



# *Barrowby CE Primary School*

## Computing Curriculum

### **Vision:**

Computing technology underpins today's modern lifestyle, and we aim all pupils to gain the confidence and ability that they need in this subject, to prepare them for the challenge of a rapidly developing and changing technological world to make positive contributions to society.

### **Intent:**

At Barrowby CE primary School, our intent for computing is to provide all of our children with the skills, creativity and enthusiasm to live and thrive in a world which is increasingly dependent on technology.

### **Implementation:**

In order to achieve the outlined intentions, the Computing curriculum is continuously reviewed through monitoring and evaluation by the Subject Leader. Teachers demonstrate a high level of enthusiasm for the subject content and their expectations of the pupils.

We will reach these intentions through:

- **Computer Science** – the understanding of coding and programming across a range of physical devices and digital resources.
- **Information Technology** – the range of skills required to operate and manipulate specific programs, systems, and content.
- **Digital Literacy** – the knowledge required to use technology safely and to evaluate and react to any potential risks of the online/digital world.

We teach the National Curriculum through The Teach Computing Curriculum (NCCE) scheme. We also participate in 'Internet Safety Week' in which each class is provided with age appropriate texts and tasks. Cross-curricular opportunities are identified in order to ascertain links between termly topics and to ensure that Computing is not just seen as a 'stand alone' area. Staff are encouraged to share any gaps in their knowledge and skill sets to inform appropriate and individualised training/CPD.

In our teaching of Computing we endeavour to expose students to a variety of software, programs, and equipment in order to offer a range of appropriate challenges and experiences. Staff are provided with selected devices which they can explore within their classrooms and are guided to ensure that they are using relevant and up-to date technologies. Specific vocabulary for each year group is outlined and

this is modelled by teachers within their lessons. Within the curriculum all pupils will be supported to develop their recall of embedded knowledge and ensure that each year group works on an aspect of each the three areas of Computing. Sessions are adapted to meet the requirements of a specific cohort and lesson content is frequently reviewed by class teachers and the subject lead. Our scheme of work remains flexible and children share their thoughts on their 'computing learning journeys' to help enable sessions to be adapted to their interests and needs.

We have adapted and developed a comprehensive Computing scheme of work to support children with Special Educational Needs and Disabilities (SEND). It includes teaching strategies for a range of abilities, ensuring that all students, regardless of need, make progress.

### **Impact:**

The impact of our computing curriculum allows children to develop their computing knowledge, online safety and their computer literacy skills. We are able to assess the impact through learning walks, pupil voice, individual exercise books and projects created on the computers and physical technology. Through these assessments we can identify inspired learners and children who are fulfilling their potential.

Below is an outline of the impact we are looking for in our pupils in the curriculum area of Computing:

- Children can articulate and explain what computing is.
- Children are equipped with skills and computing knowledge.
- Children have a passion and enjoyment for computing.
- Children are confident and are able to use technology safely.
- Children are equipped with extensive computing knowledge and vocabulary, which is embedded.
- Children use their imagination and creativity to create their own pieces of work.
- Children use computing in a variety of ways to express their individuality.
- Children can enjoy and appreciate a variety of technology.

## The Computing Curriculum for Reception

	<b>Autumn Term – Ourselves Commotion in the Ocean</b>	<b>Spring Term - Extinct &amp; Endangered Wagon’s Roll</b>	<b>Summer Term - Homes and Habitats Open your Eyes</b>	
<b>Unit</b>	<p><u>Understanding the World</u> Children to explore and discover functions of electronical devices. Children can roleplay with a range of technology, both functioning and model/broken devices to discover how they function.</p>	<p><u>Physical Development</u> This unit will support the development of fine motor skills to become familiar with a range of input devices, including a keyboard.</p>	<p><u>Expressive arts and design</u> The use of painting and graphics applications to further support and develop creativity using a tablet. The children will be able to create drawings of their chosen topic to produce on a drawing application on the tablet.</p>	<p><u>Introduction to Programming</u> Physical programming using bluebots/code-a-pillar.  Children could create a story about the Bee Bot’s journey, such as around a local area or a country being studied, or they could sequence events within a story being studied. For example, children could guide the Bee Bot between different locations, characters and locations within Little Red Riding Hood.</p>
	<p>By the end of this unit children will be able to;</p> <ul style="list-style-type: none"> <li>-Identify electronical devices.</li> <li>-Use devices for a range of functions</li> <li>-Explore the correct uses of devices.</li> </ul>	<p>By the end of this unit children will be able to;</p> <ul style="list-style-type: none"> <li>-use an input device</li> <li>-use and develop skills on a keyboard</li> </ul>	<p>By the end of this unit children will be able to;</p> <ul style="list-style-type: none"> <li>- Understand how you can create images on digital devices.</li> <li>- Create and draw images on chosen applications</li> </ul>	<p>By the end of this unit children will be able to;</p> <ul style="list-style-type: none"> <li>- Programme an input and output device</li> <li>- Sequence events</li> <li>- Use directional inputs to move a device</li> </ul>
<b>Suggested SEND Support</b>	<p>Guidance and modelled support on how to use familiar and unfamiliar devices through learning and play.</p>	<p>Support structure on how to sit and manager devices such as a keyboard (E.g sat up, use of different fingers)</p>	<p>Guidance and modelled support on how to use familiar and unfamiliar devices through learning and play.</p>	<p>Use of symbols to support directions, linking to devices. Use a range of models to support the terms input and output e.g. Input bread into the toaster – Output toast made.</p>

Step				
1	Identify electrical devices	Use a keyboard and mouse in a variety of ways.	Describe how we can create images online and offline.	Understand how commands can given to people and computers.
2	Identify how electrical devices work.	Follow instructions to type using an internet typing activity e.g. Dance Mat Typing.	Make careful choices when painting a digital picture.	Create instructions using a programable toy for specific instructions.
3	Explore electronic devices in different ways and discover their functions.	Follow instructions to type using an internet typing activity e.g. Dance Mat Typing.	Use a computer on my own to paint a picture from a drawing created offline.	Create instructions using a programable toy for specific instructions.

## The Computing Curriculum for Year 1 and 2 Cycle A

	<b>Autumn Term - Ourselves</b>		<b>Spring Term Extinct &amp; Endangered</b>	<b>Summer Term - Homes and Habitats</b>
<b>Unit</b>	<u>Technology Around Us</u> Classify what is / is not technology in our classroom and school.	<u>Digital Painting</u> create own paintings, while getting inspiration from a range of other artists. Consider their preferences when painting with, and without, the use of digital devices.	<u>Grouping Data</u> Use labels to put objects into groups and label these groups. Sort objects into different groups, based on the properties they choose. Sort objects into different groups to answer questions about data.	<u>Introduction to animation</u> On-screen programming through ScratchJr. Explore the way a project looks by investigating sprites and backgrounds. Use programming blocks to use, modify, and create programs. Explore program design through the introduction of algorithms.
	By the end of this unit children will be able to; - explain technology is something that helps us. - switch on and log into a computer. - use a mouse to create a picture and to open a program.	By the end of this unit children will be able to; - make marks on a screen and explain which tools were used - use the shape and line tools effectively - choose appropriate paint tools and colours to recreate the work of an artist	By the end of this unit children will be able to; - describe objects using labels - identify the label for a group of objects and describe a property of an object - group objects in more than one way - compare groups of objects and can decide how to group objects to answer a question.	By the end of this unit children will be able to; - compare different programming tools - use more than one block by joining them together - say what happens when I change a value - create an algorithm for each sprite - add programming blocks based on my algorithm

		– Explain which tools were helpful and why		
<b>Suggested SEND</b>	<ul style="list-style-type: none"> <li>- Support children with examples to how technology is helping (Relating to everyday situations)</li> <li>- Reinforce key mouse skills, repetition</li> </ul>	<ul style="list-style-type: none"> <li>- Symbols to remind children of their role with examples of the output of each tool.</li> </ul>	<ul style="list-style-type: none"> <li>- Use of vocabulary/word mats to support topical learning</li> <li>- Examples of groups of objects</li> <li>- Knowledge of prior learning used to create groups to reduce being over complex.</li> </ul>	<ul style="list-style-type: none"> <li>- Symbols to remind children of their role with examples of the output of each tool.</li> <li>- Symbols and meanings of each programming block to remind children of functions.</li> </ul>
<b>Key Vocabulary</b>	Technology, computer, mouse, trackpad, keyboard, screen, click, drag, input device, shift, spacebar, capital letter, full stop, safely, responsibly	Paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, Wassily Kandinsky, feelings, colour, brush style, George Seurat, Pointillism, prefer, dislike, like	Object, label, group, search, image, colour, shape, property, value, data set, less, most, fewest, the same	ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, start, program, background, delete, reset, algorithm, predict, effect, change, value, block, instructions, appropriate, design
<b>Step</b>				
1	Identify technology, I can explain how these technology examples help us:	Describe what different free hand tools do I can draw lines on a screen and explain which tools I used: Use the shape tool and the line	Label objects Identify that objects can be counted	Choose a command for a given purpose: Show that a series of commands can be joined together
2	Identify a computer and its main parts I can name the main parts of a computer	Make careful choices when painting a digital picture. Explain why I chose the tools I used	Describe objects in different ways Count objects with the same properties -	Identify the effect of changing a value Explain that each sprite has its own instructions
3	Use a mouse in different ways I can click and drag to make objects on a screen - Use a mouse in different ways I can click and drag to make objects on a screen -	Use a computer on my own to paint a picture I can change the colour and brush sizes	Compare groups of objects Answer questions about groups of objects	Design the parts of a project
4	Use the keyboard to edit text			Use an algorithm to create a program

## The Computing Curriculum for Year 1 and 2 Cycle B

	<b>Autumn Term - Commotion in the Ocean</b>	<b>Spring Term - Wagon's Roll</b>	<b>Summer Term - Open your Eyes</b>	
<b>Unit</b>	<u>IT Around Us</u> How is information technology being used for good in our lives? With an initial focus on IT in the home, learners explore how IT benefits society in places such as shops, libraries, and hospitals. Whilst discussing the responsible use of technology, and how to make smart choices when using it	<u>Robot Algorithms</u> This unit develops learners' understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Learners will use given commands in different orders to investigate how the order affects the outcome. They will also learn about design in programming.	<u>Making Music</u> They will make patterns and use those patterns to make music with both percussion instruments and digital tools. Learners will share their creations and compare creating music digitally and non-digitally  <b>(Link to music curriculum)</b>	<u>Pictograms</u> Learners will begin to understand what data means and how this can be collected in the form of a tally chart. . They will then progress onto presenting data in the form of pictograms and finally block diagrams.  <b>(Link to Maths curriculum)</b>
	By the end of this unit children will be able to; - identify that a computer is a part of information technology - explain the purpose of information technology in the home - compare types of information technology - explain how information technology helps people - recognise how to use information technology responsibly	By the end of this unit children will be able to; - choose a series of words that can be enacted as a sequence - create different algorithms for a range of sequences (using the same commands) - compare my prediction to the program outcome - create an algorithm to meet my goal - test and debug each part of the program	By the end of this unit children will be able to; - describe how music makes me feel, e.g. happy or sad - listen with concentration to a range of music (links to the Music curriculum) - create a rhythm pattern - use a computer to experiment with pitch and duration - identify that music is a sequence of notes	By the end of this unit children will be able to; - record data in a tally chart - enter data onto a computer - use pictograms to answer simple questions about objects - answer 'more than'/'less than' and 'most/least' questions about an attribute - give simple examples of why information should not be shared
<b>Suggested SEND Support</b>	<ul style="list-style-type: none"> <li>- Supported with examples of information technology.</li> <li>- Set and guided questions to encourage formative assessment.</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-set algorithms to avoid overload</li> <li>- Questions are prepared differently. Avoiding complex vocabulary</li> <li>- Role play commands to show how an algorithm.</li> </ul>	<ul style="list-style-type: none"> <li>- Use of word banks and key vocabulary to support discussions and assessment.</li> <li>- Modelled patterns and sequences.</li> </ul>	<ul style="list-style-type: none"> <li>- Modelled examples of tally charts/pre-populated tally charts</li> <li>- Direct questioning based on pictograms to avoid overloading the information</li> <li>- Give real life situations/Role play on sharing of information.</li> </ul>

<b>Key Vocabulary</b>	Information technology (IT), computer, barcode, scanner/scan	Instruction, sequence, clear, unambiguous, algorithm, program, order, commands, prediction, artwork, design, route, mat, debugging	Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, Neptune, pitch, tempo, notes, instrument, create, open, edit	More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, data, tally chart, compare, count, explain, attribute, group, same, different, most popular, least popular
<b>Step</b>				
1	Recognise the uses and features of information technology	Describe a series of instructions as a sequence - Explain what happens when we change the order of instructions	Explain how music can make us feel Identify that there are patterns in music -	Recognise that we can count and compare objects using tally charts Recognise that objects can be represented as pictures
2	Identify information technology in the home To identify information technology beyond school	Use logical reasoning to predict the outcome of a program (series of commands) - Explain that programming projects can have code and artwork	Describe how music can be used in different ways Demonstrate how music is made from a series of notes	Create a pictogram - I can explain what the pictogram shows Select objects by attribute and make comparisons -
3	Explain how information technology benefits us Show how to use information technology safely -	Design an algorithm	Create music for a purpose	Explain that we can present information using a computer -
4		Create and debug a program that I have written		

## The Computing Curriculum for Year 3

The Computing Curriculum for Year 3				
Unit	Autumn Term - Stone Age		Spring Term - Ancient Greece	Summer Term - Ancient Egypt
Unit	<u>Connecting computers</u> Understanding of digital devices, with a focus on inputs, processes, and outputs.	<u>Branching databases</u> Create physical and on-screen branching databases	<u>Desktop publishing</u> Use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents.	<u>Sequence in music</u> Explore the concept of sequencing in programming through Scratch.
	By the end of this unit children will be able to; <ul style="list-style-type: none"> <li>- explain that digital devices accept inputs</li> <li>- explain that digital devices produce outputs</li> <li>- n explain how I use digital devices for different activities</li> <li>- recognise that a computer network is made up of a number of devices</li> <li>- identify how devices in a network are connected with one another</li> </ul>	By the end of this unit children will be able to; <ul style="list-style-type: none"> <li>- create two groups of objects separated by one attribute</li> <li>- arrange objects into a tree structure</li> <li>- group objects using my own yes/no questions</li> <li>- explain that questions need to be ordered carefully to split objects into similarly sized groups</li> <li>- compare two ways of presenting information</li> </ul>	By the end of this unit children will be able to; <ul style="list-style-type: none"> <li>- identify the advantages and disadvantages of using text and images</li> <li>- change font style, size, and colours for a given purpose</li> <li>- create a template for a particular purpose</li> <li>- define the term 'page orientation'</li> <li>- paste text and images to create a magazine cover</li> </ul>	By the end of this unit children will be able to; <ul style="list-style-type: none"> <li>- explain that objects in Scratch have attributes</li> <li>- identify that each sprite is controlled by the commands I choose</li> <li>- create a sequence of connected commands</li> <li>- combine sound</li> <li>- decide the actions for each sprite in a program</li> <li>- implement my algorithm as code</li> </ul>
Suggested SEND Support	<ul style="list-style-type: none"> <li>- Text and visual aids e.g to check for clarity and accessibility.</li> <li>- Physical connects to show the network.</li> <li>- Role play</li> </ul>	<ul style="list-style-type: none"> <li>- Questions are prepared differently. Avoiding complex vocabulary.</li> <li>- Leading questions on databases.</li> <li>- Topics to support children prior knowledge</li> </ul>	<ul style="list-style-type: none"> <li>- Text and visual aids e.g to check for clarity and accessibility.</li> <li>- Using wireless devices such as mouse and keyboard</li> <li>- Prompt sheets to support using shortcuts.</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-set algorithms to avoid overload</li> <li>- Questions are prepared differently. Avoiding complex vocabulary</li> <li>- Role play commands to show how an algorithms.</li> </ul>
Key Vocabulary	Digital device, input, output, process, program, connection, network, network switch, server, wireless access point (WAP)	Attribute, value, questions, table, objects, branching databases, objects, equal, even, separate, order, organise, j2data, selecting, pictogram, information, decision tree, questions	Text, images, advantages, disadvantages, communicate, font, style, template, desktop publishing, copy, paste, layout, purpose, benefits	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, event, task, design, code, run the code, order, note, chord, algorithm, bug, debug
Step				
1	Explain how digital devices function	Create questions with yes/no answers -	Recognise how text and images convey information	Explore a new programming environment

	Identify input and output devices	Identify the object attributes needed to collect relevant data		Identify that each sprite is controlled by the commands I choose
2	Explore how digital devices can be connected	Create a branching database Explain why it is helpful for a database to be well structured	Recognise that text and layout can be edited Choose appropriate page settings	Explain that a program has a start Recognise that a sequence of commands can have an order
3	Recognise the physical components of a network	Compare the information shown in a pictogram with a branching database	Add content to a desktop publishing publication	Change the appearance of my project
4				Create a project from a task description

## The Computing Curriculum for Year 4

	<b>Autumn Term - Romans</b>		<b>Spring Term - Grantham</b>	<b>Summer Term - Anglo-Saxons</b>
<b>Unit</b>	<u>The Internet</u> Appreciate the internet as a network of networks which need to be kept secure.	<u>Data Logging</u> Collect data as well as access data captured over long periods of time	<u>Repetition in Shapes</u> Create programs by planning, modifying, and testing commands to create shapes and patterns.	<u>Audio Editing</u> Record audio themselves and use Audacity to produce a podcast, which will include editing their work.
	By the end of this unit children will be able to; - demonstrate how information is shared across the internet - describe the different networked devices and how they connect - explain the types of media that can be shared on the World Wide Web (WWW) - explain why I need to think carefully before I share or reshare content - explain why some information I find online may not be honest, accurate, or legal.	By the end of this unit children will be able to; - choose a data set to answer a given question - I explain that sensors are input devices - use a computer program to sort data - use a data logger to collect data - interpret data that has been collected using a data logger	By the end of this unit children will be able to; - program a computer by typing commands - write an algorithm to produce a given outcome - identify patterns in a sequence - develop my program by debugging it	By the end of this unit children will be able to; - identify the inputs and outputs required to play audio or record sound - use a device to record audio and play back sound - plan and write the content for a podcast - edit sections of an audio recording - use editing tools to arrange sections of audio - suggest improvements to a digital recording

<b>Suggested SEND Support</b>	<ul style="list-style-type: none"> <li>- Text and visual aids e.g to check for clarity and accessibility.</li> <li>- Physical connects to show the network.</li> <li>- Role play</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-set questions or data to answer</li> <li>- Word mats to support complex vocabulary</li> <li>- Guided support when using computer programs.</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-set algorithms to avoid overload</li> <li>- Questions are prepared differently. Avoiding complex vocabulary</li> <li>- Strategies including ICT based records, can be used to reduced to rely on short- and long-term memory.</li> </ul>	<ul style="list-style-type: none"> <li>- Storyboards to guide discussions and content.</li> <li>- Writing scripts</li> <li>- New learning fits into the framework of what the pupils already know.</li> </ul>
<b>Key Vocabulary</b>	Internet, network, router, network security, network switch, wireless access point (WAP), router, website, web page, web address, router, routing, route tracing, browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, accurate, honest, adverts	Data, table (layout), input device, sensor, data logger, logging, data point, interval, analyse, import, export, logged, collection, analyse, review, conclusion	Program, turtle, commands, code, snippet, algorithm, design, debug, logo commands, pattern, repeat, repetition, count-controlled loop, value, decompose, procedure	Audio, record, playback, microphone, speaker, headphones, input, output, start, stop, podcast, save, file, selection, edit, mixing, time shift, export, MP3, evaluate, feedback
<b>Step</b>				
1	Describe how networks physically connect to other networks Recognise how networked devices make up the internet	Explain that data gathered over time can be used to answer questions Use a digital device to collect data automatically	Identify that accuracy in programming is important Create a program in a text-based language	Identify that sound can be digitally recorded: Use a digital device to record sound:
2	Outline how websites can be shared via the World Wide Web - Describe how content can be added and accessed on the World Wide Web	Use data collected over a long duration to find information Identify the data needed to answer questions	Explain what 'repeat' means Identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves Modify a count-controlled loop to produce a given outcome	Explain that a digital recording is stored as a file. Explain that audio can be changed through editing.
3	Evaluate the consequences of unreliable content – Explain that not everything on the World Wide Web is true.	Collect data to answer questions	Create a program that uses count-controlled loops to produce a given outcome	Understand that different types of audio can be combined and played together
4				Evaluate editing choices made

## The Computing Curriculum for Year 5

	Autumn Term - Space		Spring Term - Vikings	Summer Term Leisure & Entertainment
<b>Unit</b>	<p><u>Computing systems and networks</u> – Sharing information Develop understanding of computer systems and how information is transferred between systems and devices.</p>	<p><u>Data and information</u> – Flat-file databases To use tools within a database to order and answer questions about data</p>	<p><u>Creating media</u> – Video editing To develop and exposed to topic-based language and develop the skills of capturing, editing, and manipulating video.</p>	<p><u>Programming</u> – Selection in physical computing To use physical computing to explore the concept of selection in programming through the use of the Crumble programming environment. To be introduced to a microcontroller.</p>
	<p>By the end of this unit children will be able to;</p> <ul style="list-style-type: none"> <li>- describe that a computer system features inputs, processes, and outputs</li> <li>- explain the benefits of a given computer system</li> <li>- explain that data is transferred over networks in packets</li> <li>- explain that the internet allows different media to be shared</li> <li>- compare working online with working offline</li> <li>- recognise that working together on the internet can be public or private</li> </ul>	<p>By the end of this unit children will be able to;</p> <ul style="list-style-type: none"> <li>- explain how information can be recorded</li> <li>- explain what a 'field' and a 'record' is in a database</li> <li>- combine grouping and sorting to answer more specific questions</li> <li>- select an appropriate chart to visually compare data</li> </ul>	<p>By the end of this unit children will be able to;</p> <ul style="list-style-type: none"> <li>- explain that a video can include both visual and audio media</li> <li>- locate and identify the working features of a digital device that can record video</li> <li>- select a suitable device and software to capture my video</li> <li>- explain why lighting and angle are important in creating an effective video</li> <li>- store, retrieve, and export my recording to a computer</li> <li>- evaluate my video and share my opinions</li> </ul>	<p>By the end of this unit children will be able to;</p> <ul style="list-style-type: none"> <li>- build a simple circuit to connect a microcontroller to a computer</li> <li>- decide which output devices I control with a count-controlled loop</li> <li>- program a microcontroller to respond to an input</li> <li>- identify the outcome of user input in an algorithm</li> <li>- implement my algorithm to create the first section of my program</li> </ul>
<b>Suggested SEND Support</b>	<ul style="list-style-type: none"> <li>- Text and visual aids e.g to check for clarity and accessibility.</li> <li>- Physical connects to show the network.</li> <li>- Role play of situations to support understanding of content.</li> </ul>	<ul style="list-style-type: none"> <li>- Questions are prepared differently. Avoiding complex vocabulary.</li> <li>- Leading questions on databases.</li> <li>- Topics to support children prior knowledge</li> </ul>	<ul style="list-style-type: none"> <li>- Use of prompt sheets to guide independent use of devices.</li> <li>- Word Banks and Word Mats to guide understanding</li> <li>- Pre-set videos to avoid overload.</li> </ul>	<ul style="list-style-type: none"> <li>- Assisted support for motor skills.</li> <li>- Use of prompt sheets to guide independent use of devices</li> <li>- Modelled and structured steps to access devices.</li> </ul>

Key Vocabulary	System, connection, digital, input, process, output, protocol, address, packet, chat, explore, slide deck, reuse, remix, collaboration	Database, data, information, record, field, sort, order, group, search, criteria, value, graph, chart, axis, compare, filter, presentation	Video, audio, recording, storyboard, script, soundtrack, dialogue, capture, zoom, storage, digital, tape, AV (audiovisual), videographer, video techniques, zoom, pan, tilt, angle, YouTuber, content, camera, colour, export, trim/clip, titles, end credits, timeline, transitions, soundtrack, retake/reshoot, special effects, constructive feedback	Microcontroller, crumble controller, components, LED, Sparkle, crocodile clips, connect, battery box, program, repetition, infinite loop, count-controlled loop, condition, true, false, input, action, selection, motor, switch, algorithm, debug, evaluate
Step				
1	Explain that computers can be connected together to form systems Recognise the role of computer systems in our lives	Use a form to record information Compare paper and computer-based databases	Recognise video as moving pictures, which can include audio Identify digital devices that can record video	Control a simple circuit connected to a computer
2	Recognise how information is transferred over the internet Explain how sharing information online lets people in different places work together	Outline how grouping and then sorting data allows us to answer questions Explain that tools can be used to select specific data	Capture video using a digital device Recognise the features of an effective video	Write a program that includes count-controlled loops Explain that a loop can stop when a condition is met, eg number of times
3	Contribute to a shared project online Evaluate different ways of working together online	Explain that computer programs can be used to compare data visually Apply my knowledge of a database to ask and answer real-world questions	Identify that video can be improved through reshooting and editing Consider the impact of the choices made when making and sharing a video	Design a program which uses selection Create a program which uses selection
4				Evaluate a program

## The Computing Curriculum for Year 6

	Autumn Term – WW2		Spring Term – Walk on the Wild Side	Summer Term - London
Unit	<p><u>Computing systems and networks</u> – Communication</p> <p>Evaluate which methods of internet communication to use for particular purposes</p>	<p><u>Data and information</u> – Spreadsheets</p> <p>Create graphs and charts, and evaluate their results in comparison to questions asked.</p>	<p><u>Web Page Creation-</u></p> <p>identify what makes a good web page and use this information to design and evaluate own website using Google Sites</p>	<p><u>Programming– Sensing</u></p> <p>Simple programming where we build in and test in the programming environment before transferring it to a micro:bit.</p>
Unit	<p>By the end of this unit children will be able to;</p> <ul style="list-style-type: none"> <li>- compare results from different search engines</li> <li>- explain that a search engine follows rules to rank relevant pages</li> <li>- recognise some of the limitations of search engines</li> <li>- choose methods of communication to suit particular purposes</li> </ul>	<p>By the end of this unit children will be able to;</p> <ul style="list-style-type: none"> <li>- ask simple relevant questions which can be answered using data</li> <li>- apply an appropriate number format to a cell</li> <li>- construct a formula in a spreadsheet</li> <li>- apply a formula to multiple cells by duplicating it</li> <li>- explain why data should be organised</li> </ul>	<p>By the end of this unit children will be able to;</p> <ul style="list-style-type: none"> <li>- that websites are written in HTML</li> <li>- recognise the common features of a web page</li> <li>- say why I should use copyright-free images</li> <li>- add content to my own web page</li> <li>- explain what a navigation path is</li> <li>- create hyperlinks to link to other people's work</li> </ul>	<p>By the end of this unit children will be able to;</p> <ul style="list-style-type: none"> <li>- apply my knowledge of programming to a new environment</li> <li>- use a variable in an if... then... else... statement to select the flow of a program</li> <li>- experiment with different physical inputs</li> <li>- modify a program to achieve a different outcome</li> <li>- design the algorithm for my project</li> <li>- create a program based on my design</li> </ul>
Suggested SEND Support	<ul style="list-style-type: none"> <li>- Text and visual aids e.g to check for clarity and accessibility.</li> <li>- Role play of situations to support understanding communication</li> </ul>	<ul style="list-style-type: none"> <li>- Shortcuts and Word/support Mats to help format and input data</li> <li>- Pre-set formulas</li> </ul>	<ul style="list-style-type: none"> <li>- Shortcuts and Word/support Mats</li> <li>- Use of prompt sheets to guide independent use of devices.</li> <li>- Word Banks and Word Mats to guide understanding</li> </ul>	<ul style="list-style-type: none"> <li>- Modelled and structured steps to access devices.</li> <li>- Use of prompt sheets to guide independent use of devices</li> <li>- Word mats to support complex vocabulary.</li> </ul>
Key Vocabulary	<p>Search, search engine, Google, Bing, Yahoo, Swisscows, DuckDuckGo, refine. index, crawler, bot, optimisation, links, web crawlers, content creator, ranking, communication, internet, public, private, one-</p>	<p>Spreadsheet, data, data heading, data set, cells, columns and rows, data item, format, common attribute, formula, calculation, call reference, sigma, graph, evaluate, results,</p>	<p>Website, web page, browser, media, Hypertext Markup Language (HTML), layout, header, media, purpose, copyright, fair use, evaluate, preview, device, breadcrumb, trail, navigation, hyperlink, subpage, implication, external link, embed</p>	<p>Micro-bit, MakeCode, input, process, output, flashing, USB, selection, condition, if... then... else, variable, random, navigation, design, task, step counter, plan, create, code, test, debug</p>

	way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround	comparisons, questions, software, tools, data, propose		
<b>Step</b>				
1	Identify how to use a search engine Describe how search engines select results	Identify questions which can be answered using data Explain that objects can be described using data	Review an existing website and consider its structure Plan the features of a web page	Create a program to run on a controllable device Explain that selection can control the flow of a program
2	Explain how search results are ranked Recognise why the order of results is important, and to whom	Explain that formula can be used to produce calculated data Apply formulas to data, including duplicating	Consider the ownership and use of images (copyright) Recognise the need to preview pages -	Update a variable with a user input Use a conditional statement to compare a variable to a value
3	Recognise how we communicate using technology Evaluate different methods of online communication	Create a spreadsheet to plan an event Choose suitable ways to present data	Outline the need for a navigation path	Design a project that uses inputs and outputs on a controllable device
4			Recognise the implications of linking to content owned by other people	Develop a program to use inputs and outputs on a controllable device