RED HALL PRIMARY SCHOOL

COMPUTING CURRICULUM OVERVIEW

What is the intent of our Computing curriculum?

At Red Hall Primary School, we believe that all pupils should achieve and reach their full potential. As a school we not only want our children to achieve now, but for their whole lives. We aim to provide them with an exciting, engaging and authentic Computing curriculum that will do just this!

Our Computing Curriculum, allows all pupils to develop skills and knowledge that will prepare them to be responsible digital citizens, in a technology rich future. By experiencing a wide range of current technology, such as engaging physical computing devices (Beebots, Lego Wedo 2.0 kits and MicroBits); creative software such as 3D Paint and a variety of IT software, we aim to create confident, creative, curious and resilient individuals. By experiencing the latest Computing software, we can provide pupils with purposeful, innovative and exciting opportunities in Computing learning, allowing pupils to make memories and experience things they may have never experienced before. Pupils will see the purpose of Computing and its endless possibilities, beyond the limited uses they are familiar with e.g. playing internet games or watching YouTube videos.

Pupils may have limited access to technology at home however we believe that Computing can provide pupils with a wide range of cross-curricular skills that they can use across a variety of subjects and settings. These include problem-solving, critical thinking, resilience and creative thinking.

What experiences will the children receive?

- Based upon the National Curriculum, pupils will receive a creative, relevant curriculum that focuses on the progression of skills and knowledge.
- Discrete Computing lessons, pupils will receive an equal balance of Computer Science, IT and Digital literacy teaching.
- Receive high quality teaching that focuses on depth, progression and challenge.
- Pupils will develop computing 'life skills'.
- Receive e-safety lessons half termly to understand how to use technology safely and responsibly.
- Experience and participate in creative, exciting Computing projects.
- Access to a wide range of Computing software and devices.
- Expert visitors to deliver interactive experiences.
- Whole school events such as Safer Internet Day.
- Exciting extra-curricular clubs such as Animation club and Computing Club.

In addition, alongside our PSHE curriculum, pupils will learn how to become **active, responsible** digital citizens online. With the majority of pupils being active online at a young age and with a lack of parental understanding, we deliver a curriculum that teaches them how to act **safely** and **responsibly** on the internet and what to do if they do not feel safe online.

We also aim for our pupils to be **critical, informed users** of the internet, meaning they can identify reliable and credible information. This will help them with research as well as making responsible, informed decisions as adults.

In the EYFS provision we ensure all children are exposed to a variety of Computing equipment to prepare them for the Computing curriculum in Year 1. This includes:
- Unplugged activities to provide exposure to concepts such as sequencing and instructions.
- Tinker trays (e.g. broken pieces of machinery) to recognise different parts of technology.
- Technology placed in areas to use within role play
- Beebot continuous area to allow pupils to play with Beebots.

By the end of their time at Red Hall, what will all of our children have?
- Developed skills and knowledge across the three Computing strands (Computer Science, Digital Literacy and IT).
- Developed an enthusiasm for Computing.
- Participated in authentic, exciting Computing learning projects.
- Become confident, responsible users of the internet.
- Developed a range of cross-curricular skills such as resilience and problem-solving.
- A deeper understanding of the different uses of technology in our wider world.

Whole School Themes

Autumn 1: Community A Moment In Time	Autumn 2: Aspirational Tell Me a Story	Spring 1: Respect The Most Amazing Journey	Spring 2: Inclusive We Are Family	Summer 1: Nurturing Magic, Mystery and Mayhem	Summer 2: Growing together Dream BIG
Y1 – Technology around us Online Safety **Y2** – Technology around us Online Safety	**Y1** – Digital Painting **Y2** – Digital photography **Y3** – Creating media and stop frame animation	**Y1** – Moving a robot **Y2** – Robot algorithms **Y3** – Sequence in music **Y4** – Repetition in shapes	**Y1** – Grouping data and online safety **Y2** – Pictograms and online safety	**Y1** – Digital writing and online safety **Y2** – Making music and online safety	**Y1** – Intro to animation **Y2** – Intro to quizzes **Y3** – Programming B – Events and actions

Y3 – Computing systems and networks **Y4** – Computing systems and networks / Internet **Y5** – Computing systems and networks / sharing information and online safety **Y6** – Computing systems and networks	**Y4** – Creating media, audio editing and online safety **Y5** – Creating media, video editing and online safety **Y6** – Creating media and webpage creation	**Y5** – Programming A - selection in physical computing **Y6** – Programming A – Variables in games	**Y3 – Data and information / Branching data bases** **Y4** – Data and information / Data logging **Y5** – Data and information / flat file databases **Y6** – Data information	**Y3** – Creating media, desktop publishing and online safety **Y4** – Creating media, photo editing online and online safety. **Y5** – Creating media and vector drawing and online safety **Y6** – Creating media	**Y4** – Programming B and the repetition in games **Y5** – Programming B and selection in quizzes **Y6** – Programming B - Sensing

Progression of Skills

	Year 1	Year 2	Years 3	Year 4	Year 5	Year 6
Digital Literacy	• To create rules for using technology responsibly • Act if they find something inappropriate online or something they are unsure of (including identifying people who can help; minimising screen; online reporting using school system etc.) • Know they must tell a trusted adult immediately if anyone tries to meet them via the internet • To identify technology • To identify a computer and its main parts • To use a mouse in different ways • To use a keyboard to type • To use the keyboard to edit text	**Moving a robot** • Create a simple series of instructions to understand that algorithms are a sequence of instructions in everyday contexts. • To explain what a given command will do • To act out a given word • To combine forwards and backwards commands to make a sequence • To combine four direction commands to make **sequences** • To plan a simple **program** • To find more than one solution to a problem. • To predict what they think a program will do. **(Introduction to animation** • To choose a command for a given purpose • To show that a series of commands can be joined together • To identify the effect of changing a value • To explain that each sprite has its own instructions • To design the parts of a project • To use my algorithm to create a program)	• Esafety – understand the need to keep personal information and passwords private. **Connecting computers** • To explain how digital devices function • To identify input and output devices • To recognise how digital devices can change the way we work • To explain how a computer network can be used to share information • To explore how digital devices can be connected To recognise the physical components of a network	**The internet** • 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 • To describe how content can be added and accessed on the World Wide Web • To recognise how the content of the WWW is created by people and therefore may contain bias/unreliable content. • To evaluate the consequences of unreliable content • Recognise what kinds of websites are trustworthy sources of information. • Use tabbed browsing to open two or more web pages at the same time • Use different search engines and use a search engine to find a specific website	**Sharing information** • 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 e.g webpage • To evaluate different ways of working together online e.g webchats, google docs • Understand that some material on the internet is copyrighted and may not be copied or downloaded	**Communication** • To identify how to use a search engine (including how to use complex searches using such as '+' 'or' "find the phrase in inverted commas") • To describe how search engines select results • To explain how search results are ranked • To recognise why the order of results is important, and to whom • To recognise how we communicate using technology • To evaluate different methods of online communication • Understand that some websites and/or pop-ups have commercial interests that may affect the way the information is presented • Recognise why people may publish content that is not accurate and understand the need to be critical evaluators of content
Computer Science	**Moving a robot** • Create a simple series of instructions to understand that algorithms are a sequence of instructions in everyday contexts. • To explain what a given command will do • To act out a given word	**Robot algorithms** • To describe a series of instructions as a **sequence** • To explain what happens when we change the order of instructions • To use **logical reasoning** to **predict** the outcome of a program (series of commands)	**Sequence in music** • To explore a new **programming** environment • I can identify that each sprite is controlled by the commands I choose • To explain that a **program** has a start	**Repetition in shapes** To identify that accuracy in programming is important To create a **program** in a text-based language (LOGO) To explain what '**repeat**' means To modify a count-controlled loop to produce a given outcome To **decompose** a program into parts	**Physical Computing** • **Selection** in physical computing • Understand **input** and **output** • To control a simple circuit connected to a computer • To write a **program** that includes count-controlled **loops**	**Variables in games** • To define a '**variable**' as something that is changeable • To explain why a variable is used in a **program** • To choose how to improve a game by using variables • To design a project that builds on a given example

	- To combine forwards and backwards commands to make a sequence - To combine four direction commands to make **sequences** - To plan a simple **program** - To find more than one solution to a problem. - To predict what they think a program will do. **(Introduction to animation** - To choose a command for a given purpose - To show that a series of commands can be joined together - To identify the effect of changing a value - To explain that each sprite has its own instructions - To design the parts of a project - To use my algorithm to create a program)	- To explain that programming projects can have code and artwork - To design an **algorithm** - To create and **debug** a **program** that I have written **Introduction to quizzes** - To explain that a sequence of commands has a start - To explain that a sequence of commands has an outcome - To create a program using a given design - To change a given design - To create a program using my own design - To decide how my project can be improved.)	- To recognise that a sequence of commands can have an order - To change the appearance of my project - To create a project from a task description **Events and actions** - To explain how a sprite moves in an existing project - To create a program to move a sprite in four directions - To adapt a program to a new context - To develop my program by adding features - To identify and fix bugs in a program - To design and create a maze-based challenge	To create a program that uses count-controlled loops to produce a given outcome **Repetition in games** 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 which 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)	- To explain that a loop can stop when a condition is met, eg number of times (**Variables**) - To conclude that a loop can be used to repeatedly check whether a condition has been met **Selection in Quizzes** - 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	- To use my design to create a project - To evaluate my project **Sensing** - To create a **program** to run on a controllable device - To explain that **selection** can control the flow of a program - To update a **variable** with a user **input** - To use an conditional statement to compare a **variable** to a value - To design a project that uses **inputs** and **outputs** on a controllable device - To develop a **program** to use inputs and outputs on a controllable device
IT	**Digital writing** - To use a computer to write - To add and remove text on a computer - To identify that the look of text can be changed on a computer - To make careful choices when changing text - To explain why I used the tools that I chose - To compare writing on a computer with writing on paper **Grouping data** - To label objects - To identify that objects can be counted - To describe objects in different ways - To count objects with the same properties - To compare groups of objects - To answer questions about groups of objects **Digital Painting** - To describe what different freehand tools do - To use the shape tool and the line tools - To make careful choices when painting a digital picture - To explain why I chose the tools I used - To use a computer on my own to paint a picture - To compare painting a picture on a computer and on paper.	**Making music** - To say how music can make us feel - To identify that there are patterns in music - To describe how music can be used in different ways - To show how music is made from a series of notes - To create music for a purpose - To review and refine our computer work **Digital photography** - To know what devices can be used to take photographs - To use a digital device to take a photograph - To describe what makes a good photograph - To decide how photographs can be improved - To use tools to change an image - To recognise that images can be changed **Pictograms** - To recognise that we can count and compare objects using tally charts - To recognise that objects can be represented as pictures - To create a pictogram - To select objects by attribute and make comparisons - To recognise that people can be described by attributes To explain that we can present information using a computer	**Stop - frame animation** - To explain that animation is a sequence of drawings or photographs - To relate animated movement with a sequence of images - To plan an animation - To identify the need to work consistently and carefully - To review and improve an animation - To evaluate the impact of adding other media to an animation **Desktop publishing** - To recognise how text and images convey information - To recognise that text and layout can be edited - To choose appropriate page settings - To add content to a desktop publishing publication - To consider how different layouts can suit different purposes - To consider the benefits of desktop publishing **Branching databases** - To create questions with yes/no answers - To identify the object attributes needed to collect relevant data - To create a branching database - To identify objects using a branching database - To explain why it is helpful for a database to be well structured - To compare the information shown in a pictogram with a branching database	**Audio editing** - 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 **Photo editing** - 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 **Data logging** - 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	**Video editing** - To recognise video as moving pictures, which can include audio - To identify digital devices that can record video - To capture video using a digital device - To recognise the features of an effective video - 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 **Vector drawing** - 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 **Flat-file databases** - 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 a database to ask and answer real-world questions.	**Web page creation** - To review an existing website and consider its structure - To plan the features of a web page - To consider the ownership and use of images (copyright) - To recognise the need to preview pages - To outline the need for a navigation path - To recognise the implications of linking to content owned by other people **3D modelling** - To use a computer to create and manipulate three-dimensional (3D) digital objects - To compare working digitally with 2D and 3D graphics - To construct a digital 3D model of a physical object - To identify that physical objects can be broken down into a collection of 3D shapes - To design a digital model by combining 3D objects - To develop and improve a digital 3D model **Spreadsheets** - To identify questions which can be answered using data - To explain that objects can be described using data - To explain that formula can be used to produce calculated data - To apply formulas to data, including duplicating - To create a spreadsheet to plan an event - To choose suitable ways to present data

Life Skills	• Use ICT components- e.g. a mouse, keyboard (Pupils should be able to use left click, double click and start to understand that you can right click when needed) • Explain what the basic parts of a computer are used for (mouse, screen and keyboard)	• Log in to a computer with a username and password independently.	• Know how to save and print a document into a shared area (Microsoft word or PowerPoint.) • Use a search engine to find specific information	• Create folders in their personal area and save documents into this. • Delete, move and copy files. Use the automatic spell checker to edit spellings	• Use common keyboard shortcuts	• Use more advanced searching techniques when using a search engine. • Recognise common file types and extensions

National Curriculum Coverage

YEAR ONE

Previous Knowledge	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Pupils will have explored sequencing in EYFS using Beebots and other programmable devices. Pupils will have accessed a computer in the EYFS setting and developed confidence with how to use a mouse and complete simple tasks using this. For example, drawing a picture on paint.	**COMPUTING SYSTEMS AND NETWORKS** **Technology around us** **Online Safety**	**CREATING MEDIA** **Digital Painting**	**PROGRAMMING A** **Moving a robot**	**DATA AND INFORMATION** **Grouping data** **Online Safety**	**CREATING MEDIA** **Digital writing** **Online Safety**	**PROGRAMMING B** **Introduction to animation**
Curriculum	• Recognise examples of information technology beyond school • Use technology purposefully to create, store and retrieve digital content	• Use technology purposefully to create, store and retrieve digital content	• Understand what algorithms are; and that programs execute by following precise and unambiguous instructions • Create simple programs • Use logical reasoning to begin to predict the behaviour of simple programs	• Use technology purposefully to create, store and retrieve digital content • Use technology safely and respectfully, keeping personal information private	• Use technology purposefully to create, store and retrieve digital content • Use technology safely and respectfully, keeping personal information private	• Understand what algorithms are; and that programs execute by following precise and unambiguous instructions • Create simple programs • Use logical reasoning to begin to predict the behaviour of simple programs
Key Vocab	Technology, Computer, mouse/trackpad, keyboard, screen, click, drag, draw, click, double-click, Input device, Shift, space bar, Safely, responsibly, computer, technology.	paint program, tool, paintbrush, erase, fill, undo, primary colours, shape tools, line tool, fill tool,	Forwards, backwards, turn, clear, go, commands, Instructions, directions, left, right, algorithm, plan, program, route	Object, label, group, search, image, colour, size, shape, property, value, data set, more, less, most, least, fewest, same.	Word processor, keyboard, keys, letters, Microsoft Word, Google Docs, numbers, space, backspace, text cursor, underline, italics, bold, toolbar,	ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, background, delete, reset, algorithm, predict, Effect, change, value, block, Instructions, sprite, delete, algorithm, appropriate,

National Curriculum Coverage

<u>YEAR TWO</u>

Previous Knowledge	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Pupils will be able to confidently use name the parts of a computer and be able to use a keyboard and mouse independently, with little prompting from an adult. Pupils will understand that the internet is a resource that is used worldwide for *lots of different reasons*	**COMPUTING SYSTEMS AND NETWORKS** **Information technology around us** **Online safety**	**CREATING MEDIA** **Digital photography**	**PROGRAMMING A** **Robot algorithms**	**DATA AND INFORMATION** **Pictograms** **Online safety**	**CREATING MEDIA** **Making music** **Online safety**	**PROGRAMMING B** **Introduction to quizzes**
<u>Curriculum</u>	• Recognise common uses of information technology beyond school	• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content	• 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 accurately predict the behaviour of simple programs	• 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 purposefully to create, organise, store, manipulate and retrieve digital content	• 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 accurately predict the behaviour of simple programs
<u>Key Vocab</u>	IT, Computer, barcode, scanner, scan	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, background, foreground, Editing, tools, colour, filter, images, Pixlr, Format, framing, lighting, focus, filter, changed, real	Instruction, sequence, clear, unambiguous, algorithm, program, , order, commands, prediction, program, artwork, design, route, mat, debugging	More than, less than, most, least, organise, data, object, tally chart, votes, total, Pictogram, enter, compare, more than, less than, objects, count, more common, less common, attribute, group, same, different, data, sharing, cohesion	Music, quiet, loud, emotions, pattern, rhythm, pulse, tempo, notes, pattern, instrument, create, open, edit.	Sequence, command, program, run, program, start, predict, algorithm, blocks, sprite, project, modify, change, compare, debug, features, evaluate.

National Curriculum Coverage

YEAR THREE

Previous Knowledge	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Pupils will be confident in defining an algorithm and be confident in sequencing and debugging a problem. Pupils will be able to create algorithms for programmable devices and using software. Pupils will start to understand that different pieces of software are used for different purposes.	**COMPUTING SYSTEMS AND NETWORKS** **Connecting Computers**	**CREATING MEDIA** **Stop frame animation** **Online safety**	**PROGRAMMING A** **Sequence in music**	**DATA AND INFORMATION** **Branching databases**	CREATING MEDIA Desktop publishing Online safety	**PROGRAMMING B** **Events and actions**
Curriculum	• Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web.	• Select and use variety of software (including internet services) on a range of digital devices to design and create a range of programs.	• Design, write, and debug programs that accomplish specific goals. • Use sequence and selection in programs. • Explain how some simple algorithms work	• Select and use variety of software (including internet services) on a range of digital devices to design and create a range of programs. • Use technology safely, respectfully and know how to report a concern.	• Select and use variety of software (including internet services) on a range of digital devices to design and create a range of programs.	• Design, write, and debug programs that accomplish specific goals. • Use sequence and selection in programs. • Explain how some simple algorithms work
Key Vocab	Digital device, input, output, process, program, connection, network, network switch, Wireless access point (WAP)	Animation, flip book, stop frame animation, sequence, image, photograph, setting, character, consistency, evaluation, delete, frame, media, import	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence, event, task, design, character, bug, debug, design, algorithm	Attribute, value, questions, table, objects, Branching database, database, attribute, value, questions, objects, equal, even, separate, structure, compare, order, organise, selecting, pictogram, information.	Text, images, advantages, disadvantages, communicate, Font, font style, template, Landscape, portrait, orientation, placeholder, Desktop publishing, copy, paste, Layout, purpose, Desktop publishing, benefits	Move, resize, algorithm, Extension block, pen up, set up, Pen, design, event, action, Debugging, errors, test, actions, events

YEAR FOUR

Previous Knowledge	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Pupils will be confident with IT skills, such as copy and paste, save, print and their typing speed is developing. Pupils now understand more complex software such as Excel and how this is used to record data. Pupils are starting to develop confidence with using physical inputs, when programming.	**COMPUTING SYSTEMS AND NETWORKS** **The internet**	**CREATING MEDIA** **Audio editing** **Online safety**	**PROGRAMMING A** **Repetition in shapes**	**DATA AND INFORMATION** **Data logging**	CREATING MEDIA Photo editing Online safety	**PROGRAMMING B** **Repetition in games**
Curriculum	• Understand computer networks including the internet; explain how they can provide multiple services, such as the World Wide Web.	• 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. • Use technology safely, respectfully, and responsibly and know how to report a concern.	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems. • Use sequence, selection, and repetition in programs. • Use logical reasoning to explain how some simple algorithms work.	• Use sequence, selection, and repetition in programs; work with variables and various forms of inputs and outputs • 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.	• Use search technologies effectively • 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.	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems. • Use sequence, selection, and repetition in programs. • Use logical reasoning to explain how some simple algorithms work.
Key Vocab	Internet, network, router, network security, Network switch, server, wireless access point (WAP), router, Website, web page, web address, router, routing, route tracing, browser, links, files, content, ownership, permission, information, sharing, accurate, adverts, content	Audio, record, playback, microphone, speaker, headphones, input, output, sound, record, playback, start, pause, stop, podcast, save, file, edit, selection, open, save, mixing, time shift, Export, MP3, audio, editing, evaluate, feedback	Program, turtle, commands, code snippet, Algorithm, design, debug, Logo command, Pattern, repeat, repetition, count-controlled loop, trace, value, decompose, procedure	Data, table (layout), Input device, sensor, data logger, logging, data point, interval, Analyse, data set, import, export, collection, Analyse, review, conclusion	Image, edit, arrange, select, digital, crop, undo, save, copyright, composition, edit, save, pixels, crop, rotate, flip, mage, adjustments, effects, colours, hue/saturation, sepia, save, version, illustrator, vignette, mage, fake, real, composite, cut, copy, paste, alter, background, foreground, , publication, elements, original, font style, shapes, border, layer	Scratch, programming, sprite, blocks, code, loop, repeat, value, repeat, forever, infinite loop, count-controlled loop, costume, animate, costume, event block, duplicate, modify, design, sprite, algorithm, duplicate, debug, refine, evaluate

National Curriculum Coverage

YEAR FIVE

Previous Knowledge	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Pupils can organise their work independently in their work area e.g. appropriate file names and folders. Pupils will be able to access the benefits of the internet when completing research and creating documents. E.g. knowing how to select appropriate information.	**COMPUTING SYSTEMS AND NETWORKS** **Sharing information Online safety**	**CREATING MEDIA** **Video editing Online safety**	**PROGRAMMING A** **Selection in physical computing**	**DATA AND INFORMATION** **Flat-file databases**	CREATING MEDIA Vector drawing Online safety	**PROGRAMMING B** **Selection in quizzes**
Curriculum	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • • 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 • 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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; know how to report a concern	• 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. • Use logical reasoning to explain how some simple algorithms work and to detect errors in algorithms and programs	• 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.	• 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. Use logical reasoning to explain how some simple algorithms work and to detect errors in algorithms and programs.
Key Vocab	System, connection, digital, input, process, output, output, Protocol, address, packet, Chat, explore, slide deck, Chat, explore, Reuse, remix, collaboration	Video, audio, recording, storyboard, script, soundtrack, dialogue, apture, zoom, storage, digital, tape, AV (audiovisual), recording, save, videographer Video techniques: Zoom, pan, tilt, angle, lighting, setting, YouTuber, content, light, audio/sound, camera angle, colour, Export, computer, Microsoft Movie Maker, split, trim/clip, edit, titles, end credits, timeline, transitions, audio, soundtrack, content, retake/reshoot, special effects, title screen, end credits, export, constructive feedback	Microcontroller, Crumble controller, components, LED, Sparkle, crocodile clips, connect, battery box, program, repetition, infinite loop, output devices, connect, battery box, program, repetition, count-controlled loop, switch, motor, condition, true, false, input, Task, design, selection, repetition, condition,	database, data, information, record, field, sort, order, group, search, criteria, graph, chart, axis, compare, filter, chart, presentation.	Vector, drawing tools, shapes, object, icons, toolbar, move, resize, colour, rotate, duplicate/copy, Organise, zoom, select, object, alignment grid, resize, handles, consistency, modify, Layers, object, front, back, order, Copy, paste, group, ungroup, duplicate, vector drawing, reuse, improvement, evaluate, alternatives, vector drawing	Selection, condition, true, false, count controlled loop, outcomes, conditional statement - the linking together of a condition and outcomes- algorithm, program, debug, question, answer, algorithm, program, debug, test, run, evaluate, share, constructive, condition

National Curriculum Coverage

YEAR SIX

Previous Knowledge	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

Pupils will be confident using a range of software with ease e.g. Microsoft Word, Powerpoint and Excel. Pupils will be confident in explaining the positives and negatives of the internet. Pupils will be responsible digital citizens.	COMPUTING SYSTEMS AND NETWORKS Communication Online safety	CREATING MEDIA Web page creation Online safety	PROGRAMMING A Variables in games	DATA AND INFORMATION Spreadsheets	CREATING MEDIA 3D modelling Online safety	PROGRAMMING B Sensing
Curriculum	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts and adapt techniques for purpose. • • Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and use the opportunities they offer for communication and collaboration • 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 • 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 (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 • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts and adapt techniques for purpose. • Use sequence, selection, 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 (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, including collecting, analysing, evaluating and presenting data and information Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts and adapt techniques for purpose. • Use sequence, selection, 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
Key Vocab	Search, search engine, Google, Bing, Yahoo!, Swisscows, DuckDuckGo, refine, Index, crawler, bot, search engine, Ranking, search engine optimisation, links, web crawlers, content creator, selection, communication, internet, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround	Website, web page, browser, media, Hypertext Markup Language (HTML) logo, layout, header, media, purpose, Copyright, fair use, Web page, home page, preview, evaluate, device, Google Sites, breadcrumb trail, navigation, hyperlink, subpage, Hyperlink, evaluate, website, web page, implication, external link, embed	Variable, change, name, value, set, design, event, design, algorithm, code, test, debug, improve, evaluate, share	Spreadsheet, data, data heading, data set, cells, columns and rows, data item, object, spreadsheet application, format, common attribute, Formula, calculation, data, spreadsheet, input, output, cell reference, calculate, operation, formula, cell, range, duplicate, sigma, Propose, question, Graph, chart, evaluate, results, comparison, questions, software, tools, data	2D, 3D, 3D object, 3D space, view, resize, colour, lift, Rotate, position, select, duplicate, Dimensions, placeholder, hole, group, ungroup, design, modify, evaluate, improve.	Micro:bit, MakeCode, input, process, output, flashing, USB, Selection, condition, if... then... else, variable, random , Input, selection, condition, variable, sensing, accelerometer, Compass, direction, variable, navigation, design, task, algorithm, variable, step counter, Plan, create, code, test, debug