungroup, improvement, evaluate, alternatives, vector drawing.	Website, web page, browser, media, Hypertext Markup Language (HTML), Website, web page, breadcrumb trail, navigation, hyperlink, subpage, evaluate, implications, external link, embed, copyright, fair use. ------ 2D, 3D, 3D object, 3D space, view, resize, colour, lift, rotate, position, select, duplicate, dimension, placeholder, hole, group, ungroup, design, modify, evaluate, improve

	EYFS	Year 1	Year 2	Lower Key Stage 2	Upper Key Stage 2
Online safety	**Nursery:** I know to handle equipment safely. I begin to know that I shouldn't use devices without supervision **Reception:** I begin to give reasons why we need to stay safe online. Can I use the internet with adult supervision to find and retrieve information of interest to them	Can I identify what things count as personal information? Can I identify how to keep personal information private? Can I identify what is appropriate and inappropriate behaviour on the internet? Can I demonstrate how to safely open and close applications and log on and log off from websites? Can I use technology safely and identify where to go for help and support if I have concerns about online content/contact? Can I use key vocabulary to demonstrate knowledge and understanding in this strand?	Can I reflect on my behaviour online? Can I identify what is appropriate and inappropriate behaviour on the internet, recognising the term cyberbullying? Can I agree and follow sensible online safety rules? Can I seek help from an adult when I see something that is unexpected or worrying? Can I begin to demonstrate understanding of age-appropriate websites and adverts? Can I use key vocabulary to demonstrate knowledge and understanding in this strand?	Can I reflect on my own digital footprint and behaviour online? Can I identify what is appropriate and inappropriate behaviour on the internet, recognising the term cyberbullying? Can I agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords? Can I seek help from an adult when I see something that is unexpected or worrying? Can I demonstrate understanding of age-appropriate websites and adverts? Can I use key vocabulary to demonstrate knowledge and understanding in this strand?	Can I protect my own password and other personal information? Can I be a good online citizen and friend? Can I judge what sort of privacy settings might be relevant to reducing different risks? Can I seek help from an adult when they see something that is unexpected or worrying? Can I discuss scenarios involving online risk? Can I use key vocabulary to demonstrate knowledge and understanding in this strand?
Vocabulary	Safe, Internet, trusted adult, tell	safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, key, question, tell, safe, share, stranger, danger, internet.	safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, key, question, tell, safe, share, stranger, danger, internet.	safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying/bullying, plagiarism, profiles, account, private, public.	spam, link, privacy, virus, scam, phishing, inbox, junk, sender, subject, secure, safe, account, online, private, social media, adverts, cyberbullying, reporting, anonymous, victim, fraud/fraudulent, policy, private/personal.